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General information

Conference Dates
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Clinical and Didactic Centre, Medical University of Lodz
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English

Conference internet service
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Contents

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LEKARZY
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POLSKIE TOWARZYSTWO ORTOPEDYCZNE I TRAUMATOLOGICZNE
1928 A.D.

POLSKIE TOWARZYSTWO GINEKOLOGÓW I POŁOŻNIKÓW
FIGO

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Workshops

1. Abdominal Ultrasound
Paulina Oczoś, Alicja Wolska, Mirella Chałas, Anna Polańska, Paulina Lewandowska, Katarzyna Ławnicka, Karol Welc, Piotr Koprowicz, Rafał Skoneczny, Joanna Zaleska, Joanna Wojtania, Damian Stelmasiak

2.Chest and Abdominal X-ray
Paulina Oczoś

3. Zmierz się z nadciśnieniem – Warsztaty pomiaru ciśnienia
Jagienka Szulc

4. EKG
Część 1 : Gdzie jest Nemo ? – Warsztaty EKG od P do QRS
Bartosz Domański
Część 2: Sześć lat w Tybecie - O nieprzebytych zakamarkach zespołu QRS
Michał Jałocha
Część 3 : Nie ma fal – Warsztaty EKG odcinek ST
Kiet Anh Nguyen

5. Spirometria
Piotr Damiański Aleksandra Małolepsza, Tomasz Dembowski

6. Osłuchiwanie serca z prof. Drożdzem
prof. dr hab. n. med. Jarosław Drożdż, Aleksander Misiewicz, Paweł Maesser, Maria Olechowska, Katarzyna Klimczak, Armanda Belinda Wojtasińska, Martyna Stępień, Joanna Kućmierz, Julia Wnuk, Mateusz Błaszkiewicz

7. Droga do dobrostanu zawodowego.
Wojciech Pabjańczyk

8. Endoscopic workshops
dr n. med. Adam Janiak, Marcin Sochal, Michalina Czekałowska, Karolina Drążek, Karolina Westrych

9. To Stitch or not to Stitch?
Anna Waśniewska, Marcin Mostowy, Kacper Ruzik

10. How to do translational inter-disciplinary research in Neuroscience?
Ali Jawaid, PhD

Invitation

Dear Colleagues,

It is my great honour and pleasure to invite you to the Juvenes Pro Medicina Conference in Lodz, Poland. The National Conferences, organised by the Student's Scientific Society and, since 2004, also the Juvenes pro Medicina International Conferences enjoy a long-standing tradition and good reputation. The primary goals of the Student's Scientific Society at the Medical University of Lodz include: 1. Initiation and support of student scientific activity 2. Propagation of student scientific accomplishments 3. Facilitation of information flow and of the exchanges of medical knowledge and experiences 4. Organisation of workshops, debates and panel discussions 5. Dissemination and publication of results of student research projects.

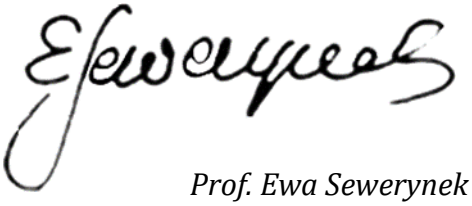
Now a few words about myself: I am Professor of Medicine at the University of Lodz & endocrinologist. Since the year 2002, I have been Curator of the Student's Scientific Society of the Medical University of Lodz. Similarly as you, I started my adventure with science at the Student Scientific Club during my medical studies at the Medical University of Lodz. That Scientific Club was then formally organised at the Institute of Endocrinology. When I joined that team of young research fans, a very exciting time followed, marked with initial successes and high hopes but also with first disappointments and doubts. I also presented the results of my first student research projects at conferences, some of them awarded or distinguished. In addition, what is very important for me, the friendships, established then, live on to this day. While the experiences, gained at the Student Scientific Clubs, proved useful in my later research activity.

Many years passed in my scientific activity, dealing with experimental models, cells and animals. In the meantime, I spent one year under a Fellowship in Paris, sponsored by the French Government and 1.5 year on a Fogarty Fellowship in San Antonio, Texas, USA. The subsequent chapter in my career was clinical in character, encompassing a number of clinical projects with participation of patients.

Currently, the main projects in the scope of my research include:

1. Evaluation of OPG/RANK/RANKL gene expression levels and of quantitative protein products of these genes in mononuclear cells of peripheral blood, following a therapy course with ibandronate and strontium ranelate. 2. Evaluation of the adherence to the protocol of therapy with alendronate in patients, treated for osteoporosis - the role of motivating factors in clinical practice. 3. Assessment of the correlations between oestradiol and testosterone concentrations and bone metabolism parameters in men suffering of osteoporosis. 4. Evaluation of a 10-year risk of bone fractures by the FRAX calculator and the NGYUEN monogram in patients treated for osteoporosis. 5. Evaluation of the demands for vitamin D in a group of women at the time of peak bone mass formation. 6. Evaluation of pro- and antiinflammatory and immune processes in patients with autoimmunological thyroiditis in euthyroid state, in the course of supplementation with vitamin D. 7. Evaluation of genetic predispositions to bone fractures in patients with low bone mass and osteoporosis. 8. Participation in studies on antioxidative effects of melatonin in the oxidative stress, induced by a bacterial endotoxin and in hepatic ischaemia-reperfusion. 9. Evaluation of the factors which affect the patient's compliance with long-term therapy protocol.

I express my best hope that the exciting period of medical studies will also be the onset of your scientific career. I wish you a very successful and interesting time during the Juvenes pro Medicina Conference in Lodz. Welcome to the Medical University of Lodz and have a fruitful and productive meeting.



Prof. Ewa Sewerynek
Curator of Students' Scientific Society
of the Medical University of Lodz

Dear Colleagues,

on behalf of Students' Scientific Association at the Medical University of Lodz it is our pleasure to meet you at the **57th Polish and 15th International Conference Juvenes Pro Medicina 2019.**

Juvenes Pro Medicina Conference for Students and Young Doctors brings together more than 300 active participants annually. The 2019 edition of JPM is about to be its 15th since JPM opened up to international participants.

Our scientific programme includes lectures of keynote speakers, 27 student sessions and numerous workshops, during which participants will master medical skills and broaden scientific network.

The objective of our conference is to create an international, scientific event for young scientists, where they can share and present their best work. Juvenes Pro Medicina addresses the challenges and opportunities in different medical fields and brings together young students, renowed scientists and doctors to exchange, debate and network.

The conference is held in Łódź, Poland, the second largest Polish city, and has its own unique industrial atmosphere.

We have confidence you will find the conference stimulating and rewarding.

President of JPM 2019 Conference &
Chairman of Students' Scientific Association

Plan of Scientific Sessions

Friday- 24th May

12:00-14:30	Basic Science 1.17	Otolaryngology 1.18	Pediatrics 1.20	Radiology 01.19	Ophthalmology 01.18	Public Health 01.11
15:30-18:00	Psychiatry and Psychology 1.17	Human Science in Medicine 1.18	Internal Medicine 1 1.20	Emergency and Forensic Medicine 01.19	Internal Medicine 2 1.27	Case study Pediatrics 01.11

Saturday 25th May

9:00-11:30	Cardiosurgery 1.17	Gynecology and Obstetrics 1.18	Dermatology 1.20	Case study Internal Medicine 2 1.19	Orthopedics 1.27	Case study Internal Medicine 1 01.11	Case study Surgery 01.12	Dentistry 01.19
12:00-14:30	Cardiology 1.17	Endocrinology and Diabetology 1.18	Neurology 1.20	Oncology 1.19	Surgery 1.27	PhD 01.11	Pharmacy 01.12	

JUVENES PRO MEDICINA

BASIC SCIENCE

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Databases comparison for optimized study of gut protein interactions

Zuzanna Karwowska

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Tutors: Janusz Szemraj

Introduction

Since colon and small intestine not only fulfill a number of key roles in the human body but are also home for millions of commensal bacteria those organs are being extensively studied. Huge load of data available on proteins expressed by gut cells as well as gut microbiome is being gathered in databases which are easily accessible online. Two main public databases that enable studies of interactions between proteins are The Biological General Repository for Interaction Datasets (BioGRID) and STRING.

Aim of the study

The aim of our study was to evaluate which of two databases contains more abundant and specific information on gut protein interactions and is more appropriate for studying interactions between proteins expressed in human guts.

Material and methods

All analysis was performed using Python programming language. From both databases we have downloaded protein-protein interactions data for homo sapiens. From the Human Protein Atlas (HPA) we have downloaded proteins expressed in human colon and small intestine. As all three databases use different annotation to identify proteins, we have annotated all ID to Uniprot IDs. Using NetworkX Python package, we have incorporated data from both databases in form of a network. For both networks we have created a sub-network consisting only of proteins expressed in human colon and small intestine. Each network was analyzed. Moreover, for both networks we have selected top 20 proteins that have the highest number of interactions and analyzed those protein properties. We have equally evaluated if proteins with highest number of interactions are also the proteins that are most expressed in selected organs.

Results

BioGrid contained 468 058 protein proteins interactions for human while STRING had 261 950 interactions. After creating a subnetwork for colon and small intestine based on both databases, we have noticed that BioGRID contains 223 490 interactions (edges) for 11 985 proteins (nodes) expressed in small intestine with a average number of interactions (degree) for each protein of 37.29. STRING contained 142 526 edges for 9 489 nodes with average degree of 30.0403 for small intestine. BioGRID had 222 148 edges for 11 952 nodes with av degree 37.1734 for colon. String had 141495 edges for 9460 nodes with average degree of 29.9144 for colon.

Conclusions

Both databases are abundant and can be used for building a reference network for all protein-protein interactions in human. For study of interactions in specific tissue we find that STRING is a more useful database as it contains more edges for proteins highly expressed in specific tissue. We find that this difference results from data used to build both databases.

The effect of human rhinovirus on the inflammatory response of human vascular endothelium

Aleksandra Likońska, Mateusz Gawrysiak

Medical University of Lodz

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Tutors: Maciej Chalubinski, Marek L. Kowalski

Introduction

60% of asthma exacerbations are associated with human rhinovirus (HRV) infections. While the impact of HRV on the airway epithelium is well understood, there is a significant lack of knowledge on its influence on the vascular endothelium.

Aim of the study

It is to assess the effect of HRV16 on the inflammatory response in human vascular endothelium.

Material and methods

Human umbilical vein endothelial cell (HUVEC) were incubated with HRV16 (MOI 0.1, 1.0 or 3.0) for 3 hours. After removal of HRV16, cells were further cultured for 96 hours. RANTES and IL-33 mRNA expression and protein concentrations in supernatants were assessed in hour 8, 24, 48 and 72 by Real-Time PCR and ELISA. ICAM- 1 surface expression was analyzed by flow cytometry right after removal (To) of HRV16 and 3 hours later (T1). Apoptosis was analyzed by flow cytometry in 8, 24, 48, 72 and 96 hour. ICAM-1 blocking experiments were performed with the use of anti-ICAM-1 antibodies.

Results

HRV16 caused 8000-fold RANTES mRNA expression with its peak in 24 hour after infection ($p<0.05$). Inhibition of ICAM-1 with anti-ICAM-1 Abs diminished this effect in a dose-dependant manner ($p<0.05$). HRV16 decreased ICAM-1 surface expression maximally by 25% in To and 30% in T1 ($p<0.05$). The percentage of apoptotic cells reached 2% in hour 96 after incubation with HRV16 ($p<0.05$). This slight increase of apoptotic cells was not accompanied by the increase of IL-33 mRNA expression.

Conclusions

HRV16 may induce the inflammatory response in human vascular endothelium suggesting the engagement of endothelium in rhinoviral asthma exacerbations.

This study was funded by National Science Center 2017/25/B/NZ5/01575.

The influence of nisin on the viability and proliferation of glioblastoma cells.

Olga Grzyb, Michalina Nowak, Ewa Nowacka, Aneta Włodarczyk, Karolina Janik

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Tutors: Piotr Rieske

Introduction

Glioblastoma (GB) is considered one of the most lethal tumors. Despite the use of aggressive treatment including surgical resection and chemo- or radiotherapy, tumors still frequently recur. Despite the use of the best available treatment, the survival rate of patients is estimated to approx. 15 months and usually does not exceed 5 years. Therefore, there is a need for new, more effective therapeutic approaches. As development of targeted anti-cancer molecules may be associated with various obstacles, including high intratumoral molecular heterogeneity, it tends to be very laborious and time-consuming. Therefore, screening of compounds of natural origin can be considered an interesting alternative. One example of such compound is nisin - fibrillar peptide, obtained during fermentation of the Lactococcus lactis bacteria. Nisin belongs to a group of bacteriocins, peptide toxins produced by bacteria to inhibit the growth of other bacteria. Importantly, this compound was identified as the safe substance by the Food and Drug Administration and is approved for use as food preservative. Recent published research carried out on a model of astrocytoma cell line (SW1088) strongly indicated that nisin may act as an antineoplastic molecule and impede proliferation or enhance apoptosis of cancer cells.

Aim of the study

Determination of the influence of nisin on proliferation and apoptosis on a model of selected GB cell lines.

Materials and methods

The impact of nisin on cells viability, apoptosis and proliferation rate was assessed using the following stable GB cell lines: T96, T98G, U87MG and control mouse fibroblasts: NIH/3T3. Applied analytical techniques included microscopic in vitro real-time observations, determination of IC50 value as well as caspase assay for the assessment of apoptosis following exposure to nisin.

Results

The IC50 values for NIH/3T3, T96, U87MG and T98G cell lines following 48h incubation with nisin were 23.04, 25.25, 7.02, 7.18 mg/mL, respectively. Intriguingly, T96 cell line seemed to be less sensitive to nisin than other tested cancer cell lines, with similar IC50 value to that obtained for NIH/3T3 control cells. Apoptotic cells in NIH/3T3 and U87MG cell lines were not detected, while observed in T96 cell line in both, control conditions and after exposure to nisin. The T98G cell line showed the highest sensitivity to nisin – the number of apoptotic cells was gradually increasing with incubation period.

Conclusions

No effect of nisin on NIH/3T3 and U87MG cells was detected, while in case of T98G and T96 cell lines a decrease in proliferation and increase in the percentage of apoptotic cells was observed. Differences in IC50 values were insufficient to determine the potential nisin therapeutic effect on selected cancer cell lines. Other approaches are needed to establish the antineoplastic properties of nisin on glioblastoma cells.

Role of different variants of adiponectin gene in rs6773957 on late complications of diabetes

Wioletta Szywacz, Małgorzata Poręba, Mikołaj Basza, Wojciech Bojanowicz, Maciej Budzik

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Tutors: Nikola Szweda

Introduction

Adiponectin is a proteinaceous cytokine that is synthesized and released mainly by mature adipocytes. The gene ADIPOQ, responsible for coding this cytokine, is located in the 3q27 chromosomal locus. Adiponectin has the ability to influence many crucial metabolic processes in human organism. It is proven that it shows an impact on cardiovascular system as well as an anti-arteriosclerotic and an anti-inflammatory activity. It increases sensitivity of tissues to the insulin, which enables the decrease of insulin resistance.

There is scientific evidence that the elevation of BMI causes the drop of adiponectin level in the peripheral serum and on the other hand the loss of weight contributes to the increase of this cytokine level.

Aim of the study

The aim of this study was to examine the dependence of different genotypes and various alleles occurence of adiponectin on improper body weight among the group of diabetics.

Material and methods

To reach this objective, DNA samples were collected and isolated from the study group consisted of 199 patients with diabetes mellitus, 108 man (51,7%) and 101 women (48,3%), at the age of 33 to 90 (mean age: 65) from Southern Poland. Subsequently, the Real Time PCR was conducted in order to amplify the selected DNA fragments. Afterwards the molecular research with the usage of fluorescent techniques was performed. Basing on the analysis of emission and phasing out of the signal, specific alleles of gene rs6773957 were determined. Conclusions concerning the occurrence of the examined dependence were based on proper statistical tests: Chi-Square Test and Cramér's V coefficient.

Results

The most frequent genotype in the research group are heterozygote AG- 101 patients (48,3%) and homozygote GG- 87 patients (41,6%).

The research group consists of 17 diabetics suffer from nephropathy, 56 with neuropathy, 67 with retinopathy and 75 with macroangiopathy.

Conclusions

The analysed population was in a Hardy-Weinberg Equilibrium (HWE). Additionally, genotype frequencies in all groups of patients with late complications of diabetes were not relevantly different from expected results if the population was in HWE.

There is no considerable dependence between different variants of the adiponectin gene and late complication of diabetes. However, it is worth distinguishing that most frequent genotype of the adiponectin gene was heterozygote AG in a group with no neuropathy while in a group with neuropathy slightly domination of homozygote GG was observed. It is worth to consider conducting larger research on a bigger study group of diabetic-neuropathy patients.

Analysis of concentration of the GDF-15 and VEGF-A in tumor and margin tissue

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Introduction

Colon cancer is cancer of the large intestine (colon), which is the final part of digestive tract. It is one of the most common types of cancer. Colon cancer is the second most common malignant tumor in Poland and one of the leading cause of cancer death. Progression of cancer is associated with angiogenesis. GDF-15 and VEGF-A are involved in angiogenesis which is an important phenomenon for cancer development. Growth differentiation factor 15 (GDF-15) is a member of the transforming growth factor cytokine family. GDF-15 is also known as macrophage-inhibitory cytokine 1 (MIC-1) and as placental TGF-ß. The function of GDF-15 is not completely verified, but many studies say that it has a role in the regulation of apoptosis and inflammatory pathways. In colon cancer, increasing GDF-15 expression is associated with the progression of colonic adenomas to invasive cancer and subsequent metastasis. Vascular endothelial growth factor (VEGF-A) inducts angiogenesis, vasculogenesis and endothelial cell growth, promotes cell migration and inhibits apoptosis.

Aim of the study

Analysis of concentration of the GDF-15 and VEGF-A in tumor and margin tissue. Assessment of correlation between the stage of cancer development and a concentration of examined proteins.

Materials and methods

The study contained 72 samples of tumor and margin tissue derived from patients with colorectal cancer. We analyzed 48 results for GDF-15 and 72 for VEGF-A to demarcate difference of concentration of analyzed substances in tumor and margin tissue. To determine the concentration of GDF-15 and VEGF-A in tested material we used commercially available ELISA test kit.

Results

Concentration of GDF-15 was significantly higher in the tumor than in the margin tissue ($p<p=0,000002$). In the case of VEGF-A concentration of this protein was relevantly higher in the margin tissue than in the tumor ($p=0,000000$). We didn't observe any correlation between the level of GDF-15 and VEGF-A in the tumor and the neoplasm stage in TNM classification.

Conclusions

Higher concentration of VEGF-A in margin tissue may correspond with increased angiogenesis, inflammation and metastatis development. VEGF-a transcription is activated by hypoxia, so on the border between tumor and margin tissue occurs increased requirement for oxygen. Lower level of VEGF-A in tumor may to indicate necrosis. Increased expression of GDF-15 is directly associated with amount of cancer cells. Most of cancer cells are localized in tumor. Therefore we may suppose that it is the cause of increased GDF-15 concentration in tumor. GDF-15 is a differentiation factor, so it's increased level in tumor may be a result of this accomplishment. Denotation why GDF-15 concentration is lower in a tissue margin requires further studies.

Spontaneous involution of infantile hemangiomas - a key to cancer regression? complex analysis of the influence of CD45 positive bone marrow derived cells, VEGF signaling and MMPs expression on the transition from proliferation to involution phase

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Introduction

Infantile hemangiomas (IH) are unique entities characterized by reversible proliferation transforming into involution phase. Proliferation phase is driven by uncontrolled and constitutive activation of vascular endothelial growth factor receptor 2 (VEGFR2) signaling. Normalization of vascular growth factor signaling by decreasing VEGFR2 expression and increasing VEGFR1 is believed to trigger the involution phase. Interestingly, the CD45 positive myeloid cells recruited into the tumor consist of several subpopulations, including cells expressing VEGFR1 and metalloproteinase-9 (MMP-9). MMP-9 expression initiates angiogenesis by increasing the bioavailability of VEGF. Here we present a pan analysis of CD45 positive cells in IH tissues and their relation to VEGF signaling and MMPs expression. Presented studies brought us closer to understanding of fascinating IH nature, as well as alight potential universal mechanisms of tumor regression.

Materials and methods

Formalin fixed and paraffin embedded 50 IH tissue sections were selected for our study. The slides about 3–4 micrometers of thickness were prepared from tumor tissue and stained with hematoxylin and eosin. The diagnosis of IH was confirmed by immunochistrochemistry Glut-1(+).The growth phases were assessed according to Mulliken and Enjolras' description. The mouse monoclonal LCA (CD45) antibody and the Envision system (DAKO, Glostrup, Denmark) were used for immunohistochemical studies. Expression of investigated protein was estimated with a computer image analysis system (Multi Scan Base v.18.03). positive reaction, observed as a brown coloration of the cell cytoplasm, and the results were shown as an index (%). The pan analysis of CD45 expression in relation to VEGF, VEGFR1, VEGFR2, MMP-2, and MMP-9 was performed.

Results

There were observed differences in CD45 positive cells indices in proliferation and involution phases. Obtained results in relation to VEGF signaling and MMP-9 expression may suggest, that the presence of myeloid cells in hemangioma tissue results in decreased activation of VEGFR2.The recruitment of CD45 positive cells appeared as a potential regulator for VEGF signaling and initiator of involution phase.

Conclusions

The assessment of CD45 positive cells may represent a suitable novel biomarker identifying tumor regression process with potential clinical impact in IH. This may also lead to new findings focusing on pathophysiology of neoplasms.

CARDIOLOGY

COORDINATORS
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Hypoplastic left heart syndrome with prenatally diagnosed foramen ovale restriction - diagnosis, menagement and outcome

Anna Jadczak, Jędrzej Chrzanowski

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Tutors: Maria Respondek-Liberska

Introduction

In up to 22% of patients with Hypoplastic Left Heart Syndrome (HLHS) restriction of the atrial septum develops at some point of gestation and often progresses until birth. These patients are at high risk of hemodynamic instability after birth, often requiring emergent atrial septostomy within hours after birth and despite advances in prenatal diagnosis and classification of congenital heart diseases as well as postnatal intervention and surgery methods, they continue to achieve high mortality rates.

Aim of the study

We carried out this study in order to determine survival predictors as well as possibly find out why restriction occurs in some HLHS patients and not others.

Material and methods

It was a retrospective analysis of prenatal history (with emphasis on parameters describing restriction - FO size and Vmax, pulmonary venous doppler – VTI(f/r)) and postnatal postnatal follow-up of 22 patients with HLHS and restriction from the database of The Department of Prenatal Cardiology, Polish Mother's Memorial Hospital (2008 - 2017). Restriction criteria of FO were: FO size of ≤ 4mm, and FO flow of >70cm/s with reverse pulmonary venous flow at the level of left atrium. Additionally, any signs of maternal or fetal infection were analyzed.

Results

There were 11 survivors and 11 non-survivors. 45% (5/11) of survivors had a prolonged ICU and total hospital stay. Only 2 newborns required an emergent balloon atrioseptostomy immediately after birth. The most significant difference between the two groups pertained to the average time of restriction diagnosis which was 33 hbd for survivors and 28 hbd for non-survivors (p=0.0416) and the duration of in-utero restriction (9 weeks vs 5 weeks, p=0.0213). Additionally, 20 out of 22 patients exhibited cardiac and extracardiac anomalies which were unusual for HLHS itself but could have been a sign of an ongoing infection of the fetus (hydrops testis, tricuspid regurgitation, pericardial effusion, cardiomegaly, placentitis, hyperechogenic bowel/intestines/hepar/amniotic fluid, ultrasonographic features suggesting hepatitis) or there was a record of treated/untreated maternal infection

Conclusions

1. Earlier development and longer presence of foramen ovale restriction in the setting of Hypoplastic Left Heart Syndrome is associated with higher short-term mortality regardless of the degree of restriction.
2. VTI(f/r) ratio might be a good emergent intervention predictor, but it does not correlate with foramen ovale size and Vmax, nor does it influence survival rates.
3. Infection of the fetus should be considered as a potential risk factor of restriction development in patients with HLHS and it was never underlined in earlier publications.

Repetitive use of levosimendan as a rescue therapy for advanced heart failure (AdHF)

Adrianna Cieślak, Kiet Nguyen, Kamila Gniady

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Introduction

In 2018 European Society of Cardiology has updated criteria for defining advanced heart failure (AdHF) as: severe and persistent symptoms presented with III or IV NYHA class, reduced left ventricle ejection fraction (LVEF) ≤30%, isolated RV failure or non-operable severe valve abnormalities, persistently high or increasing BNP or NT-proBNP values and record of severe diastolic dysfunction. It was assumed that acute events leading to one or more unplanned visits or hospitalizations within 12 months are assumed as characteristic in AdHF. Inotropes have found their application to correction of hemodynamic dysfunction, however they increase mortality in this group of patients. The calcium sensitizer and potassium channel-opener levosimendan has been proposed as a safer inodilator than traditional agents, to be used in AdHF.

Case report

A 75-y/o female was admitted to hospital with exacerbations of symptoms of heart failure with reduced ejection fraction (EF: 23%) not improving despite the optimal therapy for HFrEF with use of ARNI, in III/IV NYHA class, swelling of the lower limbs, orthopnoë and hypotension. It was the 4th hospitalization due to worsening heart failure within 12 months. Patient's history revealednoncompaction cardiomyopathy, LBBB, severe functional mitral and moderate tricuspid regurgitations, HT and IHD. The patient was after CRT implantation (2015) and TIA (2014). 24-hour Holter-ECG revealed a large multi-center ventricular arrhythmia (13,000 Exv/day) to 1,473 nsVT incidents consisting of up to 12 QRS with a frequency of 155/min and 88% of effective BiV stimulation. In blood biochemistry, the increased concentration of NT-proBNP (max. 16,988pg/ml) and hsTnT (max. 167ng/L) were noticed. X-ray indicated vascular and interstitial lung makings with circulatory failure features with overlapping lesions in the lower pulmonary fields, enlarged heart and widened vascular cavities. The patient was in II Forrester class and qualified for treatment with repetitive use of levosimendan (a total of 4 infusions during subsequent hospitalizations: 08/2018, 10/2018, 11/2018, 01/2019), which contributed to significant decrease in NT-proBNP (5,400pg/ml) and improvement during the 6-minute walk test, where the patient overcame a distance of 240m with a fatigue from 0 to 3, with no exertion according to RPE scale (at the beginning of the therapy the patient walked 190m). Patient's NYHA class was changed to III. 98% of effective BiV stimulation was recorded in 24-hour Holter-ECG. Echocardiogram showed an improvement in right ventricle's function (TAPSE: 13-> 17mm).

Conclusions

Levosimendan may represent a viable option for patients requiring treatment with inodilators, because of its haemodynamic effect which may last for >7 days after a 12-24h infusion thanks to active metabolites with a long half-life. Due to the serious prognosis of patients with AdHF, searching for modern forms of pharmacotherapy should be taken into consideration.

Predictors of an early diagnosis of total occlusion of infarct-related artery in non-ST-elevation myocardial infarction (NSTEMI)

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Introduction

Some patients with non-ST-elevation myocardial infarction have a total occlusion (TO) of infarct-related artery (IRA). Thereupon, acute coronary occlusion (ACO) may also present as non-ST-elevation myocardial infarction (NSTEMI) and thus veil the real threat. The prevalence and impact of TO of IRA on outcomes in patients with NSTEMI remain unclear.

Aim of the study

The aim of this study was to analyse the incidence of total occlusion of IRA and to assess the predictors of total occlusion of IRA in patients with NSTEMI.

Material and Methods

The study was conducted as a retrospective cross-sectional analysis of 399 consecutive patients with NSTEMI (M=293, mean age 70.3 ± 10.1) hospitalised and treated by primary percutaneous coronary intervention (PCI) in the I Chair and Clinic of Cardiology, Medical University of Silesia in Katowice in 2017. The study population was categorized into patients with TO of IRA and with hemodynamically significant culprit coronary lesion (non-TO) on coronary angiography. Demographic and clinical data, including laboratory test results and electrocardiographic parameters, were acquired by means of meticulous review of discharge summaries and electronic health records. TO of IRA and in-hospital mortality were the outcomes.

Results

TO was found in 138 (34.6%) patients with NSTEMI. Patients with TO had a greater incidence of diabetes mellitus (p=0.003) and atrial fibrillation (p=0.02). Coexistence of serum triglicerides level (p=0.001), glucose level (p=0.0005) and baseline troponin level (p=0.004) corresponded with the highest incidence of TO of IRA. The left circumflex artery (LCx) was the major IRA in the TO group (39.1%), whereas the left anterior descending artery (LAD) was more commonly the IRA in the non-TO group (48.5%). Multivariate analysis revealed that LCx as the culprit lesion (OR 0.53 [0.41-0.68], p<0.0001) was an independent predictor of IRA flow in TIMI scale. In-hospital mortality was higher in the TO group than non-TO group (2.8% vs. 1.1%, p=0.007).

Conclusions

The identification of NSTEMI patients with total occlusion of infarct-related artery is challenging. In the population of patients with NSTEMI, TO of IRA represents a considerably frequent phenomenon and corresponds with established clinical markers of impaired outcome. These patients may require different clinical approach than typical NSTEMI patients. Therefore, the utmost caution should be paid to prevent delay of coronary angiography in NSTEMI patients with higher baseline troponin levels and metabolic disturbances who represent the increased risk of acute coronary occlusion.

Systemic lupus erythematosus - its impact on selected cardiovascular risk factors and correlation of these factors with duration of illness

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Introduction

Systemic lupus erythematosus (SLE) is a rare autoimmune disease. It leads to an increased production of proinflammatory molecules that accelerates atherogenesis and could cause an epithelium dysfunction. The heart is one of the most frequently attacked organs, its functioning and morphology could be assessed during echocardiography exam. Markers like body mass index (BMI) and a carotid intima-media complex thickness (IMTc) are recognized as a cardiovascular risk factors, whereas left ventricular ejection fraction (LVEF) is an independent marker of heart failure.

Aim of the study

The aim of the study was to assess cardiovascular risk factors such as BMI and IMTc and a heart failure marker – LVEF among patients with SLE, and a correlation of these factors with duration of the disease.

Materials and methods

The researched group consisted of patients with systemic lupus erythematosus, being under control of the outpatient clinic of cardiology. This group included 38 patients among whom 34 were women (56.17 ± 11.05 years) and 4 were men (65.5 ± 9.2 years). The control group consisted of 19 healthy women (53.31 ± 11.94 years) and 2 healthy man (38.5 ± 7.5 years). Measurements were taken in the same conditions by trained medical staff.

Results

Excessive body weight (BMI > 25 kg/m2) was more frequent in SLE group, but it wasn't statistically significant (55.26% vs. 52.38%, p=0.6159). LVEF values were lower in the researched group and this factor showed statistical significance (53.92% ± 6.46 vs. 58.67% ± 4.69, p=0.0044). Thickness of the IMTc was higher and statistically important among patients with SLE, both in left (1.22mm ± 0.27mm vs. 0.7mm ± 0.21mm, p=0.0001) and right common carotid artery (1.16mm ± 0.26mm vs. 0.59mm ± 0.15mm, p=0.0001), compared to the controls.

Conclusions

Patients with systemic lupus erythematosus are at greater risk of developing a cardiovascular diseases as the illness progresses. Those patients also have lower LVEF values, which can contribute to a heart failure in the future. The result showed no significant correlation of the above mentioned factors with the duration time of the disease, but there is a need for larger studies focused on this topic to confirm that statement.

Unexpected chronic thromboembolic pulmonary hypertension in a patient referred as acute pulmonary embolism only – the case report.

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Background

Pulmonary embolism occurs in approx. 84/100000 people each year in Europe which may result in chronic thromboembolic pulmonary hypertension (CTEPH). Pathophysiology of CTEPH is based on the occlusion of pulmonary arteries by preserved thromboembolic material, resulting in high pulmonary artery pressure and progressive right ventricular failure. Five in one million subjects develop CTEPH every year, however approx. only one of them is accurately diagnosed and receives appropriate treatment. It is usually due to nonspecific symptoms that might mimic coronary artery disease. Proper diagnose is extremely vital as CTEPH is associated with high mortality up to 90% in a 5 year observation in patients with mean pulmonary artery pressure above 50 mmHg.

Case report

We present a case of a 71-year-old man with multiple cardiovascular comorbidities including coronary artery disease, conduction and rhythm disturbances and also with history of venous thromboembolism in the past. The patient was referred to our department due to a diagnosis of acute pulmonary embolism with intermediate-high early mortality risk. He was in medium condition and presented typical clinical symptoms with right ventricle failure. However, performed echocardiography suggested rather chronic than acute condition, including right ventricle artery pressure 90 mmHg. CT scan results revealed large and old thromboembolic material in proximal segments of pulmonary arteries while possible recent embolism. Despite many past hospitalizations due to cardiovascular events, progressive dyspnoea and right ventricle failure, diagnosis of CTEPH was not raised before. The patient received low molecular heparin treatment in therapeutic dose as previous antagonist vitamin K therapy was evaluated as ineffective. After an improvement of clinical status he was discharged. Further diagnostic procedures including right heart catheterization were arranged with intention of future interventional treatment.

Conclusions

Symptoms of CTEPH may be misleading and are often neglected. Despite unfavourable prognosis, treatment may significantly improve patients' survival rate and quality of life. Progressive dyspnoea or heart failure after pulmonary embolism must be checked with echocardiographic assessment and sometimes with CT, scintigraphy and right heart catheterization too. New therapies including balloon pulmonary angioplasty and riociguat are now extensively implemented in treatment of CTEPH.

Routinely measured hematological parameters and prediction of recurrent cardiovascular events in patients with ST-Segment Elevation Myocardial Infarction

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Introduction

Survivors of myocardial infarction are at higher risk for subsequent cardiovascular events. Recent studies have shown a relationship between some blood count-derived inflammatory and biochemical markers and a cardiovascular event.

Aim of the study

To investigate the risk of short-term and long-term recurrent cardiovascular event (RCE) and its hematological predictors in patients with ST-Elevation Myocardial Infarction (STEMI).

Materials and methods

The study was based on retrospective analysis of 2465 medical histories of STEMI-diagnosed patients hospitalized to Vilnius University Santaros Clinics between 2005 and 2010. We calculated blood-count ratios including platelet-lymphocyte (PLR), lymphocyte-monocyte (LMR), platelet-monocyte (PMR) and neutrophil-monocyte (NMR); investigated associations between RCE and 24 hematological parameters and then assessed whether these values were linked to an increased risk of RCE. Routinely performed test values, taken at first hospitalization day, were compared. Cut-off values, sensitivity, and specificity were identified using Area Under Curve (AUC) and Receiver Operating Characteristic (ROC) curves. Cox regression models were used to investigate which variables predicted a recurrent event using the stepwise backward procedure. The occurence of a RCE within 12 months was considered short-term and within more than one year - long-term.

Results

A total of 1821 patients had one cardiovascular event, while 644 had a RCE. Pearson's chi-squared test showed that gender distribution between groups was not statistically significant [p=0,965]. Mean age of patients who had a RCE was significantly lower compared to patients with one event [p=0,007]. Between patients with one and recurrent cardiovascular events there were statistically significant differences in total cholesterol, absolute lymphocyte and eosinophil counts, lymphocyte relative count, red blood cells, hemoglobin, mean corpuscular volume and mean platelet volume. Sensitivity, specificity, positive and negative predictive value did not exceed 80%. During the first year after hospitalization 419 patients had a RCE while 225 had a RCE later on. Comparing short-term and long-term RCE revealed a statistically significant differences in triglycerides, HDL cholesterol, absolute lymphocyte count, hemoglobin, mean corpuscular hemoglobin, mean corpuscular hemoglobin concentration and glucose concentration. Analysis showed that higher glucose concentration predicts a higher risk of short-term RCE.

Conclusions

28 hematological factors were identified, and a model was developed to predict the risk of RCE after STEMI. The results of this study suggest that predictive values of RCE in STEMI patients are different between short-term and long-term periods.

Implantable cardioverter-defibrillator with cardiac resynchronisation therapy (ICD-CRT) in Duchenne muscular dystrophy-related heart failure

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Duchenne muscular dystrophy (DMD) is a progressive, myogenic disease originating in mutations of dystrophin gene located on X chromosome. Absence of dystrophin protein leads to skeletal and cardiac muscle dysfunction resulting in generalised weakness, respiratory distress, as well as increased risk of dilated cardiomyopathy (DCM) and late-onset arrhythmias. Despite improvement of pharmacological treatment, a progression of unfavourable cardiac remodelling occurs, with heart failure (HF) exacerbation and arrhythmias as the substantial causes of premature death among DMD patients. According to European Society of Cardiology Guidelines on cardiac pacing and cardiac resynchronisation therapy, cardioverter-defibrillator devices with cardiac resynchronization therapy (ICD-CRT) is recommended for symptomatic patients with reduced ejection fraction despite optimal pharmacological treatment to improve prognosis of patients with HF with reduced EF. However, studies evaluating cardiac resynchronization therapy–defibrillator (CRT-D) in DMD population are insufficient.

The following report presents the case of an 18-year-old DMD patient admitted to hospital due to worsening HF with NYHA class IV symptoms. Transthoracic echocardiography revealed severe global left ventricular (LV) hypokinesis (LV ejection fraction (LVEF): 12.8%) with significant LV enlargement. In magnetic resonance imaging extensive LV fibrosis was observed. ECG presented right bundle branch block with QRS >150 ms and pathological Q waves in I, aVL and V4-V6 leads. The results of laboratory tests showed elevated levels of NT-proBNP (3420 pg/ml) and CK-MB (191 U/I). Treatment of HF was implemented (torsemide, perindopril, carvedilol, eplerenone, methyldigoxin) and after few days patient's clinical condition improved. The patient was treated with enoxaparin to prevent thromboembolic events due to disability and sedentary lifestyle. Six weeks after discharge CRT-D was implanted. Biventricular pacing begun 1 week after implantation of the CRT-D.

In long-term observation after CRT-D implantation patient was free of HF hospitalization. This solution proved to be beneficial in DMD patient in improving cardiac systolic function and protect patient from life-threatening arrhythmias. Using telemonitoring system of implanted device, the data were transmitted to physician for an immediate interpretation and response. The interventions included interrupting ventricular tachycardia (VT) in the ventricle fibrillation (VF) zone with frequency of 200 bmp. Paroxysmal atrial fibrillation episodes were observed (with one duration of over 30 second). The patient was hospitalized for CRT-D device elective replacement due to end of battery life. After 5 years the patient died due to cachexia and respiratory distress, however, the registration of potentially fatal arrhythmias and successful interventions extended the longevity to over 5 years and improved the quality of patient's life.

How can we assess haemodynamic profile non-invasively? Evaluation of alterations in the cardiovascular system using examination with CNAP device in patients with cirrhosis

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Introduction

Cirrhotic cardiomyopathy (CCM) is a condition concerning heart muscle dysfunction, occurring among patients with cirrhosis. Cirrhosis leads to the development of a hyperdynamic syndrome, which is manifested by high cardiac output, increased heart rate and effective arterial blood volume, accompanied by reduced total systemic vascular resistance. Continuous Noninvasive Arterial Pressure (CNAP) device allows to assess patient's haemodynamic profile in a completely non-invasive way. The results acquired from CNAP are highly accurate and precise compared to the invasive methods such as thermodilution and pulse contour cardiac output.

Aim of the study

The aim of the study is to screen patients with cirrhosis, which may lead to earlier diagnosing CCM and hyperdynamic syndrome with their consequences.

Material and Methods

The study included 70 patients over 18 years old, with cirrhosis, caused by alcohol ([ALD], 22), autoimmune (26), viral (9) other reasons (13), qualified for liver transplantation. 39 of them were male. Median age was 47. We disqualified patients with a history of cardiovascular diseases. Each patient had a 6-minute walking test (6MWT) done and a hemodynamic monitoring using CNAP device was also performed.

Results

There were no statistical difference in distance median value between aetiological groups (407 m in ALD patients group, 412,5 m in autoimmune patients group, 384 m in viral patients group and 400 m for other aetiology patients group; p=NS). The distance was not related to severity of the liver disease based on Child-Pugh score, but was correlated to MELD score (r=0,26; p=0,038).

Preliminary results show statistically significant correlations between distance in 6MWT and eGFR (r=0,78; p=0,0082), Systemic Vascular Resistance (SVR) at the end of 6MWT (r=0,197; p=0,0011), Diastolic Blood Pressure (DBP) at the end of 6MWT (r=0,45; p=0,014) and NT-proBNP (r=0,28; p=0,0008) level, patient's weight (r=0,286; p=0,044) and height (r=0,37; p=0,008).

Conclusions

Preliminary results show that we can detect alterations in patients' haemodynamic parameters, that may be important in predicting the subclinical cirrhotic cardiomyopathy, expected heart failure and – consequently – patients' survival.

AHI in patients after acute ischemic stroke based on ECG Holter monitoring

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Obstructive sleep apnea (OSA) is one of breathing disorders during sleep regarded as cardiovascular risk factor associated withincreased mortality. The Apnea–Hypopnea Index (AHI) is a measure of the number of apnea and hypopnea events per hour of sleep, may be calculated form Holter recordings as a practical, non-invasive tool for screening for sleep disordered breathing (SDB). OSA is one of the important, modifiable risk factors of acute ischemic stroke (AIS) in AHI>15 patients this risk is higher. The question is if an episode of AIS may affect AHI and cause higher values of this parameter? The aim of our study was to analyze AHI obtained from Holter ECG in patients with cryptogenic AIS and in healthy subjects.

Methods

The study group consisted of 92 patients with the first symptomatic cryptogenic AIS (age: 60±14; 51% males). Each patient had 7-days Holter recording 8-9 days after stroke episode. Patients were divided into two groups: TACI (anterior ischemia) and non-TACI (middle and posterior circulation). Control group contained 50 healthy people (age: 55±9, 66% males).

Results

AHI is significantly increased in AIS group in comparison to control group (p=0.001). AHI in non-TACI was higher than both TACI and controls: 14±5,3; 10,5±4,8; 8,5±8,4 respectively (p=0.0004 for non-TACI vs control). 30% patients with AIS (23% in TACI and 35% in non-TACI) has AHI>15 in comparison to 16% from control group.

Conclusions

Patients after ischemic stroke episode are more likely to have higher AHI, especially with non-TACI (middle-posterior ischemia) location, what may be related to the damage of respiratory and autonomic nervous system centers.

Does telemonitoring cause more hospitalization?- retrospective study

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Introduction

Telemedicine e.g. tele-ECG starts to play a greater role in monitoring patients. It gives an possibility of faster control and consultation of cardiology patients, what results in better clinical outcomes. However, there is lack of data comparing efficiency of telemonitoring in patients after percutaneous coronary procedures (PCI). There is also a question, does tele-ECG cause more hospitalization? And does it generates higher expenses?

Aim of the study

The aim of this study was to evaluate the number of cardiac incidences between patients with or without telemonitoring support and number of hospitalization in those two groups of patients.

Material and Methods

This was a multicentre, retrospective registry of 400 consecutive patients, who undergone PCI from 10.2016 to 06.2018. 202 of them were provided with tele-ECG device and telephone consultations, while 198 patients did not agree for telemonitoring. Patients with both acute coronary syndrome and stable angina were included. The average time of telemonitoring was 312 days.

Results

At baseline, patients in monitored group were more often presented with myocardial infarction (50% vs. 35 %; p=0.01), especially STEMI (18% vs. 9%; p<0,01). After one year, the incidence of hospitalization due to myocardial infarction (3,8 vs. 4,7%; p=0,16) and all cause death were numerically lower in monitored group, however the difference was not statistically significant. The rate of hospitalizations with heart failure exacerbation were significantly lower in monitored group (2% vs. 4,10%; p=0,04). The incidence of arrhythmias and rePCI/CABG were significantly more common in study group (7,4% vs. 2%; p<0,05 and 9% vs. 5%; p=0,04 respectively).

Conclusions

Our study suggests, that exacerbation of heart disease in patients supported with telemonitoring were diagnosed earlier. It might result in lower incidence of more serious medical conditions. Telemonitoring has increased the detection of other cardiac diseases, what gives greater opportunities for better treatment of these patients. Higher number of detecting arrhythmias or states demanding rePCI/CABG causes more short-time hospitalization, but prevents longer and more expensive hospitalization due to more serious medical conditions.

The evaluation of the clinical outcomes after macitentan treatment in patients with pulmonary hypertension

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Introduction

Pulmonary hypertension (PH) is a life-threatening condition of increased blood pressure within the pulmonary arteries that get worse over time. According to the WHO classification, there are 5 groups of PH. The first group is pulmonary arterial hypertension (PAH), which is a complexand often misunderstood disease but specific therapy can change the survival and the quality of life of patients with PAH.

Macitentan is a novel endothelin receptor antagonist, active on both ET_A and ET_B receptors and characterized by high affinity and sustained occupancy of the ET_A receptors in human pulmonary arterial smooth muscle cells.

Aim of study

The evaluation of 2-year results of a therapy with macitentan in patients (pts) with pulmonary arterial hypertension (PAH), (idiopathic, iPAH; with connective tissue disease, CTD-PAH and with congenital heart disease, CHD-PAH).

Material and methods

34 pts with PAH were enrolled to the study (22 women), the average age was 64,7 ± 13,7, including 6 pts (18%) with CHD-PAH, 17 pts (50%) with iPAH and 11 pts (32%) with CTD-PAH.

The clinical data such as: age, sex, WHO functional class (WHO FC), NT-proBNP, haemoglobin serum level (Hgb), right atrium area (RAA), systolic pulmonary artery pressure in echo (SPAP), tricuspid annular plane systoli excursion (TAPSE), tricuspid regurgitation (TR), and 6-minute walk test distance (6MWT) were collected retrospectively.

The data were collected after 0.5, 1, 1.5, and 2 years.

Results

Statistically significant differences were found for 5 of the evaluated factors: SPAP, TAPSE, WHO FC, Hgb, and 6MWT.

SPAP(0) = 67mmHg vs SPAP(0.5) = 62mmHg (p = 0.017)

SPAP(0) = 66mmHg vs SPAP(1) = 62.50mmHg (p = 0.04)

TAPSE(0) = 20mm vs TAPSE(1)=21mm (p = 0.035)

There was a significant increase in walking distance in a 6-month follow-up (Δ51 m).

A statistically significant improvement of WHO FC was observed after 6 months (p = 0.0001) and 1 year (p = 0.0214).

The haemoglobine level decreased at every point of the trial: average Hb (0) = 14.35 vs 13.5 (0.5, p = 0.0003), 13.95 (1, p = 0.022), 14.05 (1.5, p = 0,020) and 13.7 (2, p = 0.004).

There was no statistically significant differences in TR, NT-proBNP, and RAA at any point of trial.

Conclusions

The presented data indicate a positive effect of macitentan on patients with PAH, which manifests itself with the significant improvement in 6MWT and WHO FC within 6 and 12 months. Also, macitentan have a meaning influence of lowering of SPAP and hemoglobin serum level ina 1-year follow-up.

Monoclonal antibodies - a new therapeutic chance for patients with familial hypercholesterolemia and liver diseases

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The familial hypercholesterolemia(FH) leads to an increased risk of premature cardiovascular disease. It is treated either with statins or statins/ezetimibe combination. However, patients with liver impairment are unable to tolerate pharmacologic doses of the anti-cholesterol drugs, as most of them have hepatic metabolism. One of the effective treatments is LDL apheresis, but it cannot become a routine treatment for everybody (due to high costs and time-consuming blood apheresis procedure). Lately introduced PCSK9 inhibitor (PCSK9i) is the hope for effective FH treatment. It is a monoclonal antibody, which acts against the **proprotein convertase subtilisin/kexin type 9** enzyme. PCSK9i allows more LDL receptors to stay on the hepatocyte surface and increases the metabolism of cholesterol. The metabolism of PCSK9i is based on the endogenous IgG degradation pathway so it seems to be safe for patients with hepatic impairment, but neither there is research, nor there were guidelines for PCSK9i use in hepatic disabled patients published by European Heart Society in 2017.

A 65 years-old woman needed a cardiac consultation due to liver transplantation because of primary biliary cirrhosis. Besides this disease, she had hypertension, steroid-induced diabetes, chronic ischemic heart disease, and positive cardiovascular disease family history. She underwent coronary angioplasty of two vessels. Her blood tests showed total cholesterol(TC) level of 748 mg/dL and LDL-C 680 mg/dL. She was diagnosed with FH (Dutch score: 17). Standard treatment was impossible in this patient as she was statin intolerant thus she was given evolocumab (PCSK9 inhibitor). Six months later, control blood tests indicated TC 259 mg/dL and LDL-C 204 mg/dL, without liver impairment progression. The LDL-C reduction was more than 60%, which is consistent with the guidelines regarding use of statins and ezetimibe in reduction of absolute cardiovascular risk.

As the rate of diagnoses of co-existing liver and cardiovascular disorders increases, finding and implementing a therapy which can treat both is an important issue. The PCSK-9 inhibitor, used for PBC patient was a good decision, although no guidelines for such a procedure.
Thus, the safety and efficacy of such therapy suggest a need of further research in the field of hepatic and congenital lipid metabolism disorders.

Comparing of the response to therapy with P2Y12 antagonist

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Introduction

Dual antiplatelet therapy consisting of aspirin and a P2Y12 antagonist is a cornerstone of treatment in patients with acute myocardial infarction (AMI) undergoing percutaneous coronary intervention (PCI). One-third of patients with AMI do not respond to antiplatelet therapy with a P2Y12 antagonist clopidogrel, which is associated with worse prognosis. The P2Y12 antagonist ticagrelor is recommended over clopidogrel in patients with AMI due to more potent and predictable antiplatelet effect of ticagrelor. Hovewer, the proportion of patients not responding to ticagrelor is not known.

Aim of the study

This study compares the response to antiplatelet therapy in patients treated with ticagrelor and clopidogrel.

Materials and Methods

48 consecutive patients admitted to 1st Chair and Department of Cardiology, Medical University of Warsaw due to the first AMI who received a loading dose of clopidogrel (600 mg) prior to PCI were enrolled in the study. Patients were randomized in 1:1 ratio either to replace clopidogrel with ticagrelor (study group) or to continue the treatment with clopidogrel (control group). Blood was collected three time (i) 24 hours after administration of clopidogrel, (ii) 48 hours following randomisation, and (iii) 6 months following the index hospitalization. Response to P2Y12 antagonists was analysed by impedance aggregometry using adenosine diphosphate (ADP). Patients who exhibited more than 46 aggregation units (AU) in response to ADP were considered non-responsive to P2Y12 antagonists, as recommended by European Platelet Academy.

Results

There were no statistical differences between the two study groups regarding demographic and clinical characteristics (63 ± 10 years, 75% male in the study group; 65 ± 10 years, 71% male in the control group). At baseline, platelet reactivity was 30 ± 21 AU in response to ADP, and 13 out of 48 patients (27%) did not respond to clopidogrel. In patients randomised to switch to ticagrelor, platelet reactivity was lower than in patients who continued treatment with clopidogrel, both during the index hospitalisation (18 ± 14 AU vs 39 ± 20 AU; p=0.001) and after 5.7±1.4 months follow-up (28 ± 14 AU vs 40 ± 20; p=0.01). Following randomisation, 2 out of 24 patients (8%) did not respond to ticagrelor and 6 out of 24 patients (25%) did not respond clopidogrel. At follow-up, the same 2 out of 24 patients (8%) did not respond to ticagrelor, and 7 out of 24 patients (29%) did not respond clopidogrel.

Conclusion

Ticagrelor inhibits activation of platelets more efficiently than clopidogrel. Nevertheless, about 8% of patients do not respond to ticagrelor, as measured by impedance aggregometry, and this non-responsiveness is consistent over 6 months. Whether non-responsiveness to ticagrelor is associated with worse prognosis, remains to be determined.

The usefulness of Pocket Echocardiography in hands of a briefly trained student at the department of infectious disease

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Introduction

The clinical utility of bedside echocardiography performed with the use of pocket-size imaging device (PSID) by cardiologists in patients with cardiovascular diseases has been already demonstrated.

Purpose

The aim of this study was to assess if non-cardiologist, after brief training in echocardiography, is able to provide clinically useful information by performing screening with the use of PSID in patients admitted to the department of infectious diseases.

Methods

The study group comprised 44 patients (29 men, 15 women; mean age 53±16 years) admitted to the infectious disease department, who presented with a fever (>38^{o}C). Each patient underwent bedside echocardiographic examination with the use of PSID by a final-year medical student. All recorded images were then reviewed by an experienced cardiologist blinded to student's conclusions. In case of suspicion of an emergent cardiac pathology or non-diagnostic images, the patient was referred for a standard echocardiographic examination.

Results

In 3 patients the quality of acquired images was insufficient for reliable analysis.

Within the remaining group, the medical student identified 47 cardiac abnormalities in 23 (52%) patients, including 28 at least mild valvular regurgitations, 6 cases of hypertrophy, 7 cases of wall motion abnormalities, 1 case of mass in right ventricle and 5 cases of additional valvular structures suggesting possible infective endocarditis (IE).

The cardiologist reviewing the images confirmed all of the above abnormalities except for: 3 cases of wall motion abnormalities, 1 case of additional valvular mass and 1 case of right ventricular mass.

5 patients underwent subsequent urgent standard transthoracic echocardiographic examinations (sTTE) by a cardiologist experienced in echocardiography. Additionally, 4 patients underwent transesophageal examination. These examinations confirmed 3 cases of IE and did not confirm IE in 1 case.

Conclusions

The PSID allows significant enhancement of a physical examination performed by non-cardiologist at the infectious disease department, providing clinically relevant information.

CARDIOSURGERY

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Percutaneous coronary intervention followed by left ventricular rupture

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Introduction

Although ischaemic heart disease is still one of the most frequent causes of death, the incidence of ST elevation myocardial infarction (STEMI) decreases. For instance, studies in the United States show that between 1999 and 2008 number of STEMI patients declined from 133 to 50/100 000/year. Moreover, it is – among other reasons – due to reperfusion therapy and modern anticoagulants that mortality rate improves. Percutaneous coronary intervention (PCI) is still standard procedure in myocardial infarction treatment, although it does not always lead to the assured effect.

Case study

A 69-years old female patient presented with HA and DM, suffering from a several day recurring retrosternal chest pain and aggravating dysponea was admitted to the Cardiology Department. Electrocardiogram showed sinus rhythm with heart rate 120 per minute and inferior wall necrosis features – ST-segment elevation in II, III, aVF, V5 and V6. The markers of myocardial necrosis were elevated. Acute STEMI was diagnosed and coronary angiography was performed. As the procedure revealed occlusion of margial branch and long stenosis of right coronary artery, drug eluting stent was implanted to occluded vessel. Two hours later, echocardiography revealed rupture of the left ventricle wall. The patient was immediately referred to the Cardiac Surgery Department. She was taken to the operation theatre in a fast mode, where a huge lateral wall rupture was exposed. In order to reconstruct the myocardial wall, the surgeons used Dacron patch. Besides, coronary artery by-pass graft between aorta and right coronary artery was implanted. Despite applying the multidirectional treatment, the patient's condition after the procedure was severe and exacerbating, and a few hours later she passed away.

Conclusions

In spite of a great experience in performing percutaneous coronary intervention, STEMI still poses a serious challenge for clinicians. Ventricular rupture is a rare complication of myocardial infarction but it may also result from PCI, especially when faced with an old infarction. Maybe if echocardiography had been performed before the intervention, other procedures would have been applied and the patient's life would have been saved.

In-hospital safety and efficacy of left main coronary artery percutaneous treatment in patients disqualified from bypass surgery

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Introduction

Left main coronary artery (LM) disease is a life-threatening condition, so the invasive treatment is crucial for the survival of the patients. In the past, LM stenosis was reserved only for cardiac surgery. Current ESC guidelines still favors coronary artery bypass graft (CABG) as the only one method for LM disease with diffuse coronary artery disease (CAD). However, in less advanced CAD percutaneous coronary intervention (PCI) of LM disease is a method of choice. Moreover in some patients disqualified from the CABG, LM PCI should be considered.

Aim of the study

Evaluation of in-hospital safety and efficacy of LM PCI in patients disqualified from CABG surgery.

Material and methods:

Consecutive 346 patients (mean age: 68,8±9,8) in whom PCI of LM was performed (between January 2015 and September 2017) were included in the study. The study group consisted of 296 patients in whom PCI was offered as an alternative to CABG (Group 1) and 50 patients who were disqualified from CABG by heart team (Group 2). The clinical and angiographic data of these patients including in-hospital outcomes has been analyzed.

Results

The whole LM PCI group consisted of 73,9% men and 26,1% women. There were no differences in sex and age between both study groups. Comorbidities including previous myocardial infarction, arterial hypertension, diabetes mellitus, renal failure and atrial fibrillation did not differ significantly between two study groups. Angiographically calculated SYNTAX Score (28,7±9,8 vs 23,1±10,3; $p<0,01$) and Euroscore II (2,64 vs 2,21; $p=0,038$) were significantly higher and ejection fraction was lower (45% vs 51%; $p<0,01$) in Group 2. That group of patients more often required complex stenting techniques (34,9% vs 19,12%; $p=0,019$). Procedure success rate was very high (99%) and did not differ between two study groups. All periprocedural complications (10% vs 7,12%; $p=0,67$) and the frequency of myocardial infarction (8% vs 4,07%; $p=0,39$) did not differ among the groups. No strokes and deaths occurred in Group 2, however two deaths were reported in Group 1.

Conclusions

LM PCI in patients disqualified from bypass surgery is effective procedure with low in-hospital complication rate. This life saving treatment, remains the only option for such patients. Further studies with long-term follow-up are necessary to confirm benefits of this treatment strategy.

Myocardial bridges in coronary angiography – relation to coronary artery disease and referral urgency

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Introduction

In normal conditions coronary blood flow occurs in 85% during diastole and only in 15% during systole. Myocardial bridges (MB) restrict coronary flow during systole and that is primary why are traditionally considered a benign condition that 'is usually an incidental finding on angiography or autopsy'. However, MB may be presented with symptoms of stable coronary artery disease (CAD) or acute coronary syndrome (ACS).

Aim of the study

To evaluate the association of myocardial bridges with arteriosclerotic coronary artery disease and CAG referral urgency in the population of Polish patients undergoing CAG.

Material and methods:

We retrospectively investigated anonymized medical records of all consecutive hospital admissions to the Jagiellonian University Department of Cardiac and Vascular Disease in two 2-year periods: at the beginning and the end of the decade. Of all, patients who underwent coronary were selected. The presence MB was recorded. According to the presence of angiographically depicted lesions in a major epicardial vessel study group was divided into 2 groups due to 'significant' CAD presence (lesion(s) with ≥ 50% diameter stenosis).

All referrals for clinically-indicated invasive CAD diagnosis were once again divided into 2 groups according to priority of the preformed CAG evaluation; 'Urgent' (suspected ACS: including ST-elevation, non-ST-elevation acute myocardial infarction, unstable angina) and 'Non-urgent' (suspected stable coronary artery disease).

Hence, study cohort was divided into 4 groups.

1. 'Significant' CAD -, 'Urgent' referral
2. 'Significant' CAD -, 'Non-urgent' referral
3. 'Significant' CAD +, 'Urgent' referral
4. 'Significant' CAD +, 'Non-urgent' referral

Results

We reviewed 9718 hospitalizations, of them 3,031 patients (39.36% females) were included into the study group. The median age of the study cohort was 65 years old. Groups consisted of 208, 1120, 811 and 892 patients, respectively. The overall prevalence of MB was 2.44%. MB were distributed evenly between males and females (p=.74071). Median age of patients without MB was 66 and with MB 62 years old, however the difference was not significant (p=.0779).

Among designated groups, MB were significantly more prevalent in Group 1 than in any other (p=.0341, p=.0000, p=.0000, respectively). Moreover, MB were significantly more common in Group 2 than 3 or 4 (p=.0003, p=.0018). However, MB were evenly distributed between the group of patients with 'significant' CAD (3&4, p=.6446).

Conclusions

Myocardial bridges are more prevalent in patients without than with significant CAD undergoing CAG. In the group of patients without significant CAD, myocardial bridges occur more frequently in patients referred for CAG due to suspected acute coronary syndrome rather than in patients with suspected stable coronary artery disease.

ICD lifetime with and without resynchronization function in comparison to the data given by the manufacturer

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Introduction

As technology advances, subcutaneous devices to maintain the homeostasis of certain organs are being used more and more frequently. One of such devices is cardioverter – defibrillator (ICD). In Poland, they are used both in primary and secondary prevention, to prevent sudden death from cardiological reasons.

Aim of the study

One of the problems of ICD is the necessity for frequent replacements due to battery depletion. The type of implanted model, amplitude and amount of electrical discharges carried out by the machine during its lifetime affect the life expectancy of ICD. The subject of this article is to compare the viability of the ICD during the patient's everyday life with the device manuals provided by the manufacturer.

Material and methods:

The analysis was carried out at the Górnośląskie Centrum Medyczne in Katowice on 50 patients (including 10 women and 40 men), who underwent ICD replacement in 2017-2018, in the 1st Chair and Clinic of Cardiology. The models on the basis of which the tests were carried out were the Maximo VR 7232 and the Maximo DR 7278 from Medtronic.

Results

The obtained results showed that the lifetime of ICD in practice is significantly different from the data given by the manufacturer. 31 patients (62%) had to reimplant ICD before lifetime prediction given in the manual.

Conclusions

The presented results may suggest suspicion of additional factors affecting the ICD battery status. Finding these variables and their modification would certainly allow for less frequent device exchanges in the future, which would translate into lower costs and less frequent hospitalization of patients.

Surgical management of Carotid Body Paragangliomas.

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Introduction

Carotid Body Tumours (CBT) are a group of relatively uncommon, slow-growing, usually benign tumours. They are in the majority asymptomatic, although a presence of lump in the neck, pain, hoarseness, dysphagia, headache, syncope may also occur. Functional chemodectomas are exceptional. Surgical resection is a treatment of choice.

Aim of the study

The aim of this study was to identify most common symptoms and complications after surgery in patients with CBTs.

Material and methods:

We conducted a retrospective study under which we identified 17 patients with CBTs who were qualified to surgery at John Paul II Hospital in Krakow, Poland in the last 20 years. Information was collected through individual medical documents and analysed in terms of the presence of certain symptoms, preoperative imaging, course of surgery, histopathology, short and long-term outcome.

Results

Because of the rarity of the disease, the study group is rather small. There were 10 (59%) females and 7 (41%) men, 12 (70%) of patients presented symptoms during qualification, 1 (5,8%) had a family history of the disease, 3 (17,6%) had bilateral lesions. 6 (31,5%) of PGLs were both visible and tender during palpation. An average duration of the procedure was 2h, embolization prior to surgery was performed in 3patients. 1 (5,8%) had neoplastic changes in lymph nodes with Ki67>10. Postoperative complications experienced 6 (35,3%) patients, 4 (21,1%) of them were of long-term duration.

Conclusions

CBTs are slow-growing tumours in which an early detection leading to surgery may eliminate the risk of potential complications. Surgical resection with local lymph nodes removal is a procedure of choice.

Severe mechanical complication of the myocardial infarction with the happy ending

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Introduction:
The myocardial infarction (MI) is no longer as serious condition as it used to be, mainly because of the progress achieved in medical therapy and coronary interventions. However, there may occur few potentially fatal complications due to prolonged ischemia such as: ventricle wall rupture leading to tamponade, interventricular septum rupture or papillary muscle rupture resulting in mitral regurgitation. Papillary muscle rupture usually develops 2 to 10 days after myocardial infarction.

Case report:
We present a case of an 89-year-old woman admitted to the Cardiology Department with STEMI. There amputation of circumflex branch of left coronary artery was performed with successful revascularization. Unfortunately, the antiplatelet medications caused post – intervention upper gastrointestinal hemorrhage. As a result of low platelet level, the patient was treated with platelet transfusion. After few days, the clinical status of the patient worsened and the transthoracic echocardiography was performed showing a papillary muscle rupture with severe mitral regurgitation. Despite the high risk of the operation due to advanced age, the patient was referred for emergent surgery, as the only way to survive. The mitral valve replacement was performed, which subsequently resulted in significant improvement of the patient's condition. Surprisingly, after the post-op rehabilitation, patients got back to the Nordic walking again, which was her custom before.

Conclusions
This case shows, that we need to be very careful with older patients with myocardial infarction, and even with high surgical risk, the operation is worth considering.

Coronary artery bypass rupture with fatal cardiac tamponade – case report and review

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Introduction:

Coronary artery bypass grafting is one of the most common procedure in cardiovascular surgery, which is performed to restore standard blood flow to an obstructed coronary artery. This surgical procedure is performed to patients with multivessel coronary disease or contraindications to percutaneous coronary intervention (PCI). Life-threatening complications are rare in the clinical practice.

Case report:

We report a case of 61-years-old female, with many cardiac burdens in her past medical history. One month after CABG suddenly occurred such symptoms as: sweating, increased body temperature, shortness of breath and convulsions. In a short time the woman died in her house. Post-mortem examination, which was performed in the department of forensic medicine, revealed that the cause of death was transverse rupture of the coronary artery graft at a distance of 7 centimeters from the anastomosis. The rupture on the length of half centimeter on the course of the left internal mammary artery (LIMA) grafted to the left anterior descending (LAD) coronary artery, caused acute circulatory failure on the basis of cardiac tamponade.

Conclusions

Discussed case shows how important in post-mortem investigation is availability of past medical history and precisely done medicolegal autopsy. Ruptured bypass with cardiac tamponade is rare cause of death although it should be considered in each patient after CABG.

CASE STUDY
INTERNAL MEDICINE 1
C

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Radical treatment attempt in oligorecurrent esophageal cancer: a case report

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Introduction

Approximately half of the patients with esophageal cancer are diagnosed in advanced stage, characterized by dismal prognosis - in the setting of metastatic/recurrent disease less than 5% survive 5 years. Current treatment guidelines do not advocate surgical management of metastases in all patients; however, more aggressive treatment may be considered on an individual basis. Selected patients may also benefit from targeted therapies or immunotherapy. We present a case of patient with oligorecurrent esophageal cancer who was treated with all treatment modalities and survived 8 years since initial diagnosis.

Case report

A 34-year old female was diagnosed in 2011 with esophageal cancer and underwent preoperative chemoradiation followed by R1 resection of the esophagus and part of the stomach. Histopathologic examination confirmed squamous cell carcinoma (G3), stage pT3N1. The course of the disease was progressive and, during the next 5 years, the patient underwent a pulmonary metastasectomy, series of radio- and chemotherapies, and was treated with immunotherapy (pembrolizumab). Staining performed in FFPE specimen revealed p16INK4A overexpression and thus the patient was administered prophylactic HPV vaccine (Gardasil). More in-depth analyses revealed that molecularly targeted treatment with mTOR inhibitor everolimus (Afinitor) might be efficient. Unfortunately, shortly after its introduction subsequent metastases developed in the lumbar region of the spinal column. Despite the surgical resection and stereotaxic radiotherapy in this region, the disease was progressive and involved urinary system, posing need for ureterocutaneostomia and eventually led to death caused by the cancerous cachexia in 2019.

Conclusions

Currently, no consensus guidelines exist on the treatment of oligometastatic and oligorecurrent disease in the upper gastrointestinal tract. Some data, however, suggest that more aggressive treatment in young patients in good general condition and with moderate metastatic burden may significantly improve outcome. This report exemplifies several approaches to the treatment of oligorecurrent esophageal cancer, including personalized therapies with immunotherapy and molecularly targeted drugs which resulted in 8 years of survival. Furthermore, it supports current trends in oncology to radicalize treatment in selected patients.

Paradoxical effects of anti-tumor necrosis factor therapy (anti-TNF) in Ankylosing Spondylitis and Inflammatory Bowel Disease

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Introduction

Recent advances in the understanding of pathogenesis of seemingly unrelated immune-mediated diseases shed light on multiple associations between Ankylosing Spondylitis (AS) and Inflammatory Bowel Disease (IBD). Epidemiological reports showed coexistence of the two entities, and were followed by in-depth studies of shared underlaying immune mechanisms. Tumor Necrosis Factor (TNF) was discovered as the common major driver of the inflammatory process. Its' central role was finally confirmed by the effectiveness of anti-TNF therapy in both diseases.

Case report

A 29-year old male patient was admitted to the Rheumatology Department due to lower back pain. Since 10 years he was experiencing gradually aggravating morning stiffness and restriction of lower back mobility. Imagining tests – MRI and conventional radiography – revealed bone marrow oedema and erosions in sacroiliac joint spaces. Among laboratory findings HLA-B27 positivity, elevated CRP and ESR levels pointed towards the diagnosis of Ankylosing Spondylitis. At that time, the patient denied any gastrointestinal symptoms. Initially treated with non-steroidal anti-inflammatory drugs, he was qualified for biological treatment with an anti-TNF agent certolizumab. After administration of the first 5 doses of certolizumab the patient reported abdominal pain and diarrhoea with blood. Image characteristic for Ulcerative Colitis was revealed by colonoscopy and confirmed by histopathology. Certolizumab therapy has been discontinued and the patient received hydrocortisone and mesalazine. The intervention brought relief of the gastrointestinal symptoms and a second attempt to therapy with certolizumab was made. Endoscopic examination of the large intestine showed rectal ulceration.

Conclusions

Upon anti-TNF treatment primarily rheumatological patients might present unforeseen flares of enterocolitis and conversely, primarily gastroenterological patients experience joint inflammation in the course of therapy. Review of similar case reports from all over the world points towards an emerging, obscure problem of paradoxical effects of anti-TNF agents. During my presentation I will attempt to elucidate and compare the immune phenomena occurring in the course of anti-TNF therapy and point towards future directions of research aiming to provide safe and effective treatment of patients suffering from multiple conditions.

Make room! Make room! - case report of visceral artery aneurysms severely compressing biliary ducts

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Introduction

Visceral artery aneurysms (VAAs) are uncommon and potential life- threatening condition. They represent a rare finding with an incidence ranging between 0.1% to 0.2%. Most commonly affected vessels are the splenic (46%), followed by renal (22%) and hepatic (16,2%). Gastroduodenal arteries are less often involved- only 1,5% of all reported VAA. Etiological factors include atherosclerosis, trauma, infection and congenital disorders. The real incidence is unknown because most cases are asymptomatic. However, VAAa may cause abdominal pain, haemorrhagic events and in an extremely rare cases aneurysms may cause the external compression of biliary ducts.

Case report

A 56-year-old man was admitted to the Department of Gastroenterology in Norbert Barlicki Memorial University Hospital with jaundice, abdominal pain radiating to lower back and high temperature of 38˚C. Moreover, the patient reported weight loss approximately seven kilograms during last weeks and appetite loss. Infectious etiology of jaundice was excluded with the laboratory tests. Blood laboratory test revealed aspartate transaminase (AST) of 142 U/L, alanine transaminase (ALT) of 188 U/L; total bilirubin level was 6,94 mg/dL and gamma-glutamylotransferase (GGT) was 595 U/L. Also, increased level of C-reactive protein and procalcytonin was reported. Abdominal ultrasound revealed enlarged gallbladder (10 cm lenght) with thickened walls and no gallstones. Furthermore, the intrahepatic biliary ducts of the left lobe of liver were enlarged. Around the head of pancreas, a fluid space was discovered. In first twelve hours after admission the computer tomography (CT) imaging of abdomen found presence of multiple aneurysms on the splenic, gastroduodenal and right hepatic arteries. The greatest one was localised on gastroduodenal artery: 80x75x80 mm of size. On the splenic artery two aneurysms were detected (49x44x51mm and 23x19mm), one of them was clotted. In addition, a layers of concentrated fluid, probably blood, around the liver, spleen, gastric fundus and in the minor pelvis were detected. According to CT results, the diagnosis of the aneurysm of the gastroduodenal artery was made, which replaced the head of pancreas downwards impairing the flow of bile and causing the gallbladder`s enlargement. Patient was disqualified from endoscopic retrograde cholangiopancreatography (ERCP), and after consultation transferred to department of vascular surgery, where embolization of the right hepatic artery aneurysm was performed.

Conclusions

To conclude, visceral artery aneurysms may cause displacement of internal organs and nonspecific symptoms like jaundice, which should be considered in differential diagnostics.

Stress-induced cardiomyopathy in oncological patient

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Introduction

Takotsubo syndrome is rare acute heart failure syndrome affecting 2-3% of people. 90% occurs in women, mostly postmenopausal. It can be induced by physical or emotional trigger factor.

Case report

67-years-old woman with colon cancer was admitted to the hospital with sub-obstructive symptoms (26.05.2017), subsequently laparotomy was performed. During surgery patient needed continuous iv catecholamines infusion due to hypotonia. One-day after the surgery, she demonstrated acute circulatory and respiratory failure, cardiac arrest (VF mechanism) and cardiogenic shock. She was transferred to cardiology ward with diagnosis of ST-Elevation myocardial infarction (STEMI) of anterior wall. Coronary angiography did not reveal significant stenosis in coronary arteries. Pulmonary embolism was excluded in angio-CT. In echocardiography (TTE) there was generalized hypokinesis with LV EF reduced to 10-15%. Due to cardiogenic shock, IABP was utilized. Patient was diagnosed with MI type 2 and transferred to intensive care unit. Four weeks later in control TTE, the LV EF was 60% with mild mitral and trigeminal valve regurgitation. During following months, the recurrence of cancer was diagnosed and she received oncological treatment. At one-year follow up, woman reported fatigue, dizziness, malaise and presyncope symptoms. Holter-ECG performed in outpatient, revealed short episodes of 2nd degree AV block, Mobitz II and she was qualified for pacemaker implantation. The patient had urine stagnation (09.2018). Histopathological exam showed urothelial cancer. Her cardiology status remains stable, she is during chemotherapy.

Conclusions

Takotsubo cardiomyopathy is characterized by symptoms imitating acute coronary syndrome, so it can be easily mistaken and treated as such in the initial period. In this case the trigger factor could be surgical procedure, elevated catecholamines or mental stress associated with cancer.

Short-acting opioids addiction problem among patients with long-term course of cancer and the validity of continuing the therapy- case report.

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Introduction

The risk of developing addiction among patients with cancer and relatively good prognosis is a challenge in a contemporary medicine. With the increase in treatment possibilities, patients' survival rate increases, and therefore the risk of inappropriate use of opioid drugs, especially short-acting ones. The purpose of this study was to assess the validity of continuing the therapy with a short-acting fentanyl or changing the treatment plan of an addicted patient.

Case report

This study presents the case of a 49 year-old male patient with a presacral advanced neuroendocrine tumor, infiltrating the rectum, with developed metastatic disease to the liver, lungs and bones. The patient is under the care of palliative medicine clinic due to cancer pain with a severe intensity, assessed by the patient at 7-10 points, using the NRS scale. During analgesic opioid therapy, the patient developed an addiction to a short-acting intranasal fentanyl. Attempts to modify the treatment did not bring positive results due to the significant severity of the complaints and patient's noncompliance with medical recommendations. At the same time, the patient remains satisfied with his current therapy which includes a short-acting intranasal fentanyl that the patient founds the only effective one. The applied research methods were patient interview, physical examination, analysis of medical records and an original questionnaire regarding opioid addiction among cancer patients. The test consisted of 19 questions divided into larger and smaller criteria.

Conclusions

Analysis of the results of the author's questionnaire confirmed the diagnosis of addiction to opioid drugs. The patient gave an affirmative answer to 16 out of 19 questionnaire questions. The interview and physical examination showed that the patient is satisfied with the treatment therapy that allows him to maintain physical activity and decent quality of life. Because of the advanced cancer process and significantly intensified pain complaints, improvement of the quality of life becomes the overriding value. Continuation of the therapy included with intranasal short-acting fentanyl that is well tolerated by the patient and gives satisfactory analgesic effect is highly recommended.

Fever, skin lesions and acute kidney injury during immunosuppressive treatment in a patient with systemic vasculitis

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Introduction

Acute generalized exanthematous pustulosis (AGEP) is a rare and severe skin reaction to drugs. Numerous pustules suddenly arise on red oedematous skin, and are typically accompanied by fever, leukocytosis and elevation of inflammation markers. Such clinical presentation may also occur in systemic disease flare-ups and infections associated with immunosuppressive treatment, which makes for a complicated differential diagnosis.

Case report

A 35-year old patient with rapidly progressive glomerulonephritis in the course of p-ANCA(+) microscopic polyangiitis, following induction therapy with cyclophosphamide and plasmapheresis was on a maintenance immunosuppressives therapy with steroids and, since the previous week, azathioprine. The patient was admitted to the Nephrology Ward due to a fever up to 40°C, anuria, lumbar pain, ulcerations of the oral mucosa and skin lesions - a maculopapular rash located on the nape, neck and other exposed areas. Laboratory results showed signs of acute kidney injury (AKI) (serum creatinine > 9 mg/dL) and elevated inflammation markers (procalcitonin > 100 ng/L, CRP > 540 mg/L and 13 G/L WBC with 98% of neutrophils) with normal lactate level. Abdominal doppler ultrasound and chest X-rays revealed no substantial deviations. Due to uncertain etiology and deteriorating condition broad-spectrum antibiotic therapy was introduced, together with antiviral and antifungal treatment. Hemodialysis was started, alongside immunoglobulin infusions and systemic steroids; simultaneously azathioprine administration was stopped. This treatment resulted in AKI remission, a decrease in skin lesions and normalization of laboratory parameters. Considering negative blood culture, urine culture and virology (including CMV DNA), absence of unequivocal diagnosis of a vasculitis flare-up and the histopathology report of the skin lesions the patient was diagnosed with AGEP in the course of azathioprine treatment. To treat the primary disease, the patient was qualified for rituximab therapy.

Conclusions

During differential diagnosis of inflammation in a patient with an autoimmune disease currently undergoing immunosuppressive treatment, one ought to consider both a flare-up of the primary disease and other causes of elevated inflammation parameters (infectious and non-infectious). Acute drug reactions - including AGEP - need to be kept in mind. High procalcitonin is not always a sign of bacterial infection; it also appears in the clinical presentation of extremely rare drug hypersensitivities, including azathioprine hypersensitivity. To the best of our knowledge, this is the second reported case of such an adverse effect due to azathioprine treatment.

Reactivation of latent infection in patient with granulomatosis with polyangiitis.

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Introduction

Granulomatosis with polyangiitis (GPA) is an inflammatory systemic disorder, affecting small and medium vessels, leading to their necrosis and therefore ischemia and damage in the supplied tissues/organs. Immunosuppressive drugs (IS) are used to induce and maintain remission. The most serious adverse events of IS are infections, including opportunistic, sometimes difficult to differentiate from the disease flare.

Case report

A 61-year old man, diagnosed with GPA and not complying with the IS treatment was admitted to the rheumatology ward with extensive skin lesions on the shins and joint pain. Under the suspicion of GPA flare, he was administered 2,5g of methylprednisolone and proceeded to resume their azathioprine treatment. In the course of hospitalisation he was diagnosed with sepsis and thereby antibacterial treatment was implemented. Rapid deterioration of kidney function (eGFR=10 ml/min/1,73m2) that required hemodialysis was observed and thus the patient was referred to the nephrology ward. Kidney biopsy revealed rapidly progressive glomerulonephritis in the course of GPA, therefore plasmapheresis was started. The patient's condition deteriorated with fever up to 40°C, dyspnea and pneumonia was diagnosed. Laboratory testing revealed severe pancytopenia - WBC of 1,4 G/l, RBC of 2,7 T/l and PLT count of 20 000/µl with CRP elevation and normal procalcitonin level. Computer tomography scans of the chest revealed ground-glass opacity and parenchymal densities in both lungs. Differential diagnosis was started, including bacterial, fungal and viral infection and the CMV DNA was positive with 349.581 copies/ml. Ganciclovir was started and patient general condition and laboratory results rapidly improved.

Conclusions

IS therapy can lead to infections and activation of latent viruses posing a serious risk for people with immunity disorders. CMV infection should be always considered in the differential diagnosis of general condition deterioration of patients treated with IS.

Breaking the pattern: about the need for individualization of immunosuppressive therapy

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Introduction

KTx is the most effective treatment for end-stage renal disease (ESRD). To prevent graft rejection and to keep its function, patients have to be treated with immunosuppressive therapy. The regimen mostly often consists of steroids, calcineurin inhibitors (CNIs) and antiproliferative drugs. CNIs (tacrolimus – TAC or cyclosporine A – CsA) blood concentrations appropriate to each period after transplantation are crucial to ensure favourable outcomes.

Case study

40-year-old female with ESRD in the course of hypertensive nephropathy was scheduled for KTx. Beforehand, she had been treated with peritoneal dialysis, complicated by intestinal entrapment in the scar after implantation of the peritoneal catheter. Partial bowel resection was necessary, and peritoneal dialysis were converted to hemodialysis. Afterwards, due to coexisting pathological obesity (BMI of 41.1), the patient had to undergo bariatric surgery as part of the KTx arrangements. The procedure was performed using the Roux-en-Y method and the intended effect was achieved (BMI of 26). A deceased-donor kidney was transplanted. The patient was qualified for the standard immunosuppressive regimen, with induction therapy (basiliximab). However, required TAC blood concentrations couldn't be achieved, probably due to significantly reduced absorption surface area. It was necessary to highly individualize the treatment, using massively (up to 10 times the usual) increased TAC doses and drugs adjoining P450 inhibitors. Afterwards, proper TAC concentrations were achieved and the patient was discharged with good graft function.

Conclusions

Most drugs, including TAC, show gastric or intestinal absorption. Bariatric surgeries, partial or total bowel resections result in a significant reduction of the absorption area. Unlike in the described case, usually physician does not have the possibility to measure blood concentrations of the prescribed drugs. Therefore, they should be especially careful while treating patients after gastrointestinal resections, given standard medication doses of medication may be insufficient.

Case study of a patient suffering from a myelodysplastic syndrome after the age of 60

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Introduction

The etiology of MDS syndromes (myelodysplastic syndromes) is unknown. The average age of patients at diagnosis is 69 years. . Myelodysplastic syndromes (MDS) arise as a result of mutation and clonal myeloid cell proliferation. About 50% of MDS are recognized by accident. The most frequently observed clinical consequences of cytopenias: increased symptoms of anemia, haemorrhagic diathesis, recurrent infections, acute myelogenous leukemia. Transfusion concentrate of red blood cells and platelet concentrate is used in the majority of patients with MDS as the only form of therapy is recommended in patients with good prognosis and in patients with poor prognosis, disqualified for other forms of therapy. Its aim is to improve the quality of life of patients.

Case report

A 77-year-old patient repeatedly hospitalized in the Department of Geriatrics for symptomatic anemia in myelodysplastic syndrome. Independent patient in the field of self-care, living alone. The main ailments of the patient: weakness, depressed mood, reduced tolerance of physical exercise, dizziness, palpitations with little effort, symptoms of gastrointestinal bleeding, stenocardial ailments. Patient with multidisease. She was hospitalized in the Department of Hematology in 2017. A bone marrow biopsy was performed - in the myelogram MDS was diagnosed with features of low-grade triplicate dysplasia. From December 2018, the patient took 40 mg encortone, no improvement, and the decrease in hemoglobin was observed, and the prednisone was given a slow stop. During the hospitalization (January 2018), 2 units of NUKKCz and 1000 mg of Manover were transfused. Patient repeatedly hospitalized to transfuse NUKKCz (since the beginning of 2018 11 times - average 1 x / month). From October 2012 to November 2018, a total of 49 NUKKCz units were transfused, reducing only the symptoms of the disease.In laboratory tests, the patient had: significantly elevated glucose, RDW-CV, RDW-SD, creatinine, APTT, INR, prothrombin time. A significant decrease was observed in the following indicators: RBC, HGB, HCT, MCHC, LYMPH, glomerular filtration, prothrombin index

Conclussions

A careful assessment of the functional status, ability to tolerate treatment, disease progression, and overall health can be helpful in determining treatment. Palliative care and environmental care are important aspects of improving the health and quality of life of MDS patients.

Could laxatives abuse contribute to a false picture of diabetes mellitus?

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Introduction

Laxatives, such as bisacodyl, stimulate enteric nerves to cause colonic contractions and increase fluid and salt secretion. It may lead to dehydratation and electrolyte problems eg. hypokalemia. Low serum potassium level less than 3.6 mEq/L can be associated with impaired insulin secretion and decreased peripheral glucose utilization resulting in carbohydrate intolerance and hyperglycemia. Moreover there is a suggestion that low dietary potassium intake may be associated with higher diabetes risk.

Case report

A 21-year-old female patient was hospitalized due to tachycardia. Severe hypokaliemia (2,3 mmol/l) was found in performed test as well as increased glycemia in venous blood (293 mg/dl). The patient admitted to using laxatives, intense gym workout and polydipsia. She was diagnosed with type 1 diabetes and insulin therapy was implemented. After 2 weeks the patient made a decision to dechallenge the drug because of decreases in blood glucose. During next hospitalization her potassium level was 4,5 mmol/l and glycated hemoglobin level was 4,7%. However impraired glukose tolerance was revealed in oral glucose tolerance test. Anti-GAD antibodies, islet cel antibodies and anti-IA2 antibodies were negative.

Conclusions

Presented case shows that laxatives can induce transient glycemic disorders. Moreover it should be taken into consideration that low potassium is a possible risk factor for type 2 diabetes.

Acute kidney injury due to rhabdomyolysis in a marathon runner.

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Introduction

Rhabdomyolysis is a clinical syndrome characterized by skeletal muscles damage and release of toxic intracellular contents into the circulation. Causes include excessive muscular activity, trauma, drugs, hyperthermia, infections, electrolyte abnormalities, genetic disorders. Severity of rhabdomyolysis can vary from subclinical rise of creatine kinase to acute kidney injury or DIC.

Case Report

36-year-old man was hospitalized in the emergency room after losing consciousness 100m before finishing a marathon. Due to patient's agitation, substance abuse was suspected and toxicology was performed showing negative results. Patient confirmed use of anabolic steroids. Renal function was slightly decreased. Patient was discharged with recommendations to hydrate, rest and report to his general practitioner. The following day he returned reporting abdominal pain and anuria. Physical examination revealed signs of severe dehydration, tender abdomen, moderate muscle guarding and positive Blumberg sign. Laboratory tests (creatinine 6mg/dl, urea 115mg/dl, potassium 6,3mg/dl, pH 7,32) indicated acute kidney injury possibly due to dehydration and rhabdomyolysis (CK 254060 U/L). Abdominal X-ray was performed and confirmed the diagnosis of intestinal obstruction, which was suspected to be a result of AKI. Yet, massively elevated D-dimers (6869 ng/ml) and angio-CT identified thrombosis of a small branch of mesenteric artery as the cause. Segmental bowel resection was performed and the patient was transferred to ICU and then Nephrology Department where he underwent a series of hemodialysis. Sub febrile fever occurred but cultures were negative and CRP was in a normal range. The patient was discharged in a good condition and remains in an ambulatory care.

Conclusions

Subclinical myoglobinemia, myoglobinuria, and elevation in serum creatine kinase are common following physical exertion. Acute kidney injury develops in 33% of patients with rhabdomyolysis and is the most serious complication in the initial stage. Factors contributing to AKI include hypovolemia, acidosis or aciduria, tubular obstruction and toxicity of myoglobin. Long term use of anabolic steroids has been reported to be linked to kidney damage. Various clinical factors are used to predict the risk of AKI but no single parameter has been established. Therefore, it is crucial to closely monitor renal function in patients with suspected rhabdomyolysis after excessive muscular activity.

Aorto-esophageal fistula as a complication after implantation of the stent graft into the aortic aneurysm

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Introduction

Stent grafts are implanted to patients with aortic aneurysms. These treatments may be associated with rare complications,such as leaks, stenosis and translocation of the stent graft. One of the complications may be vascular prosthesis infection even many years after implantation. The aorto-oesophageal fistula is a very rare complication. Fistula symptoms appear suddenly and cause rapid hemostatic disorders. The patient usually bleed from the gastrointestinal tract due to the pathological connection between circulatory and digestive system.

Case Report

An 87-year-old woman with thoracic aorta stent graft implanted 5 years ago was admitted to the Department of Internal Medicine, Pneumonology and Allergology due to weakening and dehydration lasting 3 weeks. Chest X-ray revealed fluid in the left pleura, atelectasis of the left lung and aortic aneurysm. Antibiotic therapy was implemented because of clinical and auscultatory symptoms of pneumonia. In the chest CT, a lot of gas bubbles in the aneurysm, aortic wall defect and the esophagus widened with the fluid level were found. The whole radiological image indicated the probability of the esophageal fistula to the thoracic aortic aneurysm. The maximum transverse dimension of the descending aorta was 71x89cm and was smaller in comparisson to dimensions (105mmx104mm) performed during a CT scan 4 months ago. The patient was examined with X-ray contrast examination, which confirmed the presence of the fistula. The patient was qualified to set up the esophageal prosthesis. Control radiological examination showed the tightness of the prosthesis. Due to sustained bleeding with end-stage Hb 6mg / dl, the patient received 10 units of red blood cell concentrate, 3 units of fresh frozen plasma and fluids during the whole hospitalization. Despite some stabilization there wasn't significant improvement achieved. On the 15th day after admission the patient died.

Conclusions

Complications such as aorto-oesophageal fistulas are imminent danger to life. Rapidly progressing bleeding from the gastrointestinal tract leads to the anemization of patients and can cause the shock. Thanks to imaging tests, we can confirm or exclude the presence of fistulas and other complications. However, this case may be evidence that even a quick supply of aorto-oesophageal fistula does not improve prognosis of the patients.

Severe obstructive sleep apnoea - a case report

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Introduction

Obstructive sleep apnoea is a condition characterized by pauses in breathing or periods of shallow breathing caused by obstructions in the upper airway. It increases the risk of driving accidents, as well as numerous diseases, for instance myocardial infarction and stroke. Sleep apnoea risk factors include enlargement of tongue and tonsils, deviated septum, large neck size and obesity.

Case report

A 41-year old man was referred for diagnostics of sleep apnoea due to reported symptoms that included loud snoring, daytime sleepiness, frequent awakenings and morning headaches. He had a history of hypertension and diabetes type 2. Physical examination revealed mild ankle oedema and class 3 obesity (BMI 46,0). Polysomnography was performed and revealed severe obstructive sleep apnoea with AHI (apnoea-hipopnoea index) 102,9/h. Mean blood saturation during sleep was 88,1%. However, during apnoea periods it reached values as low as 55,0%. Therefore, trial treatment with auto-CPAP device was implemented in the hospital and therapeutic pressure of 12 cmHg was prescribed for continuation of treatment in domestic conditions. Follow-up visit showed both very good adherence to treatment and its efficiency, as the patient used the CPAP device for 98,7% of nights and the AHI was 2,3/h.

Conclusions

Patients with obesity and metabolic syndrome are particularly predisposed to obstructive sleep apnoea, which increases their already high cardiovascular risk and therefore demands treatment. Excellent adherence to the CPAP therapy suggests that it provided substantial relief for the patient and the alleviation of troubling symptoms.

CASE STUDY
INTERNAL MEDICINE 2

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A rare case of an uncomplicated medical termination of a partial hydatidiform mole with coexistent fetus

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Introduction

Partial hydatidiform mole (PHM) is a rare, non-malignant subtype of gestational trophoblastic disease (GTD). It has a potential to transform into malignant gestational trophoblastic neoplasia. PHM is usually seen in women who have a history of GTD or their age is either below 20 or over 50 years old. Common features of PHM include vaginal bleeding, pelvic pain, inadequate enlargement of uterus and hyperemesis gravidarum. It also secretes significant amounts of β-HCG proportional to tumor mass, which may lead to hyperthyroidism. Such a condition often occurs in a normal pregnancy, which initially may lead to misdiagnosis. Sporadically, PHM may be present with coexistent viable fetus (PHMCF). PHMCF presentation in a 31-year-old woman with negative history is therefore rare and correct management is challenging.

Case report:

We herein report a case of PHMCF in a 31-year-old white woman who was admitted to the clinic during seventeenth week of her third pregnancy due to hyperemesis gravidarum and clinical symptoms of hyperthyroidism. Diagnostic tests revealed high level of β-HCG (1500 IU/ml), increased fT4 (47.52 pmol/L, N 9.01-19.05 pmol/L) and reduced TSH (0.0034 ulU/ml, N 0.35-4.94 ulU/ml). Ultrasound showed developed fetus with detectable heartbeat, uterine cavity partially filled with thickened chorion and ovarian transformation into tekalutein cysts. The whole clinical picture corresponded to the partial hydatidiform mole with coexistent fetus. The patient underwent medical termination of pregnancy followed by uterine sharp curettage. Microscopic examination of the curettage specimen revealed features of the placenta pathognomonic for the PHM. Due to secondary hyperthyroidism, treatment with 20 mg methimazole was prescribed. The patient was discharged in a good general condition. After 5 months β-HCG level dropped to 0.00428 IU/ml and thyroid function normalized (TSH 0.99 ulU/ml, fT4 12.37 pmol/L).

Conclusions

Deciding on correct management of partial hydatidiform mole with coexistent viable fetus is a dilemma for both doctors and parents. In the literature, there are cases of continued PHMCF that culminated in deliveries of healthy babies, however the risk of both maternal and infant complications is high and usually pregnancy termination is suggested. Unfortunately, chemotherapy is often required after medical termination of molar pregnancies in the second trimester. The study of unusual uncomplicated course after medical termination followed by uterine curettage shows that this method might be a safe option for patients with PHMCF in the second trimester wishing to terminate the pregnancy and have a chance for subsequent conception.

Massive ascites of unknown origin in patient after second kidney transplantation

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Introduction

Ascites is excessive accumulation of fluid (above 150 ml) in the peritoneal cavity. The most common causes are: liver cirrhosis, cancers or heart failure. Less common causes include tuberculosis, pancreatitis, damage of lymphatic vessels, chlamydial peritonitis, hypothyroidism, Budd-Chiari syndrome, filariasis, and Meigs' syndrome (fluid in the peritoneal, pleural or pericardial effusions in course of the ovarian cancer).

Case report:

31-year-old patient suffering from chronic renal failure of unknown etiology, treated by hemodialysis and peritoneal dialysis, after two kidney transplantations (KTX) in 2009 and 2014. (the second with normal renal transplant) was often hospitalised because of ascites, which appeared two years after the second KTX. Patient regularly, every 2 -3 weeks, was treated by paracentesis to decompress ascites. Transudate was tested for bacterial, fungal and tuberculosis with negative results. Peritoneal fluid cytology did not show pathological cells. Repeatedly performed abdominal ultrasounds imaging with liver vessels evaluation, by Doppler expansion, and fibroscan of liver did not show any irregularities. MRI diagnostics of the abdomen revealed enlarged left ovary. A high level of the CA 125 marker was found. Diagnostic laparoscopy was performed twice, first showed no changes in the ovaries, second laparoscopy exposed solid ovarian cysts on the left ovary. There were no tumour cells in the histopathological examination of samples from ovary. Diagnostics were extended by performing the following steps: chest and abdominal CT, gastroscopy, colonoscopy, echocardiography, PET, but there were no deviations. Suspecting drug etiology, mycophenolate mofetil was discontinued, bringing no improvement. The clinical picture and conducted diagnostic tests caused suspicion of the Meigs syndrome, therefore in February 2019 oophorectomy of left ovary was conducted. The histopathological examination revealed numerous small cysts filled with serous fluid, without tumour cells within the ovary or in the peritoneal fluid. Despite the procedure performed, ascites has been recurrent and required cyclical decompression. In result, the etiology of ascites is unknown. The peritoneal fluid was sampled for testing for atypical mycobacteria (including Mycobacterium avium). Another PET examination is planed.

Conclusions

Described case is atypical due to occurring ascites of the previously unknown etiology. Performed research and medical interventions ruled out most common causes of ascites but did not establish proper etiology. Despite patient's good general condition,onerous nature of the disease, and the need for repetitive paracentesis, significantly reducing quality of life, requires diagnose for rare, casuistic diseases.

Large cell neuroendocrine carcinoma of the lung. Case report.

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Introduction

Lung cancer is the leading cause of cancer-related death worldwide, both in men and women. Most patients presented with stage IV disease have the median overall survival of 8–10 months and a 5-year survival rate isestimated at approximately 4%. Large cell neuroendocrine carcinomas (LCNECs) are a rare subset of lung cancer, accounting for 15% of neuroendocrine tumors and 3% of all lung cancers.

Case report:

A 62-year-old female diagnosed with stage IV large cell neuroendocrine carcinoma was admitted to the Department of Oncology in August 2018. Bronchofiberoscopy performed in 2017 revealed left bronchial obstruction caused by submucosal hyperplasia. Cytological examination showed atypical cells, most likely neoplastic. In contrast-enhanced chest CT a tumor mass with dimensions of 28x46 mm in the left pulmonary hilus was described, infiltrating the distal left main bronchial wall, parenchyma of a left superior lobe and lingula, as well as the left pulmonary artery. Follow-up subsequent CT examinations documented progression of the disease. In April 2018, the patient underwent left upper lobectomy. Histopathological examination revealed large cell neuroendocrine carcinoma pT1bN2 (stage IIIA according to the UICC TNM classification, 8thedition). In June 2018, CT revealed a metastatic lesion in the right brain hemisphere (stage IV). Patient underwent whole brain radiotherapy and due to advanced disease was enrolled to the clinical trial with avelumab - monoclonal antibody targeting the protein programmed death-ligand 1 (PD-L1). The drug was administered intravenously, within 60 minutes, every 2 weeks. After six cycles of avelumab grade 3 hepatitis was diagnosed (elevated aminotransferase level ALT- 368 U/L, AST- 164 U/L) therefore corticosteroids was implemented and treatment with avelumab was permanently discontinued. In radiological assessment performed 3 months after treatment discontinuation complete response (CR) according to the RECIST 1.1. criteria still maintains.

Conclusions

Large cell neuroendocrine carcinoma of the lung is a rare, aggressive, and difficult-to-treat tumor. It is classified as a neuroendocrine subtype of large cell lung carcinoma (LCLC) and belongs to the non-small cell lung cancer (NSCLC) group with very poor prognosis. Avelumab is a fully human anti–PD-L1 IgG1 antibody that has shown promising antitumor activity and a manageable safety profile in a population of patients with progressive, metastatic or recurrent NSCLC.

Overlapping idiopathic pulmonary fibrosis, lung cancer and pneumonia: a case report

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Introduction

Idiopathic pulmonary fibrosis (IPF) is a chronic lung disease characterized by a progressive and irreversible decline in lung function. Typical symptoms are gradual onset of shortness of breath, chronic dry cough, restrictive ventilation disorder and histopathological features of usual interstitial pneumonia (UIP). It is currently believed to be caused by acinar epithelium microlesions of unknown origin and inadequate miofibroblast-mediated healing leading to fibrosis. Considered underlying factors are tobacco smoke, viruses and immunological complexes, but other probable risk factors include antidepressants' use, gastro-esophageal reflux, inhalation of particulate matter in polluted environment and infections (mainly with EBV, CMV, flu, HBV, HCV and HIV viruses). Differential diagnosis of IPF involves excluding other causes of UIP such as connective tissue diseases, sarcoidosis and allergic alveolitis. It is also important to note, that in approximately 10-15% of cases the cause of death is lung cancer, as the disease increases its risk.

Case report:

R.L., aged 77, was under diagnostic in April 2018 in the Pulmonology and Chemotheraphy Clinic due to diffuse lesions in lungs. Basing on the taken history, physical examination and a high-resolution chest computed tomography, an image of UIP was established. In order to confirm suspected IPF differential diagnostic was performed. During this process, because high levels of CEA and CA19.9, an abdomen CT was done and a colon infiltration with probable metastases were discovered. During further diagnostic in the Gastroenterology Clinic he developed a gastrointestinal obstruction and an emergency hemicolectomy had to be carried out. After histopathology results and confirming the colon adenocarcinoma and metastases he received chemotheraphy.

The patient was readmitted to the Pulmonology an Chemotheraphy department in December 2018 due to a bilateral pneumonia while in immunosuppression caused by the chemotheraphy. After only a partial recovery despite treatment, as a metastatic cause was suspected, cytological tests were performed – but to no avail. Patients state did not allow for the available invasive diagnostic and in the best possible/ optimal state he was discharged home. After a few days at home he rapidly deteriorated, was readmitted and died after one day in the Clinic in the mechanism of lung edema. In the post-mortem examination the image established was a coexistence of IPF, colon cancer with metastases and an invasive acinar and lepidic growth bronchial adenocarcinoma, as well as purulent bronchopneumonia and pulmonary thrombosis.

Conclusions

Overlapping inflammation and cancer lesions in lungs may produce the same symptoms and thus greatly postpone correct diagnosis or render it impossible. Because of this in case of treatment-resistant diseases in the inflammation spectrum, it is crucial to include oncological diagnostic

Ventricular fibrillation after cypermethrin inhalation

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Introduction

Pyrethroids are a class of highly effective synthetic insecticides, which includes substances such as cypermethrin and permethrin. Although they are believed to be relatively safe for humans, it has been reported that they can affect human health causing mainly respiratory and neurological symptoms. Moreover, pyrethroids are able to influence the cardiovascular system.

Case report:

A 58–year-old man was admitted to the hospital after a sudden cardiac arrest due to ventricular fibrillation. The condition occurred after a three-hour cypermethrin exposure during work in an orchard. The patient underwent surgical treatment of aortic coarctation when he was 10 years old and aortic valve replacement in 2014 due to aortic valve stenosis. He was previously diagnosed with hypertension.

Upon arrival the patient was in a severe general condition. His heart rate was 93 beats/min and the arterial blood pressure was 168/103 mmHg. Clinical examination was unremarkable. The 12 lead electrocardiogram (ECG) showed a sinus rhythm, left anterior hemiblock and left ventricular hypertrophy. The bedside trans-thoracic echocardiogram (TTE) confirmed left ventricular hypertrophy without outflow obstruction. The function of the bioprosthetic valve and the contractility of the ventricles were normal. The coronary angiogram revealed no changes in coronary arteries. Aortic dissection was excluded. The laboratory data included an increased level of troponin I (6,405 ng/ml) and CK-MB mass (18,6 ng/ml). The concentration of potassium (K+) was within the limits (4 mmol/l).

Eight days after admission the patient underwent an implantation of a cardioverter-defibrillator (ICD-VR) as a secondary prevention of sudden cardiac death.

Conclusions

It is known that pyrethroids may have an impact on cardiac cells, leading to tachycardia, chest pain, hyper- or hypotension or conduction disturbance. Additionally, a case of atrial fibrillation after inhalation of cypermethrin has been previously documented. Therefore, we speculate that the toxicity of cypermethrin may have been a possible trigger of the ventricular fibrillation.

On the other hand, the patient was previously diagnosed with hypertension and had a history of aortic stenosis, which may have caused the increase of the myocardial muscle mass. As expected, both the ECG and the TTE revealed that the patient had left ventricular hypertrophy (LVH). Due to the fact that patients with LVH are prone to the occurrence of ventricular and supraventricular arrythmias, this explanation should be revised.

Indeed, left ventricular hypertrophy may have been the cause of the ventricular fibrillation. However, pyrethroids can affect cardiac cells. What is more, a two-year observation of the patient after ICD-VR implantation revealed no cardiac arrythmias. Therefore, the effect of the inhalation of cypermethrin should be taken into account.

Eosinophilia during omalizumab treatment of severe allergic asthma

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Introduction

Omalizumab is a recombinant humanized IgG1 monoclonal antibody against IgE - an immunoglobulin which plays an important role in the pathophysiology of allergic diseases. It should be considered as a treatment for patients with moderate-to-severe, uncontrolled asthma, who meet the eligibility criteria.

Case report:

We report a case of a 46-year old, non-smoking woman, treated for 18 years for severe, allergic asthma associated with chronic sinusitis. She underwent bilateral ethmoidectomy in 2013 and the cataract surgery in 2010. Since 2007, she has been receiving oral glucocorticosteroid treatment. During numerous exacerbations (5-6 times a year), the intake of the GKS was periodically increased. In 2014, she was qualified for biological treatment with omalizumab. The effectiveness of the therapy was assessed after 16 and 52 weeks. Control visits revealed improvement in pulmonary function and a decrease of symptoms of asthma, as assessed by respective questionnaires (ACQ and AQLQ). Moreover, the dose of oral GKS was reduced. Despite the good clinical response to the treatment, blood eosinophilia reminded high (810/μl). In the fifth month of treatment with omalizumab, the patient presented with a symmetrical pink macular erythematous rash, localised on the posterior parts of the lower extremities. No nodules and ascites were observed. The patient did not report any other symptoms. Due to a sustained high level of eosinophils and skin lesions, further diagnostic procedures were necessary. C-reactive protein level was normal, serum testing for antinuclear antibodies (ANA-screen), pANCA and cANCA was negative. The histopathological examination of skin biopsy samples revealedcapillaritis chronica and the patient was successfully treated with sulodexide (Vessel Due). The treatment with omalizumab was continued.

Conclusions

The decrease in the peripheral blood and induced sputum eosinophil count following treatment of severe allergic asthma with omalizumab has been well documented. In the reported case, blood eosinophil count remained high despite the clinical efficacy of the treatment. Considering the concomitance of severe, uncontrolled asthma, sinusitis and skin lesions, eosinophilic granulomatosis with polyangiitis (EGPA) was also considered as the underlying cause of the symptoms. The disorder manifests as an exacerbation of asthma and vasculitis that can affect many organs, including skin. Skin manifestations presented by our patient strongly resembled those in the course of EGPA. However, the patient met only 2 out of 6 criteria needed to identify the disease. Further histopathological examination revealed capilaritis chronica, thereby excluding EGPA. Capilaritis is an entity that includes inflammation of superficial blood vessels, that is often asymptomatic or with associated pruritus. Supposedly, eosinophilia and skin manifestation may have been caused by the decrease in dose of GKS due to the omalizumab treatment.

Acute promyelocytic leukemia with complications in 29-year-old man

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Introduction

Acute promyelocytic leukemia (APL) a subtype of acute myelogenous leukemia (AML) is a bone marrow malignancy accounting for approximately 10-15% of AML cases. The hallmark of APL is the chromosomal translocation t(15;17) which usually occurs in adults younger than 40 years old. The bleeding diathesis is attributed to disseminated intravascular coagulation (DIC), initiated by the release of procoagulant activity from leukemic cells.

Case report:

A 29-year-old man was admitted to the Haematology Department in Copernicus Memorial Hospital in Lodz because of pancytopenia. He was diagnosed with APL and induction treatment (AIDA regimen- all-trans retinoid acid with idarubicine) was administered from the day of diagnosis. The abdominal pain occurred 10 days after the end of first therapy cycle. The CT revealed acute appendicitis which was successfully operated on. However due to persistent CRP elevation with coexisting pancytopenia vancomycin was added to the therapy. The chest X-ray was performed because of appearance of dyspnea and atelectatic-inflammatory lesions in the respiratory fields were detected suggesting pulmonary inflammation. Significant bone marrow aplasia appeared in 14 day after chemotherapy with co-existing hipoalbuminemia, elevated CRP and elevated procalcytonine. The patient received G-CSF, albumins, KKP, PRBC, fluid therapy. The patient was also diagnosed with exudative peritoneal inflammation treated with drainage and wide-spectrum antibiotherapy. The symptoms and physical examination indicated ileus. In the CT scan of the abdomen megacolon toxicum was described. Parenteral nutrition was implemented and due to the serious clinical state the patient was transferred to the Intensive Care Unit. The progressing respiratory insufficiency and epistaxis occurred. He required assisted ventilation therapy ,received blood derivatives, further antibiotic therapy, fluid therapy and intravenous infusions of catechol amins. The patient was diagnosed with co-existing pseudomembranous enteritis but the symptomatic treatment failed. The hemicolectomy with an artificial temporary stoma was performed. Because of prolonged bleeding the abdominal packing was remained, the wound was healing properly and the patient was extubated. After haematologic consultation the maintenance treatment with Vesanoid/Tretinoin was implemented. The cardiovascularly and respiratorily stable patient was transferred to the Haematology Department 9 days after surgery. According to myelogram, first complete remission (CR1) was exposed. The medical council decided to postpone consolidation therapy with ATRA and As203 and the patient was discharged from the hospital.

Conclusions

Over recent years, advances have been made in the field of treatment of acute promyelocytic leukemia, due to introducing elective treatment ATRA i ATO. From cancer with a rapid course and high mortality, early APL has become a disease with very high curability (70-80%).

A patient with occlusion of the LAD coronary artery.

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Introduction

De Winter syndrome is an uncommon electrocardiographic manifestation of acute occlusion in the proximal segment of the left anterior descending artery (LAD). It is characterized by exceptional electrocardiogram (ECG) pattern that includes ST-segment depression at the J point, tall, symmetrically peaked T waves in the precordial leads and ST-segment elevation in the aVR lead.

Case report:

55-year-old man was admitted to the hospital with typical chest pain and angina. Symptoms were observed since a day before with escalating at night. The patient had a past medical history of anterior wall acute myocardial infarction treated with streptokinase (08.2004), percutaneous coronary intervention (PCI) with implantation stent in the middle left circumflex artery (LCx) (10.2004), PCI on LAD (12.2009) and ST-Segment Elevation Myocardial Infarction (STEMI) treated with PCI on LAD with implantation stent (09.2013). The patient suffered from hypertension, mixed dyslipidemia, and nicotinism. Admission electrocardiogram (ECG) revealed ST-segment depression in leads I, II, III, aVF, and V2-6 with tall, symmetrical T-waves in leads V2-5. Further, lead aVR showed ST-segment elevation. Troponin on admission was negative, but the next obtained samples were significantly elevated. Due to the general clinical condition, the patient was diagnosed with acute coronary syndrome: myocardial infarction with ST-segment elevation. It was decided to perform a coronary angiography that showed disseminated atherosclerosis with almost total occlusion of LAD. Successful coronary angioplasty was done using a drug-eluting stent. Post-procedure ECG substantially improved. On the 7th postoperative day, the patient reported a recurrence of the chest pain. Repeated coronary angiography revealed recently formed thrombus in a previously stented segment. The emergency intervention was done and coronary flow was restored. Echocardiographic examination revealed left ventricular contractility impairment with the deterioration of left ventricular ejection fraction (LVEF). After 14 days long hospitalization the patient was discharged home in good condition.

Conclusions

Clinicians should be alert to patients presenting chest pain and characteristic ECG changes that are not typical of STEMI. Failure to recognize de Winter syndrome may lead to undertreatment and delay in reperfusion therapy with catastrophic results.

Therapeutic challenges of HLH in the course of angioimmunoblastic lymphoma

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Introduction

Hemophagocytic lymphohistiocytosis (HLH) is a serious disease caused by hyperinflammation. It may develop due to genetic abnormalities, infection, autoimmune disorders or malignancies. It can occur as the first manifestation of disease. Due to the non-specific symptoms, HLH is underdiagnosed.

Case report:

A 37-year-old man admitted due to the fever, weakness, abdominal pain and peripheral oedema. CT and blood count examination showed hepatosplenomegaly, ascites and pancytopenia. Steroid therapy was included and the axillary lymph node was taken. Histopathological examination revealed changes after steroid therapy that caused the material was non-diagnostic. Laboratory test revealed elevated ferritin (14998ng/ml ref.=10-150), hypertriglyceridemia and hypofibrinogenemia. CT scan showed fluid in peritoneum cavity and hepatosplenomegaly. In the bone marrow examination hemophagocytosis and TCR-G rearrangement was detected. According to the Histiocyte Society guidelines, six of the eight diagnostic criteria was fulfilled for diagnosis HLH. Therapy based on the HLH-2004 protocol was introduced. Splenectomy was performed. In histopathology we found angioimmunoblastic lymphoma. Chemotherapy in the CHOP protocol was introduced. Between the next series of CHOP, severity of symptoms HLH were observed: fever, oedema, hepatomegaly. After five cycles of CHOEP refractory was confirm and the second line therapy: 2x ESHAP was introduced. PET/CT scan revealed disease metabolic active lesions in bone marrow, liver, lymph nodes and omentum. After 1x IVE chemotherapy the patient died due to multiorgan failure.

Conclusions

HLH is mortal condition and may be undiagnosed due to non-specific clinical manifestation. Clinicians should be alert to patients presenting fever of unknown origin with pancytopenia, hyperferritinemia, hypertriglyceridemia who are not responding for antibiotics. When HLH is confirmed it should be performed diagnostics for infection, autoimmune disease and malignancy. The treatment of HLH is difficult and often leads to death, even if was carried out correctly.

Empagliflozin - where cardiologists and diabetologists cross their paths

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Introduction

The empagliflozin belongs to the group of SGLT2 inhibitors. Its primary function entails the selective inhibition of sodium glucose cotransporter 2 (SGLT2), which plays a crucial role in glucose reabsorption from glomerular filtrate. The SGLT2 inhibition increases glucosuria lowering the glucose concentration in blood. Thanks to these properties, SGLT2 inhibitors are used in pharmacotherapy of type 2 diabetes. In recent years, a new property of SGLT2 inhibitors has been discovered. The research project EMPA-REG OUTCOME conducted in 2016 demonstrated that empagliflozin significantly reduces the hospitalization rates among patients suffering from heart failure (HF) and decreases the incidence of an acute HF.

Case report:

A 56-year-old man was hospitalized due to worsening HF. In the past he had 3 HF hospitalizations and he suffered from: moderate aortic stenosis, chronic coronary disease – post-myocardial infarction with ST-elevation, diabetes mellitus type 2, mixed hyperlipidemia, paroxysmal atrial fibrillation, obesity–BMI 40.56. Over the course of the treatment, the patient was administered a standard therapy for heart failure with reduced ejection fraction (HFrEF). Once the patient recovered, he was prescribed outpatient treatment consisting of standard HF therapy and empaglifozin. Six month later, the patient was hospitalized again due to a renewed HF. This time the man was administered the standard therapy for HFrEF in conjunction with sacubitril/valsartan. During the treatment, his condition was satisfactory and no rehospitalization was required for over a year. The third hospitalization and aggravation of the HF resulted from the respiratory tract infection. Once the antibiotic and intravenous diuretic treatment were administered, the patient's condition improved. The treatment entailing empagliflozin was discontinued. Three months later, during the check-up, a subsequent hospitalization was required. The patient was readmitted to the hospital and a full therapy for HFrEF was administered, together with diuretics and levosimendan infusion, inducing a significant improvement in patient's condition. Subsequently, in terms of outpatient treatment, ivabradine was prescribed and empagliflozin intake was resumed. Then, the patient has not been rehospitalized for 9 months

Conclusions

1.The period between exacerbations of HF with treatment entailing empagliflozin lasted longer (6 months) than in the absence of the drug (3 months) despite the use of optimal HFrEF therapy with sacubitril/valsartan combination.

2.If empagliflozin and sacubitril/valsartan therapy was continued, no exacerbation of HF was observed for over a year, and then for 9 months after another relapse, which is a relatively long period.

Since this is the only observation, it is too early to draw any far-reaching conclusions. However, further studies on the benefits of empagliflozin therapy in HF, especially with sacubitril/valsartan combination can be promising.

The role of transthoracic lung ultrasound in the diagnosis and monitoring of the patient with mixed connective tissue disease with acute respiratory failure.

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Introduction

Patients with diagnosed systemic connective tissue disease in extreme cases develop acute respiratory failure. Transthoracic lung ultrasound (TLUS) is a non-invasive method used to diagnose and monitor its causes.

Case report:

A 33-year-old woman, burdened with a mixed connective tissue disease, was admitted to the Clinic due to acute respiratory failure and exacerbation of the underlying disease. At the reception there were: fever, resting dyspnoea, dry cough, pleural pains. Laboratory tests revealed high exponents of inflammation and high levels of dimer-D. Nephrotic syndrome and features of respiratory failure in arterial-blood gas test were found. Chest X-ray revealed bilateral inflammatory changes. In the TLUS study: consolidations with dynamic air bronchogram with visible vascular amputation in the Doppler option. This indicates pulmonary embolism complicated by pneumonia. Diagnosis was confirmed using angio-Computed Tomography (angio-CT). The treatment with antibiotics and low-molecular-weight heparin in the therapeutic dose was initiated. An improvement in the clinical condition was achieved. On the 10th day of hospitalization, the clinical condition deteriorated: worsening of breathlessness, relapse of fever, increase of CRP level. The TLUS study showed the presence of pulmonary abscesses. After obtaining the result of bacteriological examination, antibiotic therapy was modified, improving the clinical condition and regression of pulmonary changes. In a follow-up examination of the TLUS performed 1 month after hospitalization, a further regression of pulmonary changes was observed, with a stable general condition.

Conclusions

Many pathologies in the lungs can be observed in ultrasonography, some with a similar frequency as in more advanced methods such as CT. Transthoracic lung ultrasound has many advantages that are useful during diagnostics as well as during monitoring of treatment of many pathological states. It allows to detect the causes of the patient's deterioration without exposure to harmful ionizing radiation. It is also a cheap method. In addition, it can be used repeatedly, even every day, in the ward without the need for transport the patient to the radiology department. All of these can improve the course of treatment and shorten the time of hospitalization of patients.

CASE STUDY
PEDIATRICS

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Acute Hepatitis B and unusual follow up in a 16-year old boy - a case report

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Background

After the introduction of routine vaccination against hepatitis B for all infants in Poland (1994-1996), the incidence of hepatitis B decreased significantly and nowadays cases among children are very rare.

Case report

On December 28, 2016, a 16-year-old boy from Ukraine was admitted to the Department of Children's Infectious Diseases in Warsaw due to jaundice, general weakness, diarrhea, and vomiting. The boy has lived in Poland for 1.5 years, working (learning) as a hairdresser. He had a tattoo made at home 6 months ago, he cut his finger with scissors during work 6 weeks earlier, and during the last 6 months had two heterosexual contacts, both secured. He was vaccinated in Ukraine, but not against hepatitis B. He negated the dietary error, he never had a blood transfusion or surgery. He was once hospitalized due to acute gastroenteritis (in Ukraine). The physical examination revealed jaundice, hepatomegaly (2 cm below the rib arch), a tattoo on the right forearm. Laboratory tests showed a significantly elevated level of aminotransferases (ALT 2439 IU/L; AST 1418 IU/L), bilirubin (110.2 μmol/L), GGTP (131 IU/L). Serological testing was positive for HbsAg and anti-HBc IgM, and negative for HAV, HCV, and HIV infection. Acute hepatitis B was diagnosed and the patient was treated conservatively. During observation, hepatic parameters were firstly elevating (ALT to 2818 IU/L; AST to 1427 IU/L), but after 23 days these parameters improved (ALT 661 IU/L; AST 125 IU/L) and he was discharged home, with the recommendation to appear at the ward to perform follow-up examinations after 6 months (in order to exclude chronic hepatitis B). The patient reported again only after 15 months. Hepatic parameters were normal, testing towards HBV was negative and chronic hepatitis B was excluded. The extended interview revealed urinary tract infection a year ago and unprotected sexual contacts, both homo- and heterosexual. During physical examination a small ulcer around his anus was noticed.Thus, additional tests for HIV and syphilis were ordered, which were positive only for syphilis. The patient applied for treatment to the Clinic of Dermatology and Venereology in Warsaw.

Conclusions

HBV infection is still possible in non-vaccinated people. Prophylaxis in immigrants should be intensified (every person staying in Poland for over 3 months is covered by the Polish vaccination program). It is important to deepen the epidemiological interview in teenagers towards sexually transmitted diseases.

Inferior orbital wall fracture – presentation of a case with an unusual course

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Introduction

Presentation of a case with an unusual course - among patients with inferior orbital wall fracture, incorrect eye movement and vertical strabismus are the most common complications. Our patient presented traumatic optic neuropathy.

Case report

The patient is a 7 year old girl, who got hit in the left eye area by the steering wheel of a scooter. She was hospitalized in the surgery ward due to the presence of general symptoms.

Head computed tomography was performed, showing multiple bone fractures of left maxillary sinus and left eye socket. Ophthalmological consultation showed correct mobility of the eyeball, relative afferent pupillary defect (RAPD) and very low visual acuity (0,04).

Anterior segment examination and fundus examination of the left eye showed no abnormalities. VEP (visual evoked potentials) test was performed - the results were incorrect.

Based on the results presented above, the patient was diagnosed with optic neuropathy. MR examination was performed showing no abnormalities in the area of the optic canal and the nerve II itself. A consultation of neurosurgeons and ophthalmologists was held, with decision not to perform surgical nor conservative treatement. Follow – up consultations showed left eye vision improvement.

Conclusions

Traumatic optic neuropathy (TON) is a rare, but serious condition, that can lead to permanent decreased vision or blindness in affected eye. In literature there are presented three options of treatement – farmacological – high doses of intravenous given corticosteroids, surgical – optic canal decompression or observation. However, there are no standards of treatement of TON, and every patient should be considered individually based on clinical presentation.

1. Traumatic optic neuropathy should be always considered in differential diagnosis among patients with decreased vision suffering from head trauma.
2. There is a relatively high rate of spontaneous visual recovery among patients managed conservatively or untreated.
3. The choice of treatment method should not be affected by pressure from the patient or their legal guardian to perform more active procedures.

Immunodeficiency disorders in an 8-month-old infant

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Introduction

The most common cause of HIV infection in children is the vertical transmission, which comprises 90% of cases. The important factor of the infection is mother's high viremia, which can be prevented by administration of antiretroviral therapy. Vertical HIV infection in children does not generate defects and the symptoms observed are often nonspecific.

Case report

The 8-month-old infant was admitted to the Department of Infectious Diseases and Child Neurology in Poznań due to the suspicion of parasitic infection with *Toxocara sp*with eye involvement. Upon admission, the child presented symptoms of severe pneumonia. The girl had fits of choking cough and incessant breathlessness. In the 13th week of life, interstitial pneumonitis of unknown aetiology was diagnosed. In the 15th week of life, the neurologist diagnosed cerebral palsy of the spastic type. MRI showed atrophic changes in the central nervous system caused by hypoxia or recent infection. In the 7th month of life, the girl was hospitalized because of petechiae appearing all over her body. Laboratory tests revealed anemia and thrombocytopenia. At admission, due to increased dyspnea, a lung X-ray was performed. Parenchymatous pulp compresses in both lungs were described, with the increased opacification (whiteness). Analysis of the earlier course of the disease indicated the presence of immune disorders, therefore the diagnostics were implemented and the presence of anti-HIV antibodies was proven. In the following days, the child's condition deteriorated, and respiratory failure occured. In the examination of tracheal aspirate, *Pneumocystis jirovec*iand *Candida albicans*were confirmed. The co-infection of CMV and HIV was confirmed by PCR. Intensive anti-inflammatory therapy (antibiotic and antiviral) was implemented. At the same time, three-drug antiretroviral therapy was implemented. Since the 18th day of hospitalization a sudden drop in the level of leukocytes and plateles was found. On the 25th day of hospitalization, the child died as a result of cardiac arrest. The reason for this was:sepsis, immunoreconstruction or drug-related complications.

Conclusions

The risk of vertical HIV infection with the absence of antiretroviral therapy is estimated at 15-30%. Screening pregnant patients for HIV infection would allow effective identification of patients and implementation of the therapy, thus giving children a chance to grow without the risk of developing an illness. Proper prophylaxis of infection allows to reduce the average risk to <1%. Diagnosis of immune deficiencies in children caused by HIV infection due to the lack of specific clinical symptoms is a great challenge for a pediatrician.

A Case Report of Gaucher's disease in 2-year old patient

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Introduction

Gaucher's disease is one of the lysosomal storage diseases caused by biallelic mutation in GBA. This disorder is caused by hereditary deficiency of the enzyme glucocerebrosidase results in accumulation of one of the sphingolipids – glucocerebroside in cells, especially macrophages. Because of the wide spread of macrophages in human body, many tissues and organs may by affected, therefore many different symptoms can occur. Hepatosplenomegaly, hypersplenism, cirrhosis, pancytopenia, joint and bone pain, neurological symptoms and osteoporosis create the picture of the disease. There are four clinical subtypes of Gaucher's disease distinguished on the basis of symptoms.

Case report

In April 2016 a 2- year old girl was admitted to the Clinic of Marrow Transplantation, Oncology and Hematology in Childhood in Wroclaw because of splenomegaly and thrombocytopenia. In the physical examination an enlarged spleen was confirmed, leading to the decision to perform abdomen ultrasonography. Doppler ultrasonography revealed splenomegaly – bipolar spleen size up to 13 cm, which was confirmed by abdominal CT scan – bipolar spleen size up to 16 cm. Additionally many other examinations were performed: morphology – thrombocytes lowered to 60 000/mm^3, hemoglobin lowered to 10,2 g/dl and hematocrit lowered to 31,2%. Other parameters were within a normal range. The results of biochemical and immunological tests as well as a bone marrow smear and serological investigation of viruses revealed no deviations. Because of the unknown origin of these symptoms and suspicion of Gaucher's disease (type 1) blood samples were sent to the Metabolic Department of Pediatrics UMC in Hamburg in order to examine the level of glucocerebrosidase in leukocytes. The test confirmed deficiency of glucocerebroside.

Conclusions

Gaucher's disease is highly rare disease, especially among children. Because of nonspecific symptoms the diagnosis is never easy and requires experience. Nowadays, due to enzyme replacement therapy (ERT), the prognosis has improved significantly. Children and adults with this disease can live as long as others, provided quick diagnosis. That is the reason why it is important to take Gaucher's disease into account during the differential diagnosis of such symptoms as hepatosplenomegaly, anemia or thrombocytopenia.

How much can uncooperative parents impair the proper treatment of their child: a case report

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Background

Autism spectrum disorder (ASD) is a group of heterogenic neurodevelopment disorders, affecting mainly boys. Up to 1,5% of population suffers from it. Symptoms include impairments in communication and social interactions and restricted, repetitive patterns of behavior. To achieve the highest possible level of functioning these patients often require special care during childhood, such as behavioral treatments.

Bipolar disorder (BD), which is characterized by experiencing depressive episodes and at least one hypomanic episode during the lifetime, is estimated to be comorbid with ASD in 20% of patients. The diagnosis is harder to make than in general population due to limited understanding of emotions and communication difficulties in patients with ASD. Furthermore, these patients often present an unusual set of symptoms, which makes the process of differentiating even harder.

Case report

We present a case report of an 11-year old boy with a diagnosis of autism, admitted to the Childhood Psychiatric Unit due to severe irritability, decreased need for sleep, increased activity, racing thoughts and decreased appetite. A hypomanic episode was suspected. It was the boy's second admission to the Psychiatric Unit in less than 3 months.

On admission the patient received diazepam, risperidone and zuclopenthixol and the symptoms decreased significantly. While in the hospital he experienced fits of rage, during which he was running, screaming and hurting himself. He calmed down when his attention was redirected – the best way to do so was by walking back and forth while holding his hand.

After three weeks in the unit the patient's behavior has improved significantly. While dealing with medical personnel he was calm, collected and polite. Unfortunately, he seemed to react badly to his father's presence – when the fits of rage occurred while his father visited the patient could not calm down. The possible reason for that was the fact that during these fits the father asked the patient again and again why he is like that – and was not trying to redirect his attention. Furthermore, while the boy was calm his father was not paying him any attention – usually he read by himself. So, the fits served as a way of communicating and building an unhealthy bond.

The patient was discharged after 6 weeks of hospitalization, but he is expected to return due to the parents' unwillingness to cooperate.

Conclusions

In every treatment the goal is not only to prescribe the right medication and therapy, but also to convince the patient to undergo such treatment fully. While dealing with children the case is even trickier – the doctors must have the children's parents on their side. In this case, unfortunately, the parents seemed to not believe that anything can help improve their son's health – and in consequence refused to try.

Successful pre-emptive alloHSCT - new possibilities in Ataxia-telangiectasia

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Introduction

Ataxia telangiectasia (A-T) is a primary immunodeficiency characterized by a broad clinical spectrum. Cerebellar ataxia, its main symptom, usually occurs in the first years of life. It's the matter of discussion whether pre-emptive allogenic hematopoietic stem cell transplantation (alloHSCT) is an option to restore immune competence, prevent malignancy and delay or reduce symptoms intensity.

We present the course of the disease, including immune-reconstruction following pre-emptive alloHSCT in a 1-year old girl with A-T on a 6 year follow-up.

Case report

Twelve months old girl with severe combined immune deficiency was qualified to an alloHSCT. At admission in a good condition, with an angioma in preauricular area and single discolored hairs. Due to chromosomes fragility, the patient underwent reduced intensity conditioning followed by HSCT. 14 days later follicular rush was observed (aGvHD I° suspicion). Solu-Medrol was administered and after 2-3 days the lesions subsided. Initially a mixed donor chimerism was found. Because of hypogammaglobulinemia, human Ig infusions were implemented and continued till the age of 5, when were no longer needed due to the reconstitution of the B-cells.

GvHD III° reoccurred after 3 months - Medrol was administered, gradually relieving symptoms. A-T syndrome was diagnosed at the age of 3. At the age of 3 8/12 in a control NMR slight cerebellar atrophy was described.

In the control examination at the age of 4 marbling of the skin on the upper extremities with blood circulation disorders were found. Since the age of 6 the girl has started individually scheduled vaccinations.

At present the patient is under multidisciplinary care. At the age of 6 in the physical examination: hypopigmented macules, slightly lower muscle tone, faulty posture, unclear speech with improvement after rehabilitation, episodical URTI.

At the age of 6.5 exercise tolerance is normal, the girl remains active: horse riding, swimming. She is still intensively rehabilitated.

Conclusions

Successful engraftment that restored the immune system and delay ataxia in *Atm*-deficient girl has been presented. This case is one of few reports available on A-T patients undergoing successful alloHSCT. The transplantation seemed to have no negative impact on patient's development, moreover both growth and weight were between 10th-25th percentile. In conclusion pre-emptive alloHSCT needs to be further investigated in order to become early treatment of choice in some A-T patients.

Long-term immunosuppressive therapy of the nephrotic syndrome and the resulting risks.

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Introduction:

A steroido-dependent nephrotic syndrome is characterized by at least two recurrences in the period of reducing the doses and usually concerns children in 30-50%. The tough course of this disease should be controlled, especially in children, by steroids, cyclosporine A and Mycophenolate mofetil. The literature and medical research have revealed a few reports about complications following such a combined therapy. They are the effect of increased prolificacy of tumour cells. However, the carcinogenesis is more frequent after organic transplants.

Case report:

We would like to present the case of a patient, suffering from a severe nephrotic syndrome. He was diagnosed at the age of 3 and since then he has been under the close care of nephrologists and pediatricians. Progress of the disease is clearly documented in data, collected from 2000 . Then, intensification of the thearpy was introduced and the additional Mycophenolate mofetil was given.

The theraphy, from the very beginning has developed a lot of side effects. There were also difficulties with the compliance, the adolescent patient didn't turn up for appointments and wasn't conscientious with the medications. Patient neglected his diet and doctor's recommendations while staying at the orphanage.

The last nephrologist's consultation was at the age of 18. One year after, he came to urologist with a hematocyturia symptoms. Ultrasonography examination has shown the tumor on a posterior wall of urinary bladder. The doctor gave DILO cart, however the patient refused to undergo further diagnostics. From November 2018, he came back to nephrological clinic and is willing to continue the examinations and treatment. There was a significant loss of weight since last the appointment, 35 kg. Cystoscopywith a section of a bladder for a histopatological examination, revealed a non-infiltrating papilary urothelial neoplasm of low malignant potential.

Conclusions:

Based on the presented medical case, it could be possible that long-term immunosuppressive therapy caused the carcinogenesis in urinary bladder. In addition, uncertain living situation and non - compliance with specialists make the diagnostic and medical treatment difficult.

Recurrent, paroxysmal abdominal pain as an early symptom of paroxysmal nocturnal hemoglobinuria in a child

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Introduction

Paroxysmal nocturnal hemoglobinuria (PNH) is an extremely rare disease in children, acquired clonal hematopoietic stem cell disorder due to the somatic mutation of the PIGA gene. As a consequence, there is a clonal and non-cancerous expansion of mutated cells, which leads to a deficiency of surface proteins, e.g. responsible for protecting the body's own cells from the complement system. It is characterized by intravascular hemolysis, various degrees of bone marrow failure and a tendency to venous and arterial thrombosis, especially visceral vessels.

Case report

Currently, a 16-year-old boy, from 2014 complained about a seasonally recurrent, very severe spasmic abdominal pains occurring in spring and autumn. For this reason, he was repeatedly hospitalized in many hospitals, and finally, from November 2016, he was under the care of a specialized pediatric gastroenterology department. Repeated gastroscopy and colonoscopy were normal. The capsule endoscopy showed ulceration on the unchanged mucous membrane of the initial jejunum segment. CT scan of abdominal cavity revealed inflammatory changes in the jejunum. In repeated abdominal USG examination in the period of pain severity, thick wall of the small intestine with a variable location was found. Despite many tests and various treatment attempts, with antibiotics and glucocorticoids, it was impossible to determine the cause of the disease. The second examination of MR angiography performed in 2018, revealed the deposition of hemoglobin breakdown products in the kidneys and the manifestation of hemolytic anemia with unconjugated hyperbilirubinaemia, reticulocytosis and reduction of platelet count and desreased haptoglobin concentration, as well as erythroid hyperplasia revealed in bone marrow examination directed diagnostics. In January 2018, the patient was transferred to the hematological department, where the diagnosis of PNH confirmed by fluorocytometry was established during the differential diagnosis of causes of intravascular hemolysis. The presence of a PNH clone in erythrocytes was revealed, but above all in 93.8% neutrophils type III with a complete lack of GPI. Currently, the boy is being treated with eculizumab. No episodes of hemolysis were observed during the therapy, and after 2 months a constant biochemical remission was obtained. The infection, in February 2019 caused an increase in the level of LDH and bilirubin, however, without clinical features of the disease. After the next dose of eculizumab, the biochemical remission returned.

Conclusions

Regardless of the rarity of the disease, in children with paroxysmal abdominal pains with comorbid dark urine and anemia and/or thrombocytopenia, especially with severe hemolysis (high LDH and bilirubin level, and low or undetectable haptoglobins), PNH should also be considered in the differential diagnosis.

Wide variety of symptoms in patients with Smith-Magenis syndrome

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Introduction

Smith–Magenis syndrome (SMS) is a complex, highly variable, congenital disorder with an estimated prevalence of 1 in 25 000 live births. It is caused by a microdeletion of chromosome 17p11.2 containing the retinoic acid-induced 1 (RAI1) gene. MSM is characterized by a pattern of behavioral and cognitive problems as well as congenital abnormalities. The major features include mild to moderate intellectual disability, speech and motor delays, sleep disturbances, craniofacial and skeletal anomalies and behavioral problems. Moreover, systemic features such as cardiac, thyroid and renal defects, seizures, eye abnormalities and signs of peripheral neuropathy are also observed.

Case report

A girl was born at full term by cesarean section with a birth weight of 4100g and intrauterine pneumonia. Poor suckling reflex and feeding difficulties were observed since the first days of life. The newborn was discharged from hospital after 14 days with weight 3850g. At 7 weeks of age she was hospitalized due to failure to thrive, decreased appetite, regurgitation and dehydration. The weight on admission was 3600g. Dysmorphic facial features including broad square-shaped facial appearance, prominent forehead, down-turned upper lip, broad nasal bridge, hypertelorism also 2/3 toes syndactyly and left lower limb reduction was observed. Laboratory results revealed hypertransaminasemia. pH-metry confirmed gastroesophageal reflux disease. Moreover, child was hospitalized several times due to recurrent urinary tract infections and sepsis caused by Salmonella. Abdominal ultrasonography revealed bilateral pelvicalyceal system dilatation. At renal scintigraphy there was post-inflammatory changes, bilateral pelvicalyceal system dilatation and normal kidney function. Voiding cystourethrography showed grade IV left and grade III right vesicoureteral reflux. At the age of 2-and-half endoscopic injection of VUR was performed. SMS was confirmed by genetic test. The treatment of SMS is long-term follow-up. The girl needs regular medical checks including eye examinations, hearing checks, heart and kidney investigations and evaluations for thyroid function and scoliosis.

Conclusions

1) The case shows various signs and symptoms of SMS at the first years of life.
2) Many of the features that appear in the SMS may occur in other genetic syndromes, which may cause diagnostic difficulties.
3) Management of SMS is a clinical challenge because requires multidisciplinary approach.

Monogenic diabetes MODY2 - case report

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Introduction

In recent years there is an increasing morbidity of diabetes. Accessibility to genetic tests quickly allows the diagnosis of different types of diabetes. Maturity onset diabetes of the young (MODY) is a rare type of diabetes that constitutes about 2 % of all diabetes cases. It is a very tricky type of diabetes which appears at a young age (typical for type 1 diabetes), but develops slowly and has clinical signs of type 2 diabetes and only genetic tests allow confirmation of the diagnosis.

Case report

A 2-year-old female was admitted to the hospital on 26th of February, 2007 because of hyperglycemia 130 mg/dL fasting and repetitive infections. Clinical examinations did not reveal any abnormalities, except of heart murmur. In family history, the mother of the proband suffered from gestational diabetes two times. Proband's grandmother has diabetes as well. Laboratory investigations revealed: negative anti- GAD, anti-IA2, ICA, hyperglycemia in OGTT, HbA1c-6,1% and higher levels of fastingblood glucose. Urine test was with no departures – there were no signs of glucose, proteins and ketone bodies. Genetic tests confirmed MODY2 Diabetes. Since 2007 to this day this girl has normal BMI index. Currently this patient is treated with heathy diet restricting monosaccharides.

Conclusions

Some children with MODY are misdiagnosed with type 1 or 2 diabetes. Patients with family history burdened by diabetes, atypical course of disease which seems to be a mixed form of two types of diabetes should always be considered as candidates for broaden genetic diagnosis. Nowadays due to molecular and genetic tests we can verify diagnosis and identify other family members with MODY diabetes. Proper diagnosis also results in better treatment and clinical observation of other family members in respect of diabetes. Moreover complications in MODY2 are much less serious than in diabetes type 1, which gives more psychical comfort to children and their parents.

A 12-year-old Male with rare adrenocortical carcinoma

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INTRODUCTION

Adrenocortical carcinoma (ACC) is a rare tumor with poor prognosis, originating from adrenal's external cells. In children's population ACC compose just 0.29% of all child's tumors and 1.3-1.6% of all epithelial cancers. It is usually recognized before 5 year of age and more often in females.

CASE REPORT

A 12-year-old male was admitted to a hospital on October 25th, 2018 because of abdominal pain, loose stools and high level of liver tests. On examination he had acne on the face, pale skin, excessive pubic hair, palpable resistance under right costal arch about 6 cm, swelling on shank and scrotum. Laboratory investigation revealed high levels of liver tests, CRP. It also revealed high levels of adrenal hormones - cortisol, androstenedione and DHEAS. Imaging study (USG, CT, NMR) showed mass in right part of abdomen 24x16x12cm, well vascularized, nonhomogeneous without any calcifications. ECHO showed a cancerous mass in VCI and in the right atrium which did not disturb heart beat. Metastasis to CNS and bone marrow was excluded. Tumor mass biopsy confirmed the diagnosis - ACC. Patient was classified as stage III of ACC due to no signs of metastasis. Patient is treated with increasing doses of mitotane and according to program GPOHMET 97.

CONCLUSIONS

ACC is a rare cancer but has specific symptoms that should be considered in diagnosis of virilization or other clinical manifestations of adrenal hormones disorders. As soon as diagnosis is confirmed, the early and proper treatment can be applied resulting in a improved prognosis.

A 7-year-old female with ovarian germ cells neoplasia

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Introduction

Germ cells neoplasia constitutes about 3-6,3% of all child cancers. In Poland this type of cancer in child's population is recognized from 40 to 90 cases per year. This kind of tumor is more frequent in females. One of the signs is accelerated adolescence, which is endocrinological but also oncological manifestation. In this case cooperation between endocrinologist and oncologist is crucial in order to know in which situation this affliction comes from tumor or hormonal excess/deficit.

Case report

A 7-year-old female was admitted to the hospital on 1st of July 2017 because of increasing and painful mammary glands (glandular construction), appearance of pubic hair and enlargement of labia. Furthermore, in anamnesis – intensified sweating, greasy hair. In clinical examination – discrete face dysmorphia, large circuit of neurocranium (59cm – above 95c) and laun mammary glands T2 in Tanners scale.

Laboratory tests revealed: high levels of β-HCG (26079U/L), α-FP (230,3ng/ml), estradiol and testosterone, LDH – 505U/L, LH – 0.33mIU/ml and FSH- < 0,25 mlU/ml. Abdomen and pelvis MRI showed solid-cystic mass – dimension about 31x26x49 mm – left ovarian tumor. In family history there were not any neoplastic diseases. Patient has undergone surgery – removing left ovary tumor, right ovary tumor, patent urachus and epiploon's lipoma. Histopathological study showed: germinoma, carcinoma embrionale, yolk sac tumor, choriocarcioma and sigmoid lipoma. Patient was treated according to TGM-95 scheme – 4 blocks of VBP. Currently patient is on remission, tumor's markers (β-HCG, α-FP) are stable, there are no signs of metastasis.

Conclusions

Every sign of accelerated adolescence should be considered as a warning sign but not only in respect of endocrinological diseases. It should always be maintained as an oncological alert. Simple laboratory tests of hormones, tumor markers and imaging diagnostic can confirm or disqualify diagnosis. Proper diagnosis quickly enables to deploy adequate treatment which is essential when it comes to oncology. Moreover, faster diagnosis means better prognosis of treatment.

Cerebral sinovenous thrombosis - a challenge for many medical specialities

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Introduction

Paediatric cerebral sinovenous thrombosis (CSVT) is an uncommon but serious neurologic disorder with an estimated prevalence of 1 of 100 000 children per year. Because of its low incidence, presents challenges of diagnosis and treatment. Cerebral sinovenous thrombosis should be considered in any patient with a sudden-onset headache.

Case report

A 7-year-old boy previously diagnosed with type 1 diabetes presented to the Department of Paediatrics and Neurology of Developmental Age Medical University in Katowice with worsening change in vision and headache. Neurologic examination revealed facial nerve palsy on the right side and right-sided hemiparesis. An urgent magnetic resonance imaging (MRI) of the brain showed an appearance consistent with cerebral sinovenous thrombosis. The boy received steroids, antibiotics, heparin and insulin therapy. A follow-up MRI brain scan after 1 month showed partial recanalization. Despite intensive treatment child has been demonstrated to have persistent visual impairment.

Conclusions

In addition, children with type 1 diabetes are vulnerable to varied forms of both acute and chronic or short and long-term complications. This disease is associated with microvascular complications such as neuropathy, nephropathy, retinopathy, and macrovascular complications such as atherosclerosis and stroke. Early intervention is necessary to minimise these complications.

CDH leading to ECMO therapy – a new born case with respiratory distress

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Introduction

Congenital diaphragmatic hernia (CDH) is a life-threating condition which can cause a respiratory distress in patients. Depending on the severity of CDH, different medical interventions are needed. Extracorporeal membrane oxygenation (ECMO) is one of the possibilities to stabilize patient's condition and provide safe background for further treatment.

Case report

A new born female born in 37th week of pregnancy to 26 years old primigravda. She was diagnosed with CDH antanatally. She reached 7 and 8 points in Apgar score in the first and the fifth minute of life, respectively. She was directly admitted to neonatal intensive care unit (NICU). During her stay in NICU, X-ray was performed to evaluate her chest cavity and lungs condition. As described by radiologist, her left lung was totally collapsed due to the presence of bowels which caused her mediasternum shift to the right. Her right lung was perfused. During her second day of life she was intubated due to escalating respiratory distress. Despite that she was deteriorating which was proved by her atrial blood gas. Taking under consideration all aspects, she was found to meet clinical criteria for ECMO therapy. After 5 days the therapy was stopped and the patient was referred to the paediatrics surgery department for CDH repair.

Conclusions

The main aim of that case report was to present CDH as a life-threating condition that can be supported by ECMO. Second point was to describe ECMO as a valuable way of supporting the respiratory system before successful treatment of the underlying disease.

Syncope with seizures – a case only for neurologist? - Acute vasovagal syncopes in a 12 year old boy, case report

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Introduction

Vasovagal syncope is an incident of loss of consciousness due to an insufficient cerebral bloodflow, caused by an abnormality in blood pressure regulation. Stress or prolonged vertical position are considered to be the indirect causes of the onset, which is characterised by an abrupt hypotension frequently accompanied by bradycardia. Though usually only affecting the quality of life of the patient, acute syncopes may proceed with life-threatening asystole.

Case report

12-year old boy was admitted to neurology department due to paroxysmal anomalies appearing with a loss of consciousness, tonic-clonic seizures and emesis. Abnormalities emerged in the circumstances such as stress or lasting vertical position, thus common for vasovagal syncopes. Medical history includes eight paroxysmal abnormalities occurring within time intervals of 1-2 years. Patient was previously hospitalised, yet no anti-epileptic treatment was introduced. Neurological examination showed no anomalies, but as Holter ECG revealed additional ventricular excitations and mid-ventricular conduction disturbances, extended cardiological diagnostics were recommended. Patient was admitted to cardiology department. Laboratory test showed haematological parameters on the lower threshold of the norm. Cardiac stress test on treadmill was attempted, resulting in the loss of consciousness preceding the starting point of the trial, followed by tonic-clonic seizures and emesis, presumably consequent on anxiety reaction. ECG record showed asystole ongoing for over a minute. In the course of the tilt-test patient presented the signs of pre-syncope as verticalization reached 60 degrees, showing rapid improvement on return to the supine position. Patient was diagnosed with acute vasovagal syncopes and qualified for the artificial cardiac stimulator implementation and observation regarding anxiety disorders.

Conclusions

Despite a seemingly benign nature, syncopes may lead to life-threatening condition, thus requiring adequate medical attention. Management of such a patient requires interdisciplinary approach, as the probability of underlying cardiological condition should be taken into consideration. It should also be noted that the emotional state of the patient may influence the results of diagnostic tests or even aggravate the undesirable symptoms, thus posing a threat to the life and well-being of the patient.

When the child changes overnight - a case report of anti-NMDA receptor encephalitis

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Introduction

Anti-NMDA receptor encephalitis is an autoimmune disorder, in which autoantibodies target the NMDA receptors in the brain, leading to their removal from synapses. It is increasingly recognized as the most common form of immune-mediated encephalitis. Diagnostic criteria for autoimmune encephalitis rely on antibody testing and response to immunotherapy. Patients manifest with prominent psychiatric symptoms and, in particular, psychosis in early stage of the disease. Initially described as a disease of young females with ovarian teratomas, anti-NMDA receptor encephalitis has since been identified in males, children, and in the absence of tumors.

Case report

A 13-year-old girl was admitted to the clinic due to an acute incident of visual hallucinations, aggression, temper tantrums and hyperactivity. At the admission, she presented speech disorder, bizarre behavior and impaired attention. Parents reported also insomnia, total lack of appetite, spasms of fingers, difficulty with holding objects in hands. An electroencephalography showed slowed activity over the temporo-occipital leads. No abnormalities were detected in the MRI. There was pleocytosis (10/ul) in the cerebrospinal fluid. Based on the clinical presentation and CSF findings, methylprednisolone was ordered. However, the patient's condition worsened and the result of anti-NMDA receptor antibodies were obtained (1: 2560). Therefore, treatment with intravenous immunoglobulin was started. Because of constant decrease in the level of consciousness of the patient, plasmapheresis was performed. After 5 such treatments, the patient's condition improved significantly.

Conclusions

Acute behavior disorders occur rarely in children and should always be subjected to a meticulous diagnosis. Existing criteria for autoimmune encephalitis rely greatly on antibody testing and response to immunotherapy, which might delay the diagnosis. Early and intensive treatment with corticosteroids, intravenous immunoglobulins and plasmapheresis may result in good outcomes.

From skin abscess to hematopoietic stem cell transplantation. A case report of anaplastic large-cell lymphoma

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Introduction

Anaplastic large-cell lymphoma (ALCL) is a rare disease classified as a type of non-Hodgkin lymphoma, caused by abnormal T cells or less frequently by abnormal null cells hyperplasia. Symptoms differ according to the subtype. It can be systemic and manifest with enlargement of lymph nodes and extranodal tumours or present as a primarily localized cutaneous ALCL with skin ulcers. Among children 90% of ALCL have chromosomal rearrangement affecting *ALK*gene what is a positive prognostic factor.

Case Report

4-year old patient admitted to the hospital due to nodular skin lesion with central ulcer, located on the left forearm. The abnormality started three months earlier as a small red spot and was constantly growing. Previously taken as an abscess, it was incised and treated with antibiotics with no success. The culture of intranodular fluid was negative, therefore histopathological, cytological and microbiological specimens were taken and meropenem was introduced for suspected atypical mycobacteriosis. Having the early histopathological result of myeloid sarcoma, the patient was transferred to the Clinic of Marrow Transplantation, Oncology and Haematology in Childhood. Specialistic procedures revealed *ALK* positive anaplastic large-cell lymphoma of the skin without bone marrow or CUN involvement. It was treated for 4 months using chemotherapy which resulted in remission. Unfortunately, 3 months after the end of the treatment a relapse in multiple lymphatic nodes was diagnosed. Second line chemotherapy was introduced and the decision to perform hematopoietic stem cell transplantation (HSCT) was made. During the donor selection the patient received weekly doses of vinblastine. After conditioning with radiochemiotherapy, HSCT was undertaken using hematopoietic stem cells obtained from a fully-matched unrelated donor. The transplantation was successful. During post-transplant course mucositis of second grade was observed and treated with morphine. Since HSCT no relapse was observed.

Conclusions

Anaplastic large-cell lymphoma, despite being relatively rare disease amongst children, should be taken into consideration during differential diagnosis of many symptoms. Skin lesions caused by ALCL can be misidentified as an infectious disease and inappropriately treated. This may lead to postponement of proper diagnosis, thus cause delayed introduction of chemotherapy, what might increase the possibility of severe complications and worse outcome.

CASE STUDY
SURGERY

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Chronic lumbosacral region pain due to an abdominal aortic aneurysm rupture to the vertebral column

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Introduction:

Lumbosacral region pain is a common condition that occurs in 84% of the adult population. In rare cases it may be caused by abdominal aortic aneurysm (AAA). The average risk of AAA rupture with a diameter of 40-50 mm within 5 years is 3-12%. The most common location (80%) of the rupture is the retroperitoneal space. In rare cases (less than 4%) the bleeding from the ruptured aneurysm is contained by surrounding tissues, classified as CCR-AAA (chronic contained rupture of the abdominal aortic aneurysm), there is no hypotension, the patient's condition may be stable for a long time. Among that kind of ruptures, it can be distinguished a rupture to the spine with erosion of the vertebrae. This is a very rare complication, fewer than 100 such cases have been described so far.

Case report:

The 69-year-old patient has reported pain in the lumbosacral region for 6 months which intensified in the last two weeks. In the CT Angiography approx. 4.5 cm AAA were found, with visible blurred contours of the wall and concomitant invasion in the retroperitoneal space. There were also non-characteristic changes in the lumbar vertebrae. The patient was qualified for surgery. Due to the nonspecific lesions in the spine and the low risk of perioperative death (no serious comorbidities) open surgical repair method was chosen. Intraoperatively, after dissection of the aneurysm sac, a loss of the posterior aortic wall and visible destruction of the lumbar vertebrae was found. A classic vascular prosthesis was sewn into and specimens of the aneurysm wall and retroperitoneal space nodes were retrieved for histopathological analysis. In the specimens, lymph nodes with reactive lesions and hyaline masses with purulent inflammatory infiltration in the fragment of the posterior wall of the aneurysm were found . No complications were observed in the postoperative course.

Discussion and Conclusions:

The causes of lumbosacral pain are not always simple to diagnose. Except for the most frequently ones, the rare cause such as abdominal aortic aneurysm rupture should also be considered. CT/MRI can be helpful in diagnostics, because in addition to assessment of spine issues it also allows to visualize adjacent tissues. The patient experienced chronic bleeding from the aneurysm to the spine, causing erosion of the vertebrae, which may be a life-threatening condition.The patient did not have hypotension, the only symptom of the disease was pain in the lumbar region. The procedure was performed using the open surgical repair method, which according to the latest guidelines is a method with a better long-term prognosis. It also allowed the direct assessment of lesion in the spine and removal of specimens for histopathological examination.

Myxofibrosarcoma - a diagnostic pitfall

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Introduction:

We present the extremely rare case of myxofibrosarcoma (MFS) diagnostic pitfall in the young patient. The result of the primary histopathological examination revealed no malignancy and led to the misdiagnosis of lymphatic edema.

MFS is a rare variant of the malignant fibrous histiocytomas. It is one of the most aggressive types of soft tissue neoplasms. It usually develops in elderly patients predominately in extremities, within the dermis and subcutis. The clinical presentation is not pathognomonic. The histological aspects are highly heterogeneous, frequently delaying the diagnosis or leading to misdiagnosis. Complementary histochemical and immunohistochemical stainings are mandatory to achieve the diagnosis of MFS. MFS can recur locally or metastasize to lungs and bones. Treatment consists of local resection followed by radiotherapy. Chemotherapy may be considered.

Case report:

A 52-year-old male who presented in 2016 with left lower extremity edema and tenderness. Due to recent ski shoe pressure trauma, the patient was referred to orthopedic surgeon and physiotherapy. Edema deteriorated even though compression therapy. The ultrasound examination showed a cystic space filled with fluid. The preliminary diagnosis was necrosis of subcutaneous tissue; the patient underwent surgical debridement. Specimens were sent for histopathological examination which did not reveal any malignant lesions (synovitis chronica). Edema gradually enlarged and within four months a painful lemon-sized mass recurred. Lymphatic vessels damage was suspected, and the patient was referred to the vascular surgeon. A lymphography showed a cavity filled with fluid - a surgical revision and drainage were performed. A cyst was filled with blood and some solid debris, which was removed. Compression therapy combined with lymphatic drainage rehabilitation enabled wound healing. Three weeks postoperatively swelling aggravated. The next debridement was performed-lymphatic vessels were transfixed, and the samples were harvested. The result of the histopathological examination was myxofibrosarcoma (G2 - high grade). There might also be a correlation between Adalimumab therapy from 2013 to 2016 (psoriatic arthritis). Due to the large size of the tumor patient receive preoperative chemotherapy - to enable limb salvage resection.

Conclusions:

MFS is a clinical mimicker and might present histologic difficulties. A large series of histochemical and immunohistochemical stainings are recommended. Extensive surgical excision with adjuvant radiotherapy or chemotherapy presents the optimal therapeutic option.

A 29 weeks pregnant patinent with hypovolemic shock due to ruptured splenic artery aneurysm, requiring emergency caesarean section and urgent surgical treatment – a case report

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Introduction:

Splenic artery aneurysm (SAA) represents 60% of all visceral arteries aneurysms. The most serious complication of SAA, and often the first symptom is the aneurysm's rupture. SAA in pregnancy have a 25% risk of rupture, with 70% maternal and 95% fetal mortality rates, when in general population mortality rate does not exceed 25%. Over 100 cases of ruptured SAA during pregnancy have been reported, of which only 16 cases ended with mother's and fetal survival.

Case report:

A 40-year-old pregnant patient (gravida 2; para 2) at 29 weeks of gestational age was admitted to the hospital after she had fainted at the OB-GYN clinic. Symptoms on admission were suggestive of shock, with accompanying fetal bradycardia, which was an indication for an immediate cesarean section. A male infant (1400g) with respiratory failure was delivered, and transferred to the neonatal unit. During placenta removal, a bleeding from the peritoneal cavity was noticed. During extended laparotomy ruptured SAA was found by consulting surgeon. Aneurysm clipping allowed for a return of hemostasis. During surgery 60 surgical sponges were used, 8 units of PRBC (packed red blood cells) and 6 units of FFP (fresh frozen plasma) were transfused. The patients regained consciousness 10 days after the surgery. However, due to prolonged time of hypovolemia, she suffers from neurological deficits. On the 25th day of hospitalization patient had a rectal hemorrhage. Proliferative lesion in the descending colon was found during a colonoscopy. Histopathology revealed a villous polyp with low-grade dysplasia.

Conclusions:

The risk of SAA rupture is statistically low except among pregnant women. SAA rupture is difficult to diagnose due to non-characteristic symptoms. SAA diagnosed during pregnancy should always be viewed as life threatening condition for both mother and the fetus. Every SAA in pregnancy is an indication for a surgical intervention.

Extreme case of megacolon toxicum in the course of Hirschsprung's disease

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Introduction:

Hirschsprung's disease is a congenital disorder of intestinal motility that arises as a result of aberrant migration of the precursor of ganglion cells to the distal part of the gut during fetal life. In 75%, the disease occurs in the rectosigmoid segment. As a result, this section is narrowed, and the proximal part of the colon becomes wider. In some cases, complications may occur in the form of: megacolon toxicum, enterocolitis, constipation or stool incontinence. In children, a preliminary colostomy is used above the aganglionic segment and after a few weeks the most common is primary entero-rectum anastomosis.

A case report:

The case refers to a 29-year-old woman suffering from Hirschsprung disease, diagnosed in her infancy. At the age of 2 she underwent surgery of the sigmoid resection with the Hartmann method and reconstruction of the digestive tract continuity. Since the operation, the patient has been observed several exacerbations of the disease in the form of violent and short abdominal distension attacks with the enlargement of the bowel. Patient is mentally retarded with diagnosed osteopenia. In December 2018 she reported to the emergency room with a significant enlargement of the abdomen, increased pain, nausea and vomiting. In the abdominal CT examination doctors described an extreme case of megacolon toxicum with widening of the descending colon to a approximately 15 cm and a large amount of gas and faecal matter. Also the compression and dislocation of the internal organs in the abdominal cavity through the distended intestine were reported . The conservative treatment initially introduced had no effect. For this reason, the patient underwent a colectomy with the exteriorize of ileostomy. After 6 days it was necessary to perform relaparotomy with the resection of the rectum stump due to its separation. Further postoperative course was correct.

Conclusions:

Megacolon toxicum is a rare and very serious complication of the Hirschsprung disease that is life-threatening. An operation carried out in childhood did not protect the patient against the consequences of primary disease in adulthood.Megacolon toxicum may lead to symptoms of obstruction with compression to the internal organs of the abdomen and pelvis and the risk of perforation of the large intestine. The disease may intensify because of neglect and uncontrolled nutrition of the patient.

Subdural hygroma: case report

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Case report:
Subdural hygroma (SDG) is an accumulation of proteinaceous fluid in the subdural space which is derived from serum or cerebrospinal fluid due to a tear of the arachnoid membrane. SDG is commonly seen in elderly people after minor trauma, although are met in children as a result of an infection. Nonetheless, it is believed that chronic subdural hematomas can transform to SDG. Since the majority of patients with a SDG do not show a mass effect, surgery is rarely considered. We herein describe the case of 55-year-old male patient with billateral calcified SDH in the frontal lobe, who suffered from incidents of sudden deterioration of sight lasting for 4-5 minutes without loss of consciousness for 3 years. Surgical management was undertaken. The patient underwent partial evacuation of the hygroma by left temporal craniotomy.

Pulmonary veno-occlusive disease - from diagnosis to lung transplantation. Two cases study

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Introduction:

Pulmonary veno-occlusive disease (PVOD) is a rare form of pulmonary hypertension caused by alteration of pulmonary veins. PVOD is classified as a subgroup of pulmonary artery hypertension (PAH). The pathogenesis of pulmonary veins alteration is mostly unknown, nevertheless, several risk factors such as infection, autoimmunity, genetic predisposition, radiation, chemotherapy, and medication toxicity may be involved. Lung transplantation is a viable therapeutic option for patients with this end-stage lung disease. This case report is about 2 patients who underwent lung transplantation due to PVOD.

Case report:

The first patient is a 24-year-old male whose symptoms was progressing dyspnea and worsening of exercise tolerance for the past 4 months. Medical imaging results were distinctive for pulmonary hypertension and lead to the suspicion of PVOD which was later diagnosed on the basis of histopathological examination. Patient was qualified for lung transplantation and pharmacological bridge therapy was administered. Transplantation was performed in 2013 in the Silesian Center for Heart Disease in Zabrze. The latter patient is a 19-year old male. Since 2012 he was feeling progressive dyspnea and increased fatigue. In 2015 echocardiography findings were suggesting elevated pressure in pulmonary arteries. In March 2016 he was admitted to the Department of Cardiology for diagnosis of progressive respiratory failure. Radiological findings suggested PVOD as a cause of pulmonary hypertension, as it was confirmed in 2017 by genetic test. Treprostinil and amlodipine were administered, though patient condition further deteriorated and continuous oxygen therapy was needed. After qualification, patient underwent lung transplantation in 2017 in the Silesian Center for Heart Disease. Both patients are alive and in good general condition. Their latest 6 minute walk test distances were 733,5m and 659,8m, respectively.

Conclusions:

PVOD is a disease diagnostically challenging and resistant to conservative therapy. Lung transplantation was an efficient treatment that improved patients life.

Pain in the subclavian region caused by left subclavian artery aneurysm and Kommerell's diverticulum - clinical case analysis

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Introduction:

The right aortic arch (RAA) is a rare congenital anatomical variant occurring in 0.1% of the population. Kommerell diverticulum (KD) is a dilated part of the aortic arch from with the subclavian artery originates. KD of the left subclavian artery (LSA) occurs with a frequency of 0,05-0.1%. Symptoms (dysphagia, chest pain, differences in blood pressure between upper limbs) occur in 5% of patients with KD. Aneurysms of subclavian arteries are 0.13-0.5% of peripheral arteries aneurysms. Most often they are asymptomatic. Occasionally they can cause pain in the upper part of the thorax.

Case raport:

The 48-year-old man was admitted because of chest pain lasting for 2 weeks, radiating to his left arm. Initial diagnosis excluded acute coronary syndrome (ACS). In the Doppler ultrasound examination a wider fragment of the proximal part of the LSA was found. In the angio-CT examination, following were found: Kommerell diverticulum connected to RAA and LSA aneurysm in further section of the artery. The patient was referred for surgical treatment. The bypass between the left common carotid artery and the LSA was made. Next the thoracic stentgraft was introduced through the right femoral artery, which was expanded below the origin of the right subclavian artery. After 4 days, a control Angio-CT examination was performed, confirming retrograde LSA aneurysm filling. The patient was qualified for the next stage of treatment. The embolization of the aneurysm with embolization spirals was made from the left brachial artery access. A control angio-CT scan performed outpatiently after one month from the last surgery showed no leakage.

Discussion and conclusions:

Kommerrell diverticulum coexisting with left subclavian artery aneurysm belongs to one of the rarest causes of chest pain radiating to the left hand. Various methods are used to treat KD. Currently, endovascular procedures (TEVAR = thoracic endovascular aortic repair) or hybrid treatment are more often performed, because in opposite to open surgeries they are characterized by lower risk of complications and perioperative mortality. Aneurysms of the subclavian arteries are usually treated by inserting a stentgraft from the femoral artery access. Both pathologies coexisted in the described patient. It was decided to use hybrid KD treatment, which was supplemented by embolization of the LSA aneurysm. This allowed to reduce perioperative risk and shorten time of the hospitalization.

Necrotizing fasciitis as a complication of eosinophilic fasciitis treatment- case report

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Introduction:

Eosinophilic fasciits (EF) is a very rare sclerodermiform syndrome, first described in 1974 by Shulman. Primarily it affects adults with no gender predilection. There is less than 300 reported cases of EF in the world. The exact cause of eosinophilic fasciitis is unknown. Researchers believe that EF results due to a nonspecific triggering event (e.g. Borelia burgdorferii infection, L-tryptophan intake), which causes an abnormal immune system response, specifically an abnormal allergic or inflammatory reaction. This response causes the overproduction and accumulation of eosinophils and other leukocytes in certain tissues. The next step in the course of the disease is sclerosis, occurring especially in upper and lower limbs, which causes characteristic signs and symptoms (S&S) of EF. Necrotizing fasciitis (NF) is severe infection of fascia and soft tissue, rapidly spreading along fascial planes accompanied by severe systemic toxicity (septic shock). One of the main risk factors is immunosuppression. The most important S&S are: erythema, pain beyond the margins of infection, swelling, fever, skin necrosis, cutaneous anaesthesia. Treatment is based on surgery as soon as possible, antibiotic therapy, hyperbaric oxygen therapy, wound dressing changes and negative-pressure wound therapy.

Case report:

60 year-old man from Slovenia, who was in generally good health, on july 2018 developed oedema and redness around both ankles with some difficulty in mobility. The upper extremities have been similarly involved. Clinically he was mostly bothered by severe myalgias in legs. Diagnostic procedures revealed eosinophilia (1,43 x 10^9/L), elevated inflammatory markers (CRP 45mg/L), hypoalbuminemia and low ANA titter. Symptoms appeared suddenly and have been slowly getting worse, especially myalgias. Parasitic diseases and allergies were excluded. B. burgdorferi infection markers were detected on 09.18, patient underwent hyperthermia eradication therapy. The diagnosis of EF was made on 25.10.19 by doctors in the USA. Patient was treated with methyloprednisolone 48mg per day (reduction of dosage - 4mg every week until 16mg) and methotrexate 15mg per week. On 12.02.19 patient was admitted to the University Medical Centre Ljubljana due to septic shock and NF caused by S.pyogenes (CRP 253 mg/L). Patient received antibiotic therapy (imipenem and clindamycin). Methyloprednisolone and methotrexate were substituted with hydrocortisone, fasciectomy and debridement was performed. Patient became stable. The post-fasciectomy wounds were treated with negative-pressure therapy and hyperbaric chamber. Since the beginning of symptoms until march 2019 patient lost 20kg, without appetite loss.

Conclusion:

This is the first reported case of NF as a consequence of EF treatment in the world. The most probable trigger of EF was the infection with B. burgdorferi. The plan is to continue with the immunosuppressive treatment after wound healing, possibly with infliximab.

Three extremely rare cases of testicular adult granulosa cell tumor

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Introduction:

Granulosa cell tumors are sex-chord stromal tumors, which mainly occur in ovaries and occasionally in testis. They are classified into juvenile and adult type. Juvenile type is more common and usually benign. Adult type is very rare and has malignant potential. So far, less than 50 cases of adult type have been reported. Metastases to retroperinateal lymph nodes, liver, bones and lungs have been found in 12% of the patients. It has been noticed that features like: tumor size > 5,0 cm, lymphovascular invasion, tumor necrosis and haemorrhage may predict the higher malignant potential. The average age of occurrences is 45, with the youngest recorded case being 16 and the eldest 77.

Case reports:

Patient 1: 28-year old patient admitted to Department of Urology due to paIpable mass in the right testicle. Ultrasound examination confirmed primary recognition of nearly 10x8x8cm tumor of the testis. AFP, beta-HCG and LDH levels were in normal range level. Excision of right testis was performed.

Patient 2: 20-year old patient came to emergency unit due to painful right testis. Urological examination revealed 5cm tumor of the testis. Only LDH level was elevated – 250 U/L. Next day after the diagnosis patient underwent right orchidectomy.

Patient 3: In October 2017, a 57-year-old male was referred to the Departmentof Urology in order to perform orchidectomy of his left testis. Patient complained of acute testicular pain that occurred 4 months before hospitalization. Scrotal ultrasound showed abnormal mass (10x11x7cm) infiltrating the entire volume of the left testis. Physical examination revealed enlargement and tenderness of the left testis, the right testis was normal. While AFP and beta-HCG levels were within normal range, LDH level was elevated up to 265 U/L. The surgical excision of left testis was performed without any complication during and after the procedure.

Histopathological examination for all three patients revealed testicular adult granulosa cell tumor not infiltrating tunica albuginea of the testis. Immunohistochemical stains were performed. The tumor was positive for inhibin, calretinin and negative for EMA. Patients were transferred to the oncological out-patient clinic. No local and distal metastases were found. No further treatment was prescribed.

Conclusions:

Among various cases of testicular sex chord tumors, adult granulosa cell tumor represents the rarest type. That is why taking evidence of every single case brings us closer to understanding clinical progression, finding optimal treatment and possible prognosis. It is also necessary to establish adjuvant therapy for metastatic disease, which may include chemotherapy and/or radiation. Therefore, testicular adult granulosa cell tumor should intensify medical watchfulness and cooperation of the Urologist, Pathologist and Oncologist.

Uncomplicated pregnancies after restorative proctocolectomy with ileal pouch-anal anastomosis for ulcerative colitis - a case report

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Background

Ulcerative colitis belonging to the group of inflammatory bowel diseases is a common condition affecting up to 1 in 10,000 people each year, majority of whom are in the reproductive age (the peak of new diagnoses occurs in patients aged 15 to 25 years). Therefore it is vital to remember that the probability of conception and uncomplicated pregnancy after passing through the disease are considerably lower, primarily due to multiple adhesions formed as the aftermath of vast surgeries unavoidable in full-blown UC.

Case Report

In 1997 a 16-year-old female presented symptoms of haemorrhagic shock. She was diagnosed with ulcerative colitis fulminans complicated by megacolon toxicum and colon perforation. An immediate colectomy with an end ileostomy was performed. There were several complications such as numerous intraperitoneal abscesses and fistulas, which implicated a secondary surgery of partial jejunectomy and an end-to-end anastomosis. During the following years several episodes of sanguination occurred with a consequent non-invasive therapy. Eventually the patient was treated with restorative proctocolectomy with ileal pouch-anal anastomosis (IPAA) together with a loop-ileostomy (in 2000).

Given no post-operational side effects, the patient became pregnant successfully 3 times and delivered 3 children in 2003, 2006 and 2010. There were no complications during any pregnancy. All the labours were conducted on time via cesarean sections. The newborns were all within the normal weight range with Apgar score of 10. They have developed correctly until today.

Conclusions

Patients with UC vary substantially in terms of reproduction: infertility, preterm births and inadequate gestational weight gain are common issues. However, with an appropriate surgical and gynaecological care the preservation of procreative function is often possible. Patients' plans concerning potential offspring should be taken into account while choosing the most beneficial course of treatment.

Rectal location of malignant melanomas

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Introduction

Malignant melanoma is commonly known as one of the most malignant skin cancers and giving early distant metastases usually to the lungs, the liver, the Central Nervous System and the bones. This cancer originates from melanocytes which are mostly deployed in the skin but also in smaller quantities in the mucous membrane. Primary mucosal melanomas account for less than one percent of all melanomas. They arise most commonly from mucosal surfaces in the head and neck, the anorectal region, the female genital tract and the urinary tract, in order of the number of occurrences. These cancers are not contingent on exposure to ultraviolet radiation and present different genetic mutations from cutaneous melanomas. They are also associated with much worse prognosis.

Case report

Three patients with mucosal melanoma has been operated on at the Department of General and Colorectal Surgery between 2006 and 2018. Two of them have already suffered from disseminated cancer disease at the time of admission.

The first one, a 60-year-old female, had locally advanced rectal tumour infiltrating the vagina, the right side of major labia and the right buttock. There were also two small mets in the omentum and the mesentery and one more solid tumour behind the stomach infiltrating small curvature. The only possible surgical procedure was sigmoid stoma as a management of intestinal obstruction.

During the surgery of the another patient, a 59-year-old male, a 25 cm tumour was detected in the minor pelvis. The lesion infiltrated surrounding area including small intestine. Metastases were localised in the large omentum, the mesentery and the liver. Moreover, small intestine was involved with another 8-cm tumour located about 20 cm distally from the ligament of Treitz.

The last patient, 73-year-old female was referred to the Department of General and Colorectal Surgery 6 months after excision of a mass from the groin. The pathological examination revealed malignant melanoma. Soon afterwards a colonoscopy was carried out and detected rectal melanoma infiltrating anal sphincter. Abdominal surgery did not betray any distant metastases. Abdominoperineal resection of the rectum was performed.

Disscusion

Rectal melanoma is a condition with poor prognosis. The entity is mainly diagnosed as locally advanced or spread disease. Therefore disease-free survival after surgery is estimated to only 27 months and overall survival to 22 months. In these cases surgical treatment is limited to procedures alleviate symptoms. Unlike other mucosal melanomas, rectal location increases significantly. Optimal surgical management plays a key role in therapeutic process however not in advanced or spread disease. Researches which focused on comparing abdominoperineal resection and transanal excision did not find any significant differences in survival rate.

26 year old woman with Dunbar syndrome

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Introduction

Dunbar syndrome is a disorder affected by the median arcuate ligament external compression of the celiac trunk. It is a rare condition with a reported incidence of 2 per 100,000 population. It is known as the incident common in young females between the ages of 30 to 50 years. The abdominal pain may be related to meals or accompanied by weight loss but in the first instance those symptoms point more frequent condition.

Case report

A 26-year-old female patient was admitted to Department of General, Minimally Invasive and Elderly Surgery in Olsztyn with history of 2 years lasting abdominal pain related to food intake. In this case there were no comorbidities presented by patient. Physical examination of the abdomen revealed tenderness to palpation. Laboratory blood tests were unremarkable. The CT was performed which finally established the diagnosis. Median arcuate ligament caused 80% stricture of celiac trunk. The laparoscopic release was performed 20.02.2018. The surgery lasted 95 min without any complications. There was a total remission of the symptoms. Patient reported relief of symptoms in the first days after the operation. There were no postoperative complications. After two days of hospital stay patient was discharged.

Conclusion

Using laparoscopy can decrease the trauma and lead to rapid clinical improvement. It is characterized by a small number of complications and an admirable cosmetic effect, especially important with females. An excellent therapeutic effect was achieved by remission symptoms which improved the quality of life.

Esophagogastric anastomosis leakage successfully treated with endoscopic vacuum-assisted therapy – a case report

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Introduction

Esophagogastric anastomosis leakage is a life-threatening condition after resection of gastroesophageal junction cancer. The mortality rate reaches even 50%. Endoscopic management of upper gastrointestinal defects includes metal clips, stents, suturing, fibrin glue and endoscopic vacuum-assisted therapy (EVT). The success rate of EVT of the upper gastrointestinal tract ranges from 60 to 100%.

Case Report

A 53-year-old male patient with long-term reflux disease was diagnosed with adenocarcinoma of the gastroesophageal junction (Siewert type II). The patient underwent distal esophagectomy with proximal gastrectomy. The following day, the transmural defect was detected by water-soluble contrast medium swallow test. EVT was implemented due to the patient's good general condition. A polyurethane (PU) foam was introduced under endoscopic guide into the wound cavity. The continuous negative pressure of 100 mm Hg was applied and maintained by an electronic vacuum device. PU foams were changed every third or fourth day and a total of five sessions were performed. As a result of the EVT a small remnant fistula cavity was revealed approximately of 1 cm without any signs of inflammation. We did not observe any technical problems with application or maintenance of the therapy. The patient was discharged in good general condition.

Conclusions

Esophagogastric leakage can be managed conservatively with endoscopic methods such as EVT. Advantages of EVT include: effective drainage, increased wound closure rate, enhanced wound bed proliferation, improvement of local perfusion and reduction of bacterial overload and inflammatory edema.

A complete ureteral dissection - a rare complication following posterior lumbar discectomy

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Introduction

Ureteral injuries account for less than 1% of all urogenital injuries. In 75% of cases, these complications are iatrogenic and mostly occurs during gynecological and urological operations. Ureteral injury during spinal surgery is a rare complication with only few reports in the literature.

Case report:

We present a case of unrecognized injury of the left ureter during open right-sided L5-S1 disectomy in a 34-year-old male patient who experienced abdominal pain and severe peritoneal symptoms in the first postoperative day. A large hematoma in retroperitoneal space was diagnosed with a CT scan.

Conclusions

The patient was qualified for surgical treatment. Intraoperatively, an extensive urinoma and total intersection of the left ureter in the middle part were found. An "end-to-end" anastomosis with an internal stenting of a double-J catheter was performed. The postoperative course and further observation - without complications.

Adenosquamous carcinoma - a rare prostatic tumor

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Introduction

Adenosquamous carcinoma (ASC) of the prostate gland is a very rare cancer with a high degree of malignancy and unfavorable prognosis. Only about 30 cases of this type of cancer in the world have been described so far. The process of ASC formation is not fully understood. ASC is most often formed as a result of cellular differentiation after hormonal treatment or radiotherapy of a conventional prostate adenocarcinoma.

Case report:

We present a case of a 43-year-old male with primary prostate adenocarcinoma qualified for radical treatment: radiotherapy with hormonotherapy, in which the treatment resulted in the dedifferentiation of tumor cells to adenosquamous carcinoma. High dynamics of secondary tumor growth patient was disqualified from radiotherapy. Surgical treatment was introduced- cystoprostatectomy with rectal subtraction, extended lymphadenectomy and fecal and urinary stoma. Due to the postoperative stage of the disease, the patient underwent a systemic chemotherapy, despite which distant metastases developed. The patient died six months after the operation.

Conclusions

ASC is <1% of all prostate cancers. There are no guidelines for diagnosis and treatment. The case described is unique for two reasons. The treated patient was the youngest person diagnosed with ASC and the only one who underwent such a wide range of rescue surgery (pelvis exenteration).

Diagnostic dilemmas with classification of melanocytic lesions – a navel approach to lesions with indeterminate biological behavior

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Introduction

Among the spectrum of melanocytic lesions, there is a group of atypical lesions, which borderline histological features between benign nevi and malignant melanoma. Classification of such changes could constitute a diagnostic problem, even for experts in the field of dermatopathology. Therefore, two diagnostic categories were distinguished to classify thes ambiguous cases: MELTUMP (MELanocytic Tumors of Uncertain Malignant Potential) and SAMPUS (Superficial Atypical Melanocytic Proliferations of Unknown Significance). However, there are some voices criticizing the provisional value of these diagnoses, so the practical application of these terms is still uncertain. In our project we aimed to discuss the position of these recently distinguished terms within the spectrum of diagnoses of melanocytic lesions, based on the cases from our clinal experience.

Case report

Based on a literature review and three illustrative cases of patients diagnosed in the Department of Pathology we described the most problematic issues, that clinicians could encounter during the diagnostic procedure. We also attempted to consider the position of a new entities distinguished in WHO classification – MELTUMP, SAMPUS and STUMP– within the spectrum of possible diagnoses.

Conclusions

The diagnosis of SAMPUS and MELTUMP by consultant pathologists reflects the difficulty of classification with accuracy lesions that showed histological features of various atypical tumors or malignant melanoma. In these cases, the biological potential may be established with molecular studies.

A patient with severe aortic valve stenosis and coronary-pulmonary artery fistula- case report

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Introduction

Coronary artery fistulas are relatively uncommon clinical problem. Its occurrence is estimated on 0,002% in the overall population. Most of the fistulas are congenital, but they can also appear after cardiac surgeries. About 50% of the fistulas originates from the right coronary artery and 30% from left anterior descending coronary artery. Over 90% terminates in the right heart, most frequently the right ventricle. They may cause angina or remain asymptomatic.

Case report

A 58-years old woman diagnosed with epilepsy, dyslipidemia and severe aortic valve stenosis was admitted to the Department of Interventional Cardiology at John Paul II Specialist Hospital in Kraków in order to perform invasive diagnostic of coronary arteries before scheduled valve surgery. On admission patient reported exertional dyspnoea (NYHA II) and periodic retrosternal pain (CCS II/III). Coronary angiography did not show any significant stenosis of coronary arteries, however it revealed pathological leak between diagonal branch of left coronary artery and main pulmonary artery with left-to-right shunt. Echocardiography showed the presence of severe aortic stenosis as well as double jet inside pulmonary trunk. The patient was qualified for surgical implantation of biological aortic valve and simultaneous closing of the pathological vascular connection. Two months later the surgery was performed with extracorporeal circulation, in general hypothermia (29C), using blood cardioplegia. During the surgery pulmonary artery was opened and the fistula was closed using suture Prolene 5/0. Moreover, the fistula was secured from the outside with suture Prolene 4/0. Following, the ascending aorta was opened and the stenotic aortic valve was replaced with biological valve Sorin Crown PRT 21 A. The surgery was performed without any complications. The patient was cardiopulmonary stable and 10 days later she was discharged for cardiac rehabilitation in Rabka-Zdrój.

Conclusions

Treatment of coronary artery fistulas is indicated when there is large left-to-right shunt, congestive cardiac failure, myocardial ischaemia, left ventricle is overloaded with volume or dysfunctional and for prevention of endocarditis/endoarteritis. In this case the surgical treatment was chosen because of the severe aortic valve stenosis which indicated the valve replacement.

Nasal reconstruction with forehead flap – reports of 3 cases

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Introduction

Nasal reconstruction is still a challenge for the specialty of plastic and reconstructive surgery. When the defect is small the primary suturing, local flap or skin graft can be applied. A large, deep defects requires other methods, which possibly provide the best functional and aesthetic result.

Case report:

We are presenting three male patients who reported to Plastic, Reconstructive and Aesthetic Clinic with defects in the nasal area- two posttraumatic and one after BCC excision. 49-year old man in January 2015 reported to the Norbert Barlicki University Teaching Hospital No. 1 in Lodz with the bite wound of his nose caused by human. The nasal tip was absent and required reconstruction so two-stage forehead flap was performed with satisfactory result, enriched with cutaneous septum modeling procedure. The second patient reported in January 2019 after MOHS surgery, performed in other hospital, with large skin loss in dorsum, tip and sidewalls areas. He has also undergone forehead flap procedure. The last patient reported in December 2018. In this case the tip and skin of the dorsum were absent. In this situation the defect was resurfaced temporarily with a skin graft. Now we are planning two-stage forehead flap which can be performed one year after injury.

Conclusions

In conclusion, the approach to repair is influenced by the site, size, depth and condition of the wound. On the example of cases descriptions, it was confirmed that the reconstruction of the nasal soft tissue defects using the forehead flap adapted individually gives satisfactory aesthetic and functional effects.

A large biliary cyst of Todani I type in a young woman a case report

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Introduction

Biliary cysts (BC) are dilatations of different parts of a biliary tract which occur very rarely (1% of all benign biliary diseases). BC is found the most frequently in pediatric patients however in approximately 20% of cases they are recognized in adults. Biliary tract malignancy occurs in 2.5% - 28% of patients with BC. Cholangiocarcinoma is the most common (10-30%), serious and dangerous BC complication.

Case report:

21 year old female was admitted to Department of Gastrointestinal Surgery in Katowice in order to undergo the complete cyst excision with cholecystectomy followed by biliary reconstruction using a Roux-en-Y hepaticojejunostomy. During ERCP it was found that the patient had significant anatomical abnormalities. During the following surgery the gallbladder was removed. A cyst of the common bile duct was dissected. Todani I type of cyst was recognized intraoperatively. After cutting the cyst, 2 channels were revealed in the canal, which were revised by catheters; 1. leading to the long, tortuous distal common bile duct, 2. leading to the pancreatic duct. Due to the long winding course of the distal common bile duct and the possibility of its communication with the additional bile duct before opening to the duodenum, the common bile duct and the pancreatic duct was implanted into the duodenum. The bile and pancreatic ducts were catheterized with catheters which were taken out to the duodenum. The common hepatic duct was connected using a Roux-en-Y hepaticojejunostomy. After 52 days internal catheters were removed during ECPW.

Conclusions

Due to the age of the patient and their anatomical abnormalities this particular case was extremely rare and challenging for surgeons.

DENTISTRY

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Biometrical analysis of clinical indicators of buccal state in patients with different face types

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Introduction

The results obtained by us show confirmation the relationship between the biometric parameters of the buccal fat pad (BFP) and the type of patients face before oral tissue defects reconstruction.

Aim of the study

Clinical evaluation of spatial parameters of the buccal region of people with different types of face.

Material and methods

Face type was determined using Prosopic index in 32 patients. The patients clinical parameters inspect the thickness of the buccal region, the values of the external and internal buccal corridors.

Results

Patients with mesofacial face type had the following parameters: average value thickness of the buccal region 8.96±0.01 mm in the first dimension – 8.13±0.13 mm, the second dimension – 9 mm, the third dimension – 9.75±0.16 mm; the absolute value of the width of the outer buccal corridor is 18.23±0.16 mm, the volume of the inner buccal corridor is 881±0.28 mm3.The following parameters are given for patients with a brachyfacial face type: average value thickness of the buccal region 12.66±0.54 mm in the first dimension – 11.17±0.93 mm, the second dimension – 13.08±0.38 mm, the third dimension – 13.75±0.31 mm; the absolute value of the width of the outer buccal corridor is 15.77±0.15 mm, the volume of the inner buccal corridor is 634±0.22 mm3.Patients with dolichofacial face type are-the buccal average thickness form 8.17±0.11 the area of the first dimension is 7.17±0.11 mm, the second dimension – 8.17±0.11 mm, the third measurement is – 9.17±0.11 mm; the absolute value of the width of the outer buccal corridor is 22.6±1.3 mm, the volume of the inner buccal corridor is 928±0.41 mm3.

Conclusion

Biometric analysis of clinical indicators of BFP gives an opportunity to define morphofunctional features buccal shelf during surgical interventions in patients with different types of facial.

The comparison of alveolar bone process osteoplasty performed with the usage of manual and mechanical technique - piezosurgery in the clinical cases of gummy smile treatment

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Introduction

Aesthetic dentistry procedures often demand the correction alveolar bone process and soft tissues shape in order to change teeth proportion by surgical procedures.

The aim of the study was the comparison of two surgical procedures of alveolar bone process osteoplasty performed in gummy smile treatment: conventional technique and piezosurery.

Case report

Two patients at the age of 58 and 40 presented at the dental surgery in order to undergo multi-stage surgical and prosthetic therapy. The interview, inta-oral, extra-oral examination and radiological diagnostics were conducted. In both cases aesthetic disorder of teeth and soft tissues, due to buccalo–lingual bone thickening, was claimed. This phenomenon resulted in gummy smile connected to incomplete teeth eruption – 1B Coslet's type. According to photographs and diagnostic wax up, detailed treatment plan was created. Alveolar bone process osteoplasty performed in order to change dimensions of upper front teeth and smile improvement were one of the healing stages. In the first case the procedure was performed with the usage of chisel and hammer (conventional technique), in the second case dentist decided to perform procedure with piezosurgery equipment.

Discussion

Osteoplasty method performed with the usage of chisel and hammer is cheaper, because it is not compulsory to buy professional equipment to perform it. Another advantage is lack of heat production that happens while rotary tools are used. It is faster and easier than piezosurgery. However it is crucial for operator to have experience while working, because of the risk of bone lamina breakage and root damage. Consequently it may lead to hypersensitivity, temporary mobility of teeth and even root resorption. What is more it is less precise and it is necessary to smooth uneven bone edge afterwards.

Piezosurgery bone osteoplasty method enables precise and bloodless procedures thanks to cavitation effect. Incision is selective due to stops on working tips that reduce the risk of soft tissue injury and simplify the incision depth control. Furthermore the procedure is harmless to cementum. The risk of bone lamina breakage is very low. The main disadvantage of this technique is impaired visibility caused by intensive cooling with an isotonic solution of sodium chloride. It is also time–consuming method. During the procedure the breakage of tips occur. Similarly to the rest of equipment, the tips are expensive. It is essential to mention that piezosurgery is difficult and it requires experience.

Healing process in both cases proceeded alike and it took about 6 weeks. Postsurgical pain was mild and comparable. Treatment effect after 5 years in both cases maintained.

Conclusion

Both methods of alveolar bone process osteoplasty are comparable and they enable the dentist to achieve similar therapy effects.

Knowledge of oral cancer risk factors among international medical and dental students in Lithuanian University Of Health Sciences

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Introduction

A proper knowledge about oral cancer risk factors among dental and medical students who are future medical professionals is key to prevent oral cancer development.

The aim of research

To evaluate the knowledge of oral cancer risk factors among international dental and medical students in Lithuanian University of Health Sciences.

The material and methods

A cross-sectional study was conducted among international medical and dental students at the Lithuanian University of Health Sciences in 2018-2019. In total 253 students participated with a response rate 79.5%. Later participants were grouped into medical, dental preclinical (1st and 2nd study year) and clinical (3rd-5th study year) students. A self- administered English questionnaire consisting items with options (yes, no, I don't know) about oral cancer risk factors. Statistical data analysis was carried out by using SPSS 22 version. To establish relationships between categorical variables, the Pearson chi-squared test ($\chi 2$) was used. The level of significance was set at $p<0.05$. The study was approved by the Bioethics Center of the Lithuanian University of Health Sciences (No BEC-OF-50).

Results

Overall majority of participants (96.8%) agreed that usage of tobacco is a risk factor of oral cancer. Meanwhile, merely a half (52.2%) of students reported excessive alcohol consumption as a risk factor. Surprisingly, a significantly more preclinical group of dental students (72.5%) answered correctly than clinical group (50.7%) ($p=0.025$).

Considering the sunlight's exposure as a risk factor of oral cancer, more dental students (34.8%) were aware than medical students (23.2%) ($p=0.047$). Moreover, preclinical dental students showed better knowledge over clinical dental group (52.5% vs. 25.3%) ($p=0.007$).

More international medical (38.4%) than dental students (19.1%) knew that oral cancer is related to gender ($p=0.003$).

Majority of participants (85.4%) found additional training important and necessary.

Conclusion

International medical and dental students reported good knowledge about the main risk factors of oral cancer. Surprisingly preclinical dental students seem to be more aware of risk factors than clinical dental students.

Methods of root canal irrigation used by Polish dentists: A survey-based research

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Introduction

Root canal irrigation is an essential stage of endodontic treatment, which has a significant impact on the results of the procedure. Nowadays, there are plenty of irrigants and devices which are necessary or helpful during this essential part of the treatment. Different irrigation protocols are also acceptable.

Purpose

This research aimed to investigate substances and instruments which are used by Polish dentists to rinse the root canal system during the endodontic therapy.

Materials and methods

Data was collected through a survey among 528 dental practitioners, which was conducted at the turn of the year 2018/2019. The questionnaire consisted of 12 half-open-ended and close-ended questions with single- or multiple-choice answers.

Results

The research has shown that sodium hypochlorite is the most commonly used irrigant among Polish dentists. Its use is declared by 99% of respondents, 71% of whom apply it in 5% concentration. Among doctors who do not use this chemical agent, 50% are afraid of complications caused by the apical extrusion of sodium hypochlorite and 38% are frightened of the chemical burning of the oral mucosa. Rubber dam is applied in each case of root canal treatment by less than half of the interviewees (47%). The most commonly stated causes of a lack of rubber dam isolation are the following: a too complicated and time-consuming procedure (31%), the necessity of tooth wall restoration (26%) and the anxiety about tooth fracture (22%). Most of the respondents use side-vented irrigation needles (92%) and 61% of surveyed dentists claim to use ultrasonic irrigation devices.

Conclusions

Most of the Polish dental practitioners use canal irrigants which are in compliance with the current guidelines. The positive facts are that the standard injection needles are being abandoned in favour of much more efficient side-vented irrigation needles and that irrigant activation devices (mostly ultrasonic ones) are relatively frequently applied. However, a great number of interviewees do not always use a rubber dam, although it is recommended during all cases of root canal therapy.

The Attitude of Polish and American Mothers Toward Breastfeeding – A Questionnaire Study

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Introduction

Exclusive breastfeeding is recommended up to 6 months of age and no longer than 12 months. However, the rates of breastfeeding vary greatly around the world.

Aim of the study

To compare the attitude of Polish and American mothers toward breastfeeding.

Materials & Methods

Surveys consisting of 49 questions concerning breastfeeding duration and frequency, as well as general health and oral health were given to mothers from Philadelphia (USA) and Warsaw (Poland). Statistical analyses including Spearman correlations were made using Statistica 12.

Results

There were 500 Polish and 504 American questionnaires collected. The average age of Polish and American mothers was 39.0±6.5 and 37.7±8.6 ($p=0.008$). 47.2% of Polish and 42.3% of American mothers had a graduate level of education ($p>0.05$). Polish (91.8%) and American (88.3%) mothers were mainly in the middle social class($p>0.05$). In Poland 5.8% of mothers bottle-fed, 63.8% both breastfed and bottle-fed, and 30.4% only breastfed, and in the U.S. 16.5%, 70.1%, and 13.4%, respectively ($p<0.05$). Among Polish and American mothers, 50.9% and 79.0% ($p<0.05$) breastfed all of their children, 27.1% and 39.2% breastfed up to 6 months ($p<0.05$), and 11.8% and 0.2% breastfed up to 2 years, respectively ($p<0.05$). During the day, Polish mothers breastfed every 3 hours (27.9%) and every 4 hours (42.8%), and American mothers every 3 hours (36.6%) and every 4 hours (37.9%) ($p<0.05$). In Poland, 74.6% of mothers breastfed their children at night with 41.1% feeding 3 times per night, and in the U.S. 87.8% at night with 35.4% 3 times per night ($p<0.05$). During the eruption of primary teeth, 36.0% and 57.7% of Polish and American mothers both breastfed and bottle-fed their children ($p<0.05$). The more educated a Polish mother, the shorter she breastfed ($p=-0.279$) and for an American mother, the longer she breastfed ($p=0.134$). The higher the social status of a Polish mother, the shorter she breastfed ($p=-0.144$), and for an American mother, the longer she breastfed ($p=0.122$).

Conclusions

Most mothers in Poland and the U.S. both breastfed and bottle-fed, with most feeding 3 times per day and 3 times at night. There was an inverse correlation between education and social status and the duration of breastfeeding for Polish mothers while the opposite was true for American mothers. Most Polish mothers exclusively breastfed for up to 12 months whereas American mothers ceased at 6 months.

Evaluation of maxillary first molars inclination and hard palate shape in various age groups – a CBCT study

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Introduction

Cone beam computed tomography is a diagnostic tool that acquires volumetric data with relatively low dose of radiation and short acquisition time and shows structures in axial, coronal and sagittal plains. It allows for the visualization and measurement of structures as well as the evaluation of their mutual position. We can observe that the buccolingual inclination of the molars and the dimensions of the palate change with the growth of the individual. However, studies regarding this topic are still insufficient.

Aim of the study

To assess the maxillary first molars inclination, palatal width and height on the basis of the CBCT scans of juvenile and adult patients.

Material and methods

69 patients were enrolled into study and divided into 3 groups: 6-11 years (29 patients), 11 -18 years (20 patients) and 19 – 30 (20 patients). In each case, previously obtained for other clinical reason, CBCT scan was used. Maxillary first molar inclination was measured on the frontal projections after establishing the long axis of the maxillary first molars on the sagittal plane. Transpalatal width and hard palate height was evaluated on the same exported projection.

Results

Mean converging angle of upper first molars was 21,46° (+/- 5,93°) in Group I, 14,69° (+/- 8,79°) in Group II and 13,23° (+/- 8,13°) in Group III. Statistically significant differences could be detected between the Groups I/II (p=0,0001) and I/III (p=0,0005). The palatal height to width ratio equalled 28,46% in Group I and was significantly smaller than in Group II (35,44%; p=0,0001) and Group III (39,38%; p<0,0001).

Conclusions

CBCT scan allows for accurate and repeatable measurement of long tooth axis inclination and dimension of the hard palate. All maxillary first molars showed buccal inclination that decreased with age and most significant changes could be observed between the patients in pre- and post-growing spurt age. Following a similar pattern, the palatal shape is also changing its form with age, becoming more highly arched.

Localised reactive lesion of the gingiva in a 45-year-old man

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Introduction

Localised gingival overgrowth is a relatively commonly observed enlargment of the gingiva often referred to as epulis. It clinically presents as a benign sessile or pedunculated reactive lesion which is light pink to red in colour with smooth or ulcerated surface. Although etiology is yet not clarified, some contributing factors such as local irritation, trauma or hormonal influence were already identified. Treatment includes complete surgical excision and removal of the source of irritation. Other forms of therapy include the use of CO2 or Nd:YAG laser, electrodesiccation or cryotherapy.

Currently, there are several different classification systems of gingival overgrowths; while Polish clinicians recognize them as epulides and divide them into fibrous, inflammatory and giant cell types, internationally these lesions are distinguished as fibrous epulis (or peripheral fibroma), angiogranuloma (or pyogenic granuloma) and peripheral giant cell lesion (or granuloma). As their clinical manifestations may be similar, histological examination is indispensable for establishing a definitive diagnosis.

Case report

A 45-year-old man was referred to Department of Oral Pathology, Medical University of Lodz for a localized painless gingival lesion in 25-26 buccal region 1.5 cm in diameter. The mass was reddish in colour and pedunculated with smooth and shiny surface. No radiologic evidence of alveolar bone involvement was detected. The patient's medical history did not reveal any systemic condition. The lesion was surgically removed under local anesthesia. The histological features of the specimen were indicative of inflammatory epulis. At three weeks follow-up postoperative healing was uneventful.

Discussion/Conclusions

Inflammatory epulis (also distinguished/known as angiogranuloma or pyogenic granuloma) is one of the most prevalent reactive lesions of the gingiva with a clear gender predilection (F:M = 2:1). It is usually located in its anterior region, more often in maxilla than in mandible. It derives from periodontal ligament or mucoperiosteum and histologically consists of numerous blood vessels, inflammatory cell infiltration and connective tissue fibers.

The differential diagnosis includes: peripheral giant cell granuloma, pregnancy tumour, epulis fissuratum, gingival enlargement associated with periodontitis and benign soft tissue tumours of the oral cavity. Recurrence rate following treatment is 16% and is believed to be a result of an incomplete excision or failure of removal of causative irritants.

DERMATOLOGY

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The retrospective analysis of clinical and epidemiological aspects of DLE

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Introduction

Discoid lupus erythematosus (DLE) is defined as a chronic form of cutaneous lupus which may lead to atrophy, scarring and hair loss.

Aim of the study

A four-year retrospective analysis of patients hospitalized with DLE.

Material and methods: 52 patients (31 women, mean age 58,23; 21 men, mean age 54,05) with DLE, hospitalized at the Department of Dermatology, were included in the study. Results were analyzed using Chi-squared test.

Results

52 patients were hospitalized for DLE, 31 females (60%) and 21 males (40%), of mean age 56 years. Almost 80% of them had systemic comorbidities, most often arterial hypertension (31%). Half of the group smoked and 56% had excess body weight. The most common manifestations were erythematous plaques (77%), infiltrative lesions (46%), scarring (21%), scarring alopecia (21%). Lupus tumidus was diagnosed in 5,8% of the patients and subacute form in 11,5%. Pruritus was reported by 20% of patients. The most common localizations were face, neck, cleavage, scalp and upper limbs. The appearance of skin lesions was induced by UV radiation in 50% of all patients. Presence of ANA (anti-nuclear antibodies) was confirmed in 33% of cases. The administered treatment consisted of topical (50%) and oral glucocorticosteroids (10%) and antimalarials (36%).

Conclusions

The analysis confirmed DLE is more common in women, as well as that skin lesions are mostly located on sun-exposed body areas. Our study suggests that smoking and excess body weight affect the occurrence of DLE.

The effect of 17-aminogeldanamycin on NF-κB activity in patient-derived melanoma cell lines

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Introduction

Melanoma is one of the most aggressive human cancers, posing a serious clinical problem worldwide due to an increasing incidence. The V600E BRAFsubstitution occurs in approximately 50% of melanoma cases, and hence, BRAFV600E has become a target for therapy. However, targeted therapies with RAF inhibitors, alone or in combination with a MEK1/2 inhibitor, result in initial potent response and subsequent relapse with drug-resistant disease. In the search for new therapeutics, HSP90 (heat shock protein 90) inhibitors introduce an interesting approach. NF-κB is an HSP90 client protein and a transcription factor regulating the expression of a number of genes involved in the regulation of melanoma cell proliferation, invasion and survival. Constitutive induction of NF-κB has been noted in BRAF-mutant melanoma. In addition, elevated NF-κB activity has been reported in melanoma cells resistant to BRAF inhibitors. Therefore, attenuation of NF-κB achieved by targeting HSP90 seems promising as a novel therapeutic strategy. 17-aminogeldanamycin (AG), an HSP90 inhibitor, was selected for this study based on preliminary results obtained at our Department. The effect of AG on NF-κB activity has not been elucidated so far.

Aim of the study

To assess the influence of 17-aminogeldanamycin (AG) on NF-κB activity and thereby evaluate its anti-melanoma effect.

Material and methods

We used cell lines derived from advanced-stage surgical melanoma specimens named DMBC11, DMBC12, DMBC21 and DMBC22. NF-κB activity was assessed by measuring the level of phosphorylated p65 (a subunit of NF-κB) with the use of Western blotting, subsequent to 4 and 24 hours of incubation with AG. Expression of three NF-kB-dependent genes: BCL2L1 (BCL-XL), CCND1 (cyclin D1) and CXCL8 (interleukin-8) was assessed using real-time PCR, following 6 and 22 hours of incubation. AG concentration of 0.4 μM was used.

Results

17-aminogeldanamycin (AG) substantially reduced the level of phosphorylated p65 after 4 hours. This effect persisted after additional 20 hours of incubation. Such a decrease was consistently reported in cell lines harbouring the BRAFV600E variant (DMBC11, DMBC12 and DMBC21) and in NRASQ61R -positive DMBC22 cells. AG significantly reduced transcript levels of both CCND1 and CXCL8 in DMBC12, DMBC21 and DMBC22 cell lines, following a 22-hour incubation. In DMBC11 cells, significant reduction was limited to CCND1. AG did not markedly affect the transcript level of BCL2L1.

Conclusion

17-aminogeldanamycin (AG) reduces NF-κB activity in melanoma cells representing BRAFV600E and NRASQ61R subtypes.

Serum concentration of BTP and PPAR-γ as potential biomarkers in systemic sclerosis

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Introduction

Systemic sclerosis (SSc) is a chronic multiorgan disease with unknown pathogenesis, in which fibrosis, vasculopathy and immune dysregulation seem to play connected role. Beta-trace protein (BTP) also known as prostaglandin D2 synthase (PGDS) is expressed in almost all human tissues. Product of BTP, prostaglandin D2 (PGD2), is a ligand of two distinct receptors: G protein-coupled DP1 receptor and the chemoattractant receptor-homologous molecule expressed on Th2 cells (CRTH2). Activation of DP1 receptor increases levels of cAMP, resulting in vaso- and broncho- dilatation. Stimulation of CRTH2 on Th2 lymphocytes results in increased humoral immune response and inflammation.

Peroxisome proliferator-activated receptor gamma (PPAR-γ) is an endogenous receptor affecting fibroblasts differentiation and collagen production. Synthesis of BTP and many other molecules participating in inflammation and fibrosis is mediated by activated PPAR-γ.

Aim of the study

The aim of the study was to evaluate the role of BTP and PPAR-γ as potential biomarkers in SSc and correlate them with clinical manifestations of the disease. This is the first study assessing serum concentration of BTP and PPAR-γ in SSc.

Material and methods

46 patients diagnosed with SSc and 31 non-SSc volunteers were included in the study. Both groups did not differ in terms of age, sex, BMI and ethnicity. Subjects who met one of the following criteria: acute or chronic renal failure, neoplasm, other connective or rheumatoid disease were excluded from the study. ELISA measurements were performed in duplicates and the mean values were used for the statistical analyses.

Results

The serum concentration of BTP was statistically significantly elevated in patients with SSc (1225.1 ng/mL; SD 427.06) in comparison to healthy control (919.46 ng/mL; SD 433.04) [p = 0.0003]. Also patients with SSc presented increased concentration of serum PPAR-γ (15.98 ng/mL; SD 2.2) vs. 13.92 ng/mL; SD 1.92) [p = 0.007] in the control group.

Conclusions

Both analyzed markers, BTP and PPAR-γ were significantly elevated in SSc patients. Activation of PGD2-CRTH2 pathway may induce production of proinflammatory cytokines as well as enhance antibody response, consequently leading to fibrosis. This study provides new insight into the complex nature of SSc. Circulating BTP and PPAR-γ in SSc may represent useful markers of the disease and potential therapeutic target in systemic sclerosis.

Sexually transmitted infections - should we pay more attention to them? Survey concerning knowledge, awareness, risk and preventive behaviors among medical and non-medical students of Białystok

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Introduction

Sexually-transmitted infections (STIs) are serious public health problem, being acquired by more than 1 million people every day worldwide.

Aim of the study

Asses the knowledge, attitudes, risky behaviors and preventive practices related to STIs among medical and non-medical faculties students from Bialystok.

Materials and methods: In 2018 an original anonymous survey was carried among 168 subjects from medical and 142 from non-medical universities. They filled 37 questions: general and specific regarding STI. Statistical analysis was performed using Chi-Square test, statistically significant difference was at $p<0.05$.

Results

In the group 80,6% were females and 19,4% males, with a mean age of 26,5 years. Over 73% were sexually active and almost half of them admitted risky sexual behavior in the past. Almost 16% have ever done an examination for STIs. HIV remains the best known STIs, while hepatitis B was known mainly among medical students. Three fourth students knew that STIs could be asymptomatic. Over half of the students knew that vaccinations against STIs were available and 88,6% of them heard about the HPV vaccine. There was statistical significance between the groups regarding the knowledge of diseases transferred sexually, causative agents, history of STI examination, vaccines against STIs.

Conclusions

Nearly all participants from both groups identified HIV as STIs but there are more infections of this kind that should also be recognized.Both groups have indicated the Internet as a source of knowledge about STIs and the need to acquire additional education about these diseases. To conclude, non-medical students have less awareness about STIs.

A rare case of pemphigus vulgaris in a 9-year old child

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Introduction

Pemphigus is a group of chronic autoimmune bullous diseases. The autoantibody is directed against the keratinocytes in the epidermis andeffects the skin and mucous membranes. There are two main subtypes of pemphigus: pemphigus vulgaris (PV) and pemphigus foliaceus (PF).The typical presentation of PV are flaccid vesicles on the skin and mucosa, which extend progressively and rupture easily, leaving large exposed areas. Its incidence is estimated at 0.1-0.5% of cases per 100,000 people. The disease usually affects adults and the occurrence in children is rare.

Case report

A 9-year-old patient was admitted to the Department of Dermatology, Pediatric Dermatology and Oncology Clinic of Medical University of Lodz due to the presence of numerous erosive lesions located on the oral mucosa, lips and genital area. Lesions first appeared in June 2018 on the left buccal mucosa and then gradually spread across the oral mucosa, lips, nail folds of the hands and labia minora. Unfortunately after antiviral, antifungal and antibacterial treatment no clinical improvement was achieved. Moreover the patient was diagnosed with myasthenia gravis in July 2017 treated with pyridostigmine bromide. In January 2018 thymectomy due to thymoma was performed. On admission the patient was in good condition with no signs of infection or fever. In physical examination within the oral mucosa and lips there were visible numerous erosive lesions covered with serous-purulent discharge. Within the nail folds of the hand we observed erosions partly covered with crusts. Cervical lymph nodes were swollen.The diagnosis of PV was confirmed via direct (DIF) and indirect immunofluorescence (IIF) microscopy. Indirect IF microscopy allowed detection of circulating anti-Dsg3 and anti-Dsg1 antibodies on monkey esophagus (titer 1/1280) and on guinea pig esophagus (titer 1/640). A gingival biopsy was obtained from a lesional site of the lower lip and submitted for direct immunofluorescence (DIF) testing. DIF showed linear intraepidermal intercellular fluorescent deposition IgG, IgA and complement fraction C3.A steroid therapy was initiated and disease activity partially decreased. Dapsone was also used as a steroid sparing agent, however with no satisfactory response. Finally, therapy with immunoglobulins IgG was introduced. Currently our patient is after 5th cycle of intravenous immunoglobulin IgG (2g/kg per cycle). Patient also received Encorton at a dosage of 20mg/day alternately with 10mg/day. Due to lack of complete remission of skin lesions located on the oral mucosa and labia minora during the hospitalization Dapson was prescribed once again at a dosage of 25mg/day.

Conclusions

We report a case of a child suffering from PV who presented severe and refractory oral lesions. Our case highlights the importance of including autoimmune blistering disease in the differential diagnosis, otherwise the recognition could be delayed due to the infrequency and lack of experience.

The analysis of the influence of yoga and breathing techniques on chronic skin diseases

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Introduction

Yoga is an ancient form of physical and mental exercises consisting of specific position sequences and breathing techniques. Recent studies report a possible positive influence of yoga on overall body and skin condition. Yoga and mindfulness, combined with dermatological pharmacotherapy, may help to improve skin condition by mental stress reduction and greater self-acceptance. It is worth to consider yoga as a useful tool in skin diseases management.

Aim of the study

The aim of the study was to evaluate the influence of yoga and breathing exercises on the mental stress reduction, dermatological quality of life improvement and amelioration of skin lesions in patients suffering from most common chronic skin diseases: inflammatory (psoriasis and atopic dermatitis), autoimmune (vitiligo, alopecia areata) and of other etiology.

Material and methods

We performed an anonymous questionnaire collected via social media (Facebook groups dedicated to patients suffering from psoriasis, atopic dermatitis, vitiligo, alopecia areata and people practicing yoga.) The study involved 331 responders (51.1% aged 25-45 y/o, 92.7% women, 7.3% men). In order to assess patient's quality of life a Dermatological Life Quality Index was used. Moreover, to evaluate patients' mental stress level a Perceived Stress Scale test was performed. The respondents were asked about the frequency, duration, subjective body and skin influence of their yoga training.

Results

Almost half of the respondents (51.4%) suffered from chronic skin diseases and 75.9% of them practiced yoga and breathing techniques. Non-yoga-practicing patients with chronic inflammatory skin diseases showed impaired quality of life (DLQI=7) compared with yoga-practicing patients (DLQI=12, p=0,02). In a group with autoimmune chronic skin diseases and of other etiology there was no statistically significant DLQI value difference between yoga and non-yoga practitioners. The mean scores in the PSS-10 test obtained both for patients with chronic inflammatory and autoimmune diseases regardless of their yoga practice were comparable (23-25 points).

Conclusion

Chronic skin diseases affect the entire life of patients with mental stress and unhealthy lifestyle additionally aggravating their skin condition. Yoga and mindfulness techniques became a popular method to cope with these factors, because of subjective well-being improvement. The influence of yoga on the quality of life is prominent in a group of patients with chronic inflammatory skin diseases such as psoriasis and atopic dermatitis.

Problem of zoonotic skin diseases - evaluation based on veterinary physicians clinical experience

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Introduction

More than a half Polish citizens own a pet companion. 42% declares having a dog, 26% a cat and 5% other animal. Furthermore, from one year to another, number of pet owners is increasing. Nowadays, people tend to treat their animals as full-fledged family members, sharing living space or even sleeping with them. For these reasons we assume that zoonotic skin diseases could start to become more common problem. What's worse, knowledge about the risk of transmission among owners is usually low.

Aim of the study

The aim of the study was to collect Polish veterinary physicians clinical experience about zoonotic skin diseases, establishing how common this problem is in their practice, are they aware of the risk of transmission and do they inform their patients owners when this risk occurs. Moreover, we wanted to know if vets, due to their profession, suffer from zoonotic skin diseases more often, what diseases are most frequent and how diagnosis of such diseases is made.

Material and methods

An original, anonymous questionnaire, containing 22 questions, was created on widely available "Google Forms" and sent to more than 100 veterinary physicians working in Poland. 92 answers were obtained. Vets working mainly with cattle and animals other than dogs and cats were excluded from this study.

Results

More than one third veterinary physicians says that skin disease is the main reason of the visit in more than half of all visits. Animal owners also report changes on their own skin, but it's not frequent. According to our study, almost 95% vets inform their patients owners about the risk of transmission. Almost half of all questioned vets have suffered from zoonotic skin disease at least once during their career. 21 of 47 people reported to have suffered once, 12 people twice, 4 people 4 times, one person 10 and one person even 20 times. The most common cause was Microsporum infection. From ours respondents clinical experience children tend to be the most vulnerable group and people most often get infected from cats. In veterinary practice when dermatophytosis is suspected, the decision about starting treatment (most commonly used combined topical and systemic treatment) is made after initial skin scraping investigation and the final diagnosis is made after obtaining fungi cultures. Our respondents general knowledge in the field of zoonotic skin diseases seems to be sufficient, yet only 39% of them feels that it is.

Conclusions

Results of our study shows that animal skin diseases with a risk of transmission to owners are a widespread problem in Polish veterinary private practices. The most common type of such disease is dermatophytosis (ringworm). Veterinary physicians knowledge on the subject appears to be extensive. Vast majority of owners are informed when there is a risk of transmission. Veterinary physicians as occupational group are particularly exposed to zoonotic skin diseases.

Pyoderma gangrenosum with internal involvement

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Introduction

Pyoderma gangrenosum (PG) is a rare neutrophilic dermatosis with an estimated incidence of 3-10/million people per year. Women are affected more frequently than men. PG presents as an inflammatory papule or pustule that progresses to a painful ulcer with a violaceous undermined border and a purulent base. PG usually affects only skin and extracutaneous involvement is extremely rare.

Case report

A 68-year-old woman presented to the Surgical Outpatient Department because of the nodule of left calf which rapidly evolved into an ulceration. It was treated as a furuncule with antibiotics with no improvement, and further the lesion was classified as a trophic ulcer. Due to further progression, the patient was admitted to the Oncology Department where skin biopsy did not reveal neoplastic cells. In the chest CT scan multiple nodules suspected to be abscesses were found. Diagnostic laparoscopy also revealed numerous lesions in the liver, peritoneum and greater omentum of non-neoplastic features. Finally the patient presented to the Dermatology Outpatient Department where PG was diagnosed and Dapsone was introduced. The ulceration was completely healed in 2 months. After 4 months lesions recurred, therefore the patient was admitted to the hospital, CT and MRI scans revealed multiple lesions in liver, spleen and lungs. Thanks to administered treatment - Dapsone, corticosteroids, ciprofloxacin and hydrocolloid dressings partial improvement of both ulcerative lesions within the skin and internal organs was observed.

Conclusions

PG can appear in any area, most commonly on lower limbs. There are only several dozen cases of unusual internal organs involvement of PG in the literature. The most commonly affected are lungs, liver, spleen, bones and heart. The diagnosis of extracutaneous PG is a great medical challenge, thus the patients require cooperation of different specialists and investigation for internal abnormalities.

The clinical presentation of a red face - the series of case reports

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Introduction

The term "red face" describes a localized or diffuse facial erythema which may be transient (flushing) or persistent. This is a relatively common symptom for a dermatological consultation. Although the clinical sign is straightforward, finding an underlying cause of redness may be challenging. The red face may be a normal physiological reaction to emotions, heat or physical activity. On the other hand, it may be a sign of distinct skin entity - mediated by sun photodermatosis, manifestation of internal disease or malignant process.

Case report

We present six different cases of face erythema.

1. 56-yo man with facial edematous erythema was diagnosed with the most common cause of red face - rosacea but with concomitant photosensitivity.
2. 58-yo man with an intense scaly red nose with erosions imitating rhinophyma but not responsive to anti-rosacea treatment was finally diagnosed with a rare entity – seborrheic pemphigus.
3. 91-yo woman presented with an exfoliating inflammatory plaque lesion on her right cheek resembling contact dermatitis with the further diagnosis of an extensive actinic keratosis.
4. 82-yo woman suffering from a netlike macular erythema of the face and middle-chest was diagnosed with reticular erythematous mucinosis.
5. Interestingly, in case of a 62-yo man, the diffuse erythematous facial edema was induced by the long-term systemic therapy with glucocorticoids, sun sensitivity and seborrheic dermatitis.
6. 70-yo man with the infiltrated erythematous macules and plaques on the forehead spreading to the nose and upper eyelids was primarily diagnosed with Morbihan's disease but the following biopsy revealed angiosarcoma.

These patients had been usually misdiagnosed and inefficaciously treated because of ambiguous clinical appearance. In most cases, skin biopsy for histopathology evaluation was crucial to provide the correct diagnosis.

Conclusions

In conclusion, the differential diagnosis of red face is difficult because of its comprehensiveness. It is also an important clinical problem because redness and flushing of the face may be embarrassing for the patient in everyday life. Moreover, even common skin diseases presenting with facial redness have plethora of clinical images. Although the causes of red face are usually benign, dermatologists are able to separate them from potentially life-threatening ones.

A rare case of childhood pemphigus foliaceus

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Introduction

Pemphigus foliaceus (PF) is a rare, chronic autoimmune blistering skin disease characterized by subcorneal, acantholytic blisters and when ruptured, erosion-exfoliative lesions. IgG antibodies directed against epidermal desmoglein 1 destroy the connections between the cells of the squamous layer, leading to the formation of blisters under the stratum corneum of the epidermis. The lesions are mainly located in the upper part of the chest and back, especially in the seborrheic areas as well as on the face and skin of the scalp. There is little or no involvement of mucous membranes. PF mainly occurs in adults in age of 40-60. Pemphigus foliaceus may be induced by drugs, infections, UV radiation and diet. We report a case of PF of a teenage boy which is successfully treated with immunoglobulins IgG.

Case report

17 year-old patient was admitted to the Department of Dermatology, Pediatric Dermatology and Oncology, Medical University of Lodz due to blemish skin lesions with a flaccid cover located on face, chest, back and upper limbs. The first skin taints appeared in May 2018 and therefore exacerbated on account of infection of upper respiratory tract. Patient medical history included IgA vasculitis (Henoch–Schönlein purpura) in 2010 treated with high-dose of steroids for 10 months. Steroidotherapy was complicated by arterial hypertension treated with antihypertensive drugs at the Cardiological Outpatient Department for the next two years. Because of severe obesity (BMI>35), the patient developed insulin resistance. During the hospitalization in the Department of Dermatology patient was in good general condition. A skin biopsy from lesions was performed for histopathological examination and for direct immunofluorescence staining. Additionally, indirect immunofluorescence test revealed antibodies against desmoglein 1. Both characteristic clinical and immunologic features confirmed the diagnosis of pemphigus foliaceus. Systemic and topical steroidotherapy was initiated. Due to a lack of response to treatment azathioprine was added as an adjuvant. Due to little improvement in skin lesions, treatment with intravenous infusions of immunoglobulins was added to the regimen. The patient underwent initial cycle of immunoglobulin IgG treatment with good response.

Conclusions

Pemphigus foliaceus is a disease that occurs almost exclusively in adults, is why this case is extremely unique. Due to history of internal diseases the inclusion of immunoglobulin therapy in the IgG class extended the scope of safety of patient's systemic treatment.

What makes a good dermatologist according to „muggles”?

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Introduction

Medical professions are full of patterns and personal exemplars which determine norms of behaviour. Research works focused on doctor’s image not only include reality perception, but also patients’ subconscious expectations.

Aim of the study

The aim of this study was (1) to assess the level of students’ knowledge about dermatology profession, (2) to get to know the students’ opinion on the image of the dermatologists, (3) to assess the public image of that profession and (4) what factors have the biggest impact on that issue.

Material and methods

The study was conducted in the group of 1000 polish, non-medical students (F=817, M=183) between 18 and 25 years old. The data was collected through anonymous, author-designed, online questionnaire. The questionnaire was sent via Internet social media to students from 12 various non-medical fields of study including: technical studies (163 students), economic studies (156 students), human-social studies (157 students), law studies (147 students), natural studies (122 students) and many other fields.

Results

98.8% of respondents indicated correctly what is dermatology profession, whereas 80.2% of them knew what is venereology and only 39.5% pointed out that dermatologist handles venereology too. From among suggested dermatological diseases, the majority of students associated acne vulgaris (97.8%), psoriasis (89.4%) and atopic dermatitis (86.8%) with dermatology profession. The most important dermatologist’s features were accuracy (88.5%), communication skills (77.9%) and trustworthiness (72.7%). Although gender and age of dermatologist didn’t play an important role for 52.1% of respondents, 27.7% of students prefered to go to younger woman ($p=0.001$). Interviewees considered this profession as moderately prestigious (51.6%, $p=0.01$). Only 18.9% of the respondents saw the image of the dermatologists created by media as adequately presented. There is a statistically significant difference ($p=0.0006$) between the different age groups and the frequency of visits to the dermatologist. The median sum the respondents were able to pay for a specialist visit is 100 zloty (IQR 70-150). The studying field ($p=0.002$), social status ($p<0.001$) and place of residence ($p<0.001$) significantly influenced the amount they were able to spend. 43.2% of respondents claimed that dermatologist’s work conditions aren’t harmful for health ($p=0.03$), regardless of studying field.

Conclusions

Students of non-medical fields don’t have sufficient knowledge about dermatology profession. In students’ opinion, factors like knowledge, medical experience and communication with patient have the strongest influence on image of this profession. Second strongest factor affecting the choice of a dermatologist is information passed by word of mouth, acquired from other patients and family members, without any prior verification.

Jacquet's erosive dermatitis (JED) as an exacerbated form of diaper dermatitis

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Introduction

Diaper dermatitis, known as nappy rash, is one of the most common diseases affecting gluteal region in infants, observed mainly at the age of 1-2 months. Contribution of one or several pathogenic factors such as insufficient hygiene practices, pressure and friction, moisture, alkaline pH, long-term use of antibiotics, detection of Candida albicans in faeces, diarrhea, congenital defects of urinary system and contact allergy to chemical agents present in diapers and skin care products may lead to manifestation of symptoms. In case of Jacquet's erosive dermatitis (JED), which is a rare, severe type of diaper dermatitis, erythema and papules in anogenital region are accompanied by erosion and ulceration.

Case report

A 14-month-old girl was admitted to Emergency Department of Pediatric Dermatology Clinic in Lodz, Poland. The patient presented intensified erosive lesions with bacterial superinfection localized in diaper and sacral area. Additionally, papules on extremities, trunk and in the area adjacent to the lips were observed. Clinical examination allowed to determine a diagnosis of JED with concomitant lichenification and implement treatment. The child was administered systemic oral antibiotics and antifungal treatment, apart from topical treatment with 1% solution of pioctanine. Parents were advised to provide regular change of breathable diapers and suitable periods of time during the day without them, avoid nappies containing rubber, plastic or cloth. Parental education regarding maintenance of hygiene in genitoanal area was applied. The child remains under the supervision of Outpatient Dermatology Department.

Conclusions

JED is a special and rare form of diaper dermatitis that requires personal approach and modified treatment. Particular attention should be paid to proper care of diaper area, since the severe course of the disease requires systemic treatment, which is a burden for young patients.

Clinical and dermoscopic spectrum of nail apparatus melanoma: a study of three cases

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Introduction

Nail apparatus melanoma (NAM) is a relatively rare type of a tumor, accounting for 1-3% of melanoma cases in Caucasian population. It most commonly derives from nail matrix melanocytes. NAM can affect every phalanx but the most common locations are the thumb, followed by the hallux. NAM is usually diagnosed in advanced stage, and thus, associated with unfavorable prognosis.

Case report

We report three patients (33, 58 and 84-years old) with different clinical and dermoscopic presentation of NAM diagnosed at Department of Dermatology, Venereology and Allergology, Medical University of Gdańsk.

Conclusion

NAM has a wide clinical spectrum – it may present as melanonychia, amelanotic tumor or hyperpigmentation of the nailbed. In differential diagnosis a wide range of benign and malignant conditions of nail apparatus should be concerned. Dermoscopy (onychoscopy) is a simple, non-invasive diagnostic method useful in differential diagnosis and monitoring of nail apparatus disorders. The final diagnosis of NAM is based on histopathological assessment.

What should be considered when diagnosing patients with urticaria? - inflammation parameters, selected infections and presence of autoantibodies in patients suffering from urticaria

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Introduction

Multiple underlying conditions should be considered when diagnosing subjects with chronic urticaria, including inflammation of various etiology, infection as well as autoimmune reaction.

Aim of study

To assess the frequency of abnormal results of test assessing presence of autoantibodies, antibodies against selected pathogens, and markers of inflammation in subjects with chronic urticaria. Additionally, an attempt was made to analyze the concomitant presence of different diagnostic markers.

Material and methods

The study was based on a retrospective analysis of the medical records of 108 consecutive patients (78 females and 30 males) diagnosed with urticaria (ICD-10 code L50.0 through L50.9) at the outpatient clinic of the Department of Immunology and Allergy of the Medical University of Łódź between 2014 and 2018. The patients' age range was 20-80 years. Results of the following diagnostic tests were analyzed: anti-thyroid antibodies (aTG, aTPO), anti-nuclear antibodies (ANA), antibodies against neutrophil cytoplasm (ANCA), rheumatoid factor (RF), antibodies against citrullinated peptide (aCCP), total immunoglobulin E (IgE), antibodies against selected infectious agents (HCV, HBs, H.pylori), erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP). Data processing was done with MS Excel.

Results

Diagnostic tests run most frequently were: ANA (70,37% of the patients), total IgE (54,63%), ESR (52,78%), aTG (41,67%), aTPO (40,74%), CRP (39,81%), anti-Helicobacter pylori IgG (34,26%). The same tests were also most frequently abnormal: ANA (57,89%), total IgE (37,29%), ESR (47,37%), aTG (26,67%), aTPO (29,55%), CRP (23,26%) and anti-Helicobacter pylori IgG (24,32%). Additionally, the concomitant presence of abnormal aTPO and aTG or abnormal CRP, ESR and ANA was the most frequently observed.

Conclusions

Presence of autoimmune and/or inflammatory process is frequently ascertained in chronic urticaria patients. This suggests that they should be routinely screened for basic autoimmune and inflammatory parameters in order to enable referral for specialist care.

How does psoriasis affect patients' sexual life?

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Introduction

Psoriasis is a common chronic inflammatory skin disease, which has been associated with many psychological disorders. It has been observed that depressive disorders often accompany psoriasis. There are still relatively few data about the impact of psoriasis on patients' sexual functioning, even though it has been established that this aspect of life may be impaired, in both men and women.

Aim of the study

The aims of the present study were to : (1) assess some aspects of sexual functioning psoriatic patients, (2) compare the results to the results of the control group (3) check whether there is a significant correlation between the intensity of sexual disorders and patients' age, BMI results, the duration of the disease and PASI results.

Materials and methods

The study was conducted between April 2016 and November 2018. The participants were 118 women (41 with psoriasis and 77 healthy volunteers) and 120 men (77 with psoriasis and 43 healthy volunteers). The participants' ages were between 18 and 70. For describing the severity of psoriasis, we used a Psoriasis Area and Severity Index (PASI). For determining selected sexual functions, we used Female Sexual Function Index questionnaire (FSFI) for women and International Index of Erectile Function (IIEF) for men. Statistical analysis was carried out with STATISTICA 10 PL.

Results

The FSFI result was much lower for women with psoriasis in comparison to the control group (22.3 vs. 29.81; $p<0.01$). The IIEF total score was also found to be significantly decreased in men with psoriasis (57.57 vs. 67.18; $p<0.01$). For both sexes, the statistical analysis revealed a significant correlation between the intensity of sexual disorders and 1) patient's age ($p<0.05$); 2) BMI results ($p<0.05$). There was no significant correlation between the intensity of sexual disorders and the duration of the disease and PASI results .

Conclusions

Sexual disorders are more frequent for men and women with psoriasis in comparison to the control groups. It is worth considering if the psoriatic patients' sexual functioning should be brought to people's attention in order to provide a better quality of the patients' lives.

The effect of facial cleansing gel and tonic for acne skin on the pH of the stratum corneum

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Introduction

The stratum corneum is a very important in protecting the skin against external and damaging factors. It is related to its structure, physiological exfoliation of the upper layers, acidic pH and lipid coat. Preparations for daily care of acne skin contain various chemicals that they can change pH and cause damage to the epidermal barrier. Alkalization of the epidermal pH may cause irritation, dry skin and make an environment for the development of pathogens.

Aim of the study

The aim of the study was to evaluate the effect of two gels and tonics for acne complexion on the pH of the facial stratum corneum.

Material and methods

15 healthy volunteers performed washing and toning facial skin. On one half of the face gel with SLS and tonic with alcohol was used, and on the second half - gel without SLS and alcohol-free tonic. pH measurements were carried out with Skin-pH-meter dermatological electrode before washing, 2 min after washing, then 2, 5 and 10 min after toning.

Results: The use of cleansing preparations for the care of acne skin with SLS does not significantly reduce the pH of the stratum corneum. However, the preparation without SLS significantly lowered the pH of the epidermis. The tonic with alcohol caused a decrease in the pH of the epidermis and the tonic without alcohol maintained the pH obtained after washing the face.

Conclusions

Cleaning and daily care products dedicated to acne skin should maintain the acid-alkaline balance of the epidermis so as not to damage the epidermal hydrolipid barrier.

In vivo dynamic thermal imaging of IPL treatment

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Introduction

Skin discoloration is common cosmetic problem. Many exogenic and endogenic factors have influence to the formation of melanin changes. It often affects areas that are regularly exposed to the sun. Intense pulsed light (IPL) is increasingly used for treatment of skin discoloration.

Aim of the study

The aim of the study was to measure the temperature distribution changes in response to IPL treatment.

Material and methods

Ten participants with discoloration on the hands were subjected to IPL reducing discoloration treatment. Thermographic images were recorded before, after applying the gel to the ultrasound, during and 3 min after IPL treatment. All temperature registrations were performed in the same room and under the same conditions. The treatment device was IPL 515–1200 nm Lumecca Inmode MD. That intense pulsed light device delivers up to 3X more energy in the 500-600 nm range. Thermal imaging camera FLIR T420 was used to assess skin hands temperature distribution. Temperature measurements on selected ROI before, during and after the procedure were identified and compared with each other.

Results

The results showed that skin temperature after applying the gel to the ultrasound decreased significantly. During the procedure the temperature significantly increased in relation to skin temperature after application of the gel.

Conclusions

Thermal imaging camera is a useful tool in analyzing the course of IPL treatments. It allows the registration of thermograms of the temperature distribution on the surface of the skin undergoing treatment.

Cutaneous metastases as a first sign of metastatic melanoma: a case report

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Introduction

Skin metastases occur in 2-20% of melanoma patients, being the presenting symptom in 2-8%. The diagnosis can be challenging, especially in the absence of clinically evident primary lesion. Cutaneous melanoma metastases may clinically and dermoscopically mimic other benign or malignant cutaneous lesions, therefore oncological awareness is mandatory during dermatological assessment of patients with a history of melanoma.

Case report

A 71-year-old woman presented to Department of Dermatology due to numerous, amelanotic tumors within the region of the face and scalp that appeared within the previous several weeks. Dermoscopically white-pinkish structureless areas as well as large, purple, poorly margined blood vessels were observed. Based on histopathological examination melanoma metastases were diagnosed. Radiological staging additionally revealed a metastatic lesion within the right frontal lobe. The site of primary tumor remained unknown.

Conclusion

Every fast-growing, amelanotic tumor should be verified histopathologically to exclude the presence of malignancy. The appearance of multiple skin tumors in the same anatomical region should rise a suspicion of cutaneous metastases.

EMERGENCY AND FORENSIC MEDICINE

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Investigating the best predictor of outcome in septic shock patients: the role of microcirculation

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Introduction

Septic shock is one of the most frequent reasons for admission in the intensive care unit (ICU) and is burdened with a high rate of multi-organ complications. Mortality also remains at a significantly high level, reaching 50%.

Aim of the study

We investigated diagnostic accuracy of central venous-to-arterial CO2 gap (CO2 gap), central venous oxygen saturation (ScvO2) and lactate concentration in ICU mortality prediction in patients with septic shock.

Material and methods:

Blood samples were drawn via central venous catheter and arterial cannula daily in four consecutive days after septic shock onset in 13 (8M/5F) randomly selected patients. ScvO2, lactates and pCO2 gap were assessed. Values were compared between survivors and the deceased. ROC curves were drawn and areas under ROC curves were calculated (AUC).

Results

54% subjects died. On day '1', those who died had higher pCO2 gap (Me: 11.3; IOR: 7.8-13.2) than survivors (Me: 7.35; IQR:4.0-10.4) (p=0.04), with AUC=0.786 (95%CI 0.479-0.957). Lactates were also higher in the deceased (Median: 7.5; IQR: 5.4-14.2) compared to those who survived (Median: 2.2; IQR: 1.9-4.5) with p=0.07 and AUC=0,829 (95%CI 0,511-0,978). ScvO2 played no role in prediction.

Conclusions

pCO2 gap and lactates are better predictors of the compromised outcome in septic shock than ScvO2.

The Katowice Chainsaw Massacre

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Introduction

Bile duct operations are considered as having a high risk of the compromised outcome. Patient's clinical condition is among the factors that substantially increase the perioperative risk and worsen the overall prognosis.

Case report

A 43-year-old patient injured in a workplace accident, during which a detached circular saw tooth pierced the area near the right rib arch. The CT scan revealed the damage to abdominal organs, including perforation of the duodenum and the bile duct, and the saw's tooth located in the left femoral vein. The patient was admitted to the ICU with sepsis due to peritonitis and scheduled for an urgent surgery. Laparotomy was performed and the perforations were protected. On post-procedural day '2' due to visceral wound dehiscence the patient required re-laparotomy. Due to the extent of injuries and the progression of abdominal necrosis, the patient was transferred to a tertiary university hospital in Katowice.

After subsequent ICU admission, despite implemented treatment, the patient developed septic shock (Shock Index 2.8) and required emergency 2nd re-laparotomy. The purulent bile content was evacuated from the peritoneal cavity and the torn inferior vena cava was sutured. Later 3rd re-laparotomy was required and the open-abdomen management was initiated. After 35 days of ICU hospitalization, the patient was transferred to the surgery department, being conscious, hemodynamically stable, but requiring large doses of opioid analgesia. The patient died shortly after the transfer to surgical ward.

Conclusions

Treatment of sepsis due to perforation of abdominal organs has high burden of failure. Early interdisciplinary cooperation between the anesthesiologist and the surgeon is crucial to implement the effective management.

Elderly patient with AMI

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Introduction

Acute mesenteric ischemia (AMI) is caused by sudden interruption of the blood supplying intestine. This process is leading to ischemia, cellular damage and necrosis. The incidence of AMI is increasing due to aging process, states associated with advanced age, including cardiac arrhythmias, low cardiac output congestive heart failure infarction and fragility syndrome. It is known as a state associated with a mortality of 60-80% according to worldwide and over 90% in national source. Uttermost influence on a therapy is early diagnosis and efficient treatment.

Case report

80-year-old male with a history of atrial fibrillation who presents abdominal pain from several days. In admission day complaints intensification with no reaction after NSAID. The patient reports of obstruction and coprostasis. The patient after craniocerebral trauma with poor contact. No medication admitted. As part of his emergency room the patient had a chest and abdomen X-ray. This revealed a distended intestinal loops. In laboratory findings only NT ProBNP increased level. The decision about exploratory laparotomy was made. Treatment revival totally necrotized large intestine and segmentally changed small intestine. It was decided to withdraw the surgery as a consequence of distress and fatal prognosis. The main reason was futile medical care and consequence of short bowel syndrome.

Patient was provided by sedative and analgesic medications with life-support machine. As a consequence of extensive necrosis patient died at 5:35 day after surgery.

Conclusion

This case demonstrates several key features in the evaluation of an elderly patient who presents with mesenteric ischemia. Acute ischemia of the intestine is a vascular disease of life threatened by mortality of 60-80%. This is due to difficulties in diagnosis and rapid progression of tissue destruction on the background of ischemia. Only in the early stage of the disease and tight range of necrosis results of treatment can be successful. Due to the fact poor presentation the first physician in contact with the patient should consider this diagnosis, especially in elderly. The priority should always be a quick restoration of visceral blood supply. If irreversible changes and poor prognosis are found, palliative therapy should be used especially dulling pain, instead of futile medical care.

Analysis of the types and the frequency of the injuries of the internal structures of the neck associated with the suicide by hanging

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Hanging is the most common type of suicide caused by an asphyxia secondary to mechanical compression of the main blood vessels of the neck. That process can result in various mechanical injures of the internal structure of the neck. Evaluation of these traumas may be useful in forensic investigation to reveal some circumstances of the hanging. Nonetheless, there is a discrepancy in the forensic literature concerning a frequency of the particular injuries.

The objective of the study is to determine the frequency and types of the internal neck injures associated with the suicide by hanging.

There were 1373 cases of suicide by hanging in the archives of the Department of Forensic Medicine of Jagiellonian University Medical College in Cracow in years 2008-2018. 1294 (94,25%) of them had documented full forensic autopsy, which was analyzed in terms of types of internal neck injuries associated with hanging and their locations. R software was used for statistical analysis.

We found 1082 cases with the internal injures of the neck (83,88 %), 1036 with the hemorrhages in the sternocleidomastoid muscle (80,37%), 141 cases of thyroid cartilage fracture (10,91%), 131 cases of hemorrhage in other internal parts of the neck (10,13%), 88 cases of hyoid bone fracture (6,81%), 16 cases of the carotid artery damage (1,24%), 16 cases of vertebrae fractures (1,24%), 7 cases of sternocleiodmastoid muscle rupture. The cases with the hyoid bone fracture were significantly older than the other cases (51,89 vs 47,22 $p<0,05$). The hyoid bone and the thyroid cartilage fractures were independent of each other ($p<0,05$).

The internal injures of the neck associated with hanging are very common but the prevalence of the particular injuries is widely diversed. The low prevalence of cartilage and bone fractures may indicate that causing death asphyxia is secondary to compression which is generated only by the gravity associated with the body weight. A higher frequency of the hyoid bone fractures in suicides commited by older people is probably due to the bone degeneration process associated with aging.

Simon's bleeding-analysis of the frequency and location

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Hanging is the most common type of suicide. It is associated with various marks on deceased person's body. Simon's bleeding is a vital sign of hanging and it is a type of hemorrhage localized on ventral surface of the intervertebral disks of the lumbar part of spine.
The objective of the study is to determine the frequency and location of Simon's bleeding and its association with age, gender and neck injuries.
There were 1373 cases of suicide by hanging in the archives of the Department of Forensic Medicine of Jagiellonian University Medical College in Cracow in years 2008-2018. 1294 (94,25%) of them had documented full forensic autopsy and were analyzed in terms of occurance of Simon's bleeding, and other hanging related injuries.
We found 159 cases with the Simon's bleedings overall (12,34%), 114 (71,70%) with the Simon's bleeding in the lumbar spine. The cases with Simon's bleeding were strongly correlated with internal neck injuries (the absence of internal neck injuries plus Simon's bleeding 6,19% vs. the presence of internal neck injuries plus Simon's bleeding 13,57%, $p<0,05$). Simon's bleeding was also correlated with younger age.
The intervertebral haemorrhages associated with hanging occur quite frequently and there is a correlation between them and several factors, such as age and internal neck injuries. According to literature Simon's bleeding occurs with traumatic elongation of spinal column which correlates with our finding of coincidence between internal neck injuries and intervertebral haemorrhages.

Reconstruction of the bone fracture mechanism in an aviation accident based on post-mortem imaging

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Introduction

Traveling by air increased over past few decades. The number of aircrafts increases with small single-engine airplanes representing up to 65% of them. Furthermore, single-engine airplanes hold the highest accident rate. Identification and investigation of bodies of victims involved in airplane disasters is often very difficult due to the massive damage to the body and dismembering, although it may be crucial in the investigation concerning the cause of disaster, especially in small single-engine airplanes crashes. In cases of challenging autopsies like ones of aviation disaster victims Post Mortem Computed Tomography (PMCT) may be a valuable addition to the investigation.

Aim of the study

The aim of the study is to discuss how analysis of bone fractures and other injuries may contribute to the reconstruction of events during an airplane crash.

Material and methods

Two male victims of a single-engine airplane crash, who both had valid pilot license, were firstly scanned in PMCT and then examined during a conventional autopsy. Their bone fractures described in autopsy report and in PMCT scan were analyzed.

Results

Both victims had massive, multiorgan injuries. PMCT showed that both victims presented fractures of occipital condyles, cervical spine, lumbar spine, pelvic bones and neck of femurs, which are common injuries occurring, when a vertical force acts on a body (in this case vertical deacceleration). Furthermore, both victims had fractured facial cranium bones, clavicles, sternum and distal parts of their upper extremities, which are common injuries, when a horizontal force acts on a body (in this case horizontal deacceleration). One of the victims had noticeably more injured right side of the cranium which may suggest his head collided with something in the cockpit or with other pilot. Also one of the victims had fractures in carpal bones, ulna and radius, suggesting he could firmly gripped the yoke at the time of accident, meaning he could be in control of the plane in that moment which has its implication in forensic investigation.

Conclusion

Thanks to the analysis of bone fractures images obtained via PMCT we can imagine the possible falling path of the airplane and we can presume who was in charge of controlling the aircraft at the time of the accident. Due to that, analysis of bone fractures of aviation disaster victims can be valuable in the investigation concerning the cause of accident.

Analysis of types of nooses and location of knots in cases of suicide by hanging

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Introduction

Hanging is the most common type of suicide. It can be performed using different types of materials and knots. Choice of type of noose can be determined by many factors such as accessibility or cultural influence.

Aim of the study

The objectives of the study is to determine the types of nooses and the frequency of different locations of knots in cases of suicide by hanging. We also aimed to investigate association of them with age, gender and place of suicide.

Material and methods

There were 1373 cases of suicide by hanging in the archives of the Department of Forensic Medicine of Jagiellonian University Medical College in Cracow in years 2008-2018. 1294 (94,25%) of them, had documented full forensic autopsy, which was analyzed in terms of types of used noose and location of knot. R software was used for statistical analysis.

Results

Most frequently used material was rope (615 cases; 44,79%); other types of used nooses were: cable (178; 12,97%), belt (142; 10,34%), fragment of material (47; 3,42%), part of clothing (44; 3,20%), leash (12; 0,87%), adhesive tape (16; 1,17%), band (11; 0,80%), and rare types of noose such as: wire, chain, steel rope, v-belt, fishing line, tow rope, bedclothes, bed from the bag, rubber bicycle tube, combined noose (piece of material and rope), noose made of branches, swing for children. In 266 cases (19,37%) we weren't able to establish type of the noose. There were no significant differences in gender preferences for the type of noose. People who used fragment of material were younger than others (mean age 43,56 yo vs 48,06 yo; p-value <0,05), people who used tow rope were older (60,09 yo vs 47,77 yo; p-value <0,05). People who commit suicide in hospitals used different types of nooses (the employment of rope was less frequent, the use of part of clothing and belt is more common; p<0,05).The knots were located on: the left side of the neck in 299 cases (21,78%), the right side of the neck in 258 cases (18,79%), the back of the neck – 523 cases (38,09%), the front of the neck – 23 cases (1,68%). There were 259 cases (18,86%) in which we weren't able to establish location of knot, and in 10 cases noose was put on without a knot. People who place knot on front side of neck are statistically older (mean age 54.63 yo vs 47.73 yo; p-value <0,05).

Conclusions

In our resach the most common type of noose was rope. The easily accessible types of nooses for example cable or belt were frequently used. There may be association of age and the type of employed material. Additionally, hangings that took place in hospitals were performed using different types of nooses. The most common location of knot of noose is the side of the neck.

ENDOCRINOLOGY AND DIABETOLOGY

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Adipocytokines and non-esterified fatty acids in patients with type 2 diabetes mellitus and nonalcoholic fatty liver disease depending on obesity

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Introduction

It is known, that metabolic disorders, mediated by adipocytokines (leptin, resistin), have been augmented in patients with type 2 diabetes mellitus (DM) and nonalcoholic fatty liver disease (NAFLD) with obesity. Adipocytokines negatively influence liver function and lipoprotein metabolism. This leads to non-esterified fatty acids (NEFA) accumulation, what damages hepatocyte membranes, causes progression of NAFLD and decreases hepatic insulin sensitivity.

Aim of the study

To study the role of adipocytokines and NEFA in further development of metabolic disorders and NAFLD in patients with DM 2 type.

Materials and methods.

We retrospectively analyzed results of investigation of 55 patients (19 male, 36 female) with type 2 DM and NAFLD, who were divided into two groups comparative according to age, sex and DM compensation: 1 – with body mass index (BMI) ≤29.9kg/m2 (n=21), 2 – with BMI ≥30.0 kg/m2 (n=34). Serum leptin, resistin, NEFA and circulating insulin were measured additionally using immunoassay analysis. Results were processed statistically, $p<0.05$ was settled as a level of significance.

Results

Our results indicate, that patients with type 2 DM, NAFLD and obesity in comparison with patients, who have normal weight or are overweight, have a significantly higher levels of leptin (39,90±7,61 and 13,93±3,89 ng/ml, $p<0,05$), statistically equal resistin (4,87±1,2 and3,82±0,49 ng/ml, $p>0,05$) and NEFA (0,88±0,11 and 0,90±0,12 mmol/L, $p>0,05$) levels in the background of substantially bigger level of circulating insulin (25,47±4,48 and 9,30±2,19 mkU/ml, $p<0,05$) in the blood serum. Hence, NEFA, deposited in liver due to hepatic steatosis (NAFLD), continue to circulate in the blood in case of DM type 2, regardless of body weight. Role of resistin under condition of obesity require further study.

Conclusions

Patients with DM 2 type, NAFLD and obesity have significantly higher levels of leptin and circulating insulin, associated withequal levels of resistin and NEFA than persons with BMI ≤29,9.

Ethical Committee Approval

Protocol № 6 from 29/03/2017 of the BioEthics committee of Danylo Halytsky Lviv National Medical University.

The role of insulin resistance in the development of disturbance of cognitive functions and emotional-personality responses in type 2 diabetes

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Introduction

The disturbance of cognitive sphere is an integral part of the clinical picture of diabetesmellitus (DM) that adversely affects the compliance and, consequently, the course of the disease.

Aim of the study

To reveal the features of cognitive functions and emotional-personality reactions in patients with DMtype 2 depending on the indices of insulin resistance.

Material and methods

48 patients with DM type 2 and 25 healthy individuals were examined. The Mini-mental State Examination test (MMSE, 1975), the technique of attention assessment according to the Schultz-Horbova table and the determination of cognitive-induced potentials were used to evaluate cognitive functions. To assess personal and reactive anxiety, the Spielberg Ch.D. scale, adapted by Khanin Yu.L., was used. The state of carbohydrate metabolism was evaluated by glycemic index and the levels of insulinemia and glycatedhemoglobin, the degree of insulin resistance was determined by body mass index (BMI), waist circumference index, and indices of insulin resistance of HOMA (Homeostasis Model Assessment of Insulin Resistance) and CARO (F.Caro, 1991). Mathematical processing of data was carried out using the program Primer of Biostatistics. 4.03.

Results

Moderate negative correlation was established between the MMSE-test results of patients withDM type 2 and levels of fasting glucose, insulin, HbA1c, HOMA index, BMI and waist circumference. The reverse weak correlation was recognized between the duration of DM and the MMSE-test results. Directmedium correlation was established between the latent period P300 and levels of insulinemia, HbA1c, HOMA index, CARO index, BMI and waist circumference, and the direct weak association between latent period P300 and fasting glucose level. A direct moderate correlation of the reactive anxiety index with HOMA index, BMI, duration of basic disease, insulinemia, waist circumference was established, and the reverse association – withCaro index. A direct moderate association was found between the rate of depression and the level of HbA1C, insulinemia, HOMA index and BMI.

Conclusions

Intellectual-mnemic disorders in case of DM type 2 are associated with body mass index, waist circumference, carbohydrate metabolism and insulin resistance indices, while showing a weak dependence on the duration of the disease. The parameters of reactive anxiety and depression in patients with diabetes type 2 depend on the compensation of the disease and insulin resistance, while personal anxiety is not related to the indicated parameters.

Seasonal patterns of glycemic variability in paediatric patients with type 1 diabetes mellitus

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Introduction

Self-monitoring of blood glucose (SMBG) is the mainstay of successful therapy of type 1 diabetes mellitus (T1DM). Application of Continuous Glucose Monitoring Systems (CGMS) allows for increased frequency of SMBG (in 5-minute intervals). This method enables the patient to dynamically measure glycemic changes, described by glycemic variability (GV) indices.

Due to increased use and better sensors used in CGMS devices, it is now possible to evaluate harmonic and seasonal nature of GV using long term CGMS records.

Aim of the study

Determination of glycemic variability (GV) indices' seasonal and harmonic nature, and its dependence on meteorological conditions specific for time of registration.

Material and methods:

Continuous Glucose Monitoring System was used to register glycemic levels in group of 29 patients, from November 2015 to February 2019. Patients included in the study were <18 years, had clinically confirmed T1DM lasting for least 6 months and were treated using insulin pump. Mean duration of a CGMS recording was 438 days (+/-275 days).
CGMS data was synchronised with meteorological data specific for time and place of registration. GlyCulator 2.0 was used to calculate glycemic indices for each patient.

Influence of meteorological factors on GV indices was assessed using Pearson correlation. Unsupervised classification of patients was performed using k-means clustering. Differences in GV indices between selected groups were confirmed using ANOVA with Tukey-Kramer's post-hoc.

Results

Power spectrum analysis showed a clear periodicity of 3, 6 and 12 months for both glycemic variability (GV) indices and meteorological data.
Clustering identified three distinct groups of patients, with the main differentiating factor being the correlation of GV changes and mean daily temperature. Differences in GV indices between the three groups were significant, with mean glycemic levels [1: 132mg/dl (95%CI 131-133mg/dl), 2: 136mg/dl (95%CI 135-136mg/dl), 3: 127mg/dl (95%CI 125-128mg/dl), p<0,0001] and coefficients of variation measured using full CGMS-records [1: 28.50% (95%CI 28.20-28.80%), 2: 30.31% (95%CI 30.04-30.58), 3: 32.59% (31.99-33.20%), p<0,0001].

Conclusions

Changes in GV indices indicate important inter-personal differences between patients evidencing patient-specific seasonal trends of GV. Evaluating patient-specific profile of seasonal changes may have implications on both clinical assessment and research concerning patterns of GV changes in childhood T1DM..

The impact of non-diabetic hypoglycemia on development of diabetes type2

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Introduction

There are many different reasons for the manifestation of hypoglycemia, of which the frequency has not yet been investigated in Slovenia. Usually this is not a serious health condition, but clinical picture can be sometimes diverse and can lead to excessive examination from many different specialists.

Aim

We aimed to define causes for hypoglycemia in individuals admitted at the University Medical Centre Ljubljana outpatient clinic. In addition, we proposed to determine frequency, clinical, laboratory and psychological features of postprandial hypoglycemia (PH). Additionally, our aim was to characterize PH as one of the risk factors for the development of diabetes type 2 (DM2). Furthermore, we also analysed the level of anxiety in people with PH.

Material and methods

The research had two parts. In the first part, we reviewed medical files and defined characteristics of all the individuals that were admitted to the University Medical Centre Ljubljana outpatient clinic with the suspicion of hypoglycemia in years from 1994 to 2017. In the second part, individuals with PH were invited to a follow-up visit, where 5h- oral glucose tolerance test (OGTT) was repeated. Hypoglycemia was defined as glucose concentration < 3,5 mmol/l. For the reason of homogeneity, we invited only women. We also included a control group of healthy women of similar age, for the comparison. Differences between groups were assessed with independent samples T-test or paired-samples T-test, as appropriate. Mann-Whitney U-test or Chi-square were used for non-normally distributed variables.

Results

From 198 subjects observed, insulinoma was confirmed in 1,5%. PH was suspected in 143 subjects (age 41±13 years, BMI 25±5 kg/m2, HbA1c 5,4±0,5%). In those, peak glucose concentration was reached in 30th minute (7,8±1,8 mmol/l), and peak insulin concentration in 60th minute (58 mU/L (40 mU/L, 88 mU/L)) of the OGTT. Hypoglycemia occurred most frequently in the 180th minute or later. Subjects with impaired glucose tolerance (IGT, n=16) had higher glucose concentrations in the first 180 minutes, compared to those with normal glucose tolerance and higher insulin concentration between 120th and 240th minute ($p<0,05$). Both, subjects with IGT and insulin resistance (HOMA >2,5), were less likely to develop hypoglycemia ($p=0,04$). At the follow up visits after 5,7 ± 3,9 years (n=26), there were no cases of newly developed DM2. Interestingly, the control group (n=6) developed hypoglycemia in 83% during OGTT and had comparable incidence of anxiety with subjects with PH.

Conclusion

PH is the most common cause of non-diabetic hypoglycemia in the out-patient clinic setting. In this population, after follow up of 5,7 ± 3,9 years, no cases of DM2 occurred. Frequency of glucose stimulated hypoglycemia and incidence of anxiety were similar in PH and in the control group. Insulinoma is a relatively frequent presenting diagnosis in people with suspected hypoglycemia

Predictors of severe hypoglycemia in adults with type 1 diabetes with focus on questionnaire-assessed impaired awareness of hypoglycemia

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Introduction

Recognizing prodromal symptoms of hypoglycemia is crucial for patients using insulin to self-treat and thus prevent severe hypoglycemia. In those with type 1 diabetes (T1DM) this ability often deteriorates leading to impaired awareness of hypoglycemia (IAH). In clinical practice, IAH can only be recognized by question-based tests. However, the value of those questionnaires in predicting occurrence of severe hypoglycemia in modern cohorts of patients has not been defined.

Aim of the study

Evaluation of the severe hypoglycemia incidence and its risk factors with focus on questionnaire-assessed IAH.

Materials and methods

A total of 449 outpatients attending diabetes clinic in 2017 completed two standardized questionnaires to determine presence of IAH (by Clarke and Gold). Participants also reported any episodes of severe hypoglycemia (loss of consciousness) experienced in the preceding year. During the visit, routine measurements were performed: weight, height, glycated hemoglobin (HbA1c) and insulin doses were recorded. Retrospectively, mean HbA1c was calculated for all available measurements from the last year. Mean and standard deviation of glycemia were calculated from data downloaded from patients' glucose meters. Patients who were using any type of continuous glucose monitoring or provided incomplete data were excluded from the study.

Results

The analysis included 393 patients [median age 26.4 years old (25-75%:21.2-31.4); median diabetes duration 14.3 years (25-75%:9.9-19.3), median HbA1c 7.5 (25-75%:7.8-8.2%), 58.5% treated with continuous subcutaneous insulin infusion (CSII)]. Severe hypoglycemia was reported by 6.6% patients. Those who experienced severe hypoglycemia presented higher prevalence of IAH according to Clarke (13.1% vs 3.4%, p=0.0008) but not Gold questionnaire (8.1% vs 5.8%, p=0.4000). Multivariate logistic regression revealed that both standard deviation of glycemia (OR=1.016, 95%CI:1.001-1.036, p=0.038) and IAH recognized by Clarke criteria (OR=3.584, 95%CI:1.509-8.512, p=0.004) were independent predictors of severe hypoglycemia, after accounting for model of treatment and age.

Conclusion

IAH identified by Clarke survey predisposes to hypoglycemia-associated loss of consciousness more than impaired awareness determined by Gold questionnaire.

Finding a method to choose the best insulin pen in patients with hand function impairment.

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Introduction

Rheumatic diseases often have a major impact on a daily life. Accomplishing certain tasks may be hard or even impossible for a patient. Therefore it is important when administering diabetes treatment of such patient, to consider the many specific problems they may have. Hand function which often is poor in patients with rheumatic diseases is crucial for injecting insulin. Therefore the aim of our study was to investigate which insulin pen device is the most applicative in patients with hand function difficulty.

Methods

Studies was conducted in Rheumatology Clinic of Medical University of Lodz. 15 patients with rheumatic diseases have been included into the research.

Exclusion criteria were as follows: any experience in using insulin pen injectors; employment in healthcare or pharmaceuticals.

We measured the level of disease activity and the level of hand function deterioration in the study group based on the medical history, Clinical Disease Activity Index (CDAI), Simple Disease Activity Index (SDAI), Disease Activity Score (DAS28), Steinbrocker staging system for radiographic assessment of the hand and wrist, Health Assessment Questionnaire (HAQ) and Duruöz Hand Index (DHI).

All the patients underwent a test of three commonly used insulin injectors: Gensu Pen, Novo Pen 4 and HumaPen Luxura. Patients performed a specific series of tasks witch each insulin pen injector at two doses into a foam. For the high and low doses, subjects dialled up to 10U and 2U. Each subject completed the injection series two times (once for each dose) for each pen injector. The order of dialling doses, as well as the order of insulin injectors were randomized.

Every patient filled the questionnaire, assessing at the scale from 1 to 5 the manageability of each injector at every stage of the injecting sequence. The researcher also graded patient's performance on separate questionnaire. Obtained results from questionnaires were compared to standards. The statistical analysis of obtained data was made with STATISTICA software.

Results

ANOVA Friedman test did not show differences between ability to use insulin injectors in all patients included in study. However chosen group with the biggest hand impairment showed statistically significant difference in ability to use specific pen injectors according to ANOVA analysis.

Conclusions

There are three commonly used insulin injectors: Novo Pen 4, GensuPen and HumaPen Luxura. Suggested questions may be a good indicator for excluding injectors not suitable for patients with specific hand function impairment.

Comparison of classification systems used in thyroid nodule evaluation

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Introduction

Thyroid nodules are a common finding in clinical practice, with low incidence of malignant lesions, up to 5%. Ultrasonography is the diagnostic tool available for the initial work-up of thyroid nodules. A number of classification systems have been developed that use composite patterns of ultrasound findings to estimate the likelihood of malignancy and to identify nodules that should be scheduled for fine needle aspiration (FNA) biopsy.

The Aim

Evaluate the nodules based on their ultrasound features using ACR TI-RADS and EU TI-RADS scoring systems, notice the difference between these classifications when selecting nodules for FNA and to compare cytological results of FNA regarding the TI-RADS classification systems.

Material and Methods

The study is a retrospective analysis of the medical data obtained from subjects who have been referred to the Clinic for endocrinology, metabolic disease and diabetes of the Clinical Center of Vojvodina in Novi Sad, during 2018. in order to do FNA. Prior to FNA, an ultrasound examination was conducted and TI-RADSwas determined using both ACR and EU TI-RADS scoring systems.

Results

30 (22.7%) nodules were put in different TI-RADS risk categories using the two systems. Indication for FNA differed in 12 (9.09%) cases of which in 8 also existed a difference in TI-RADS categories while using different classifications.

Conclusion

There is a statistically significant difference when assigning to TIRADS categories between the systems. Though EU TIRADS advised FNA in a significantly higher number of cases, in none of the cases where the recommendation for FNA differed, a pathological biopsy result was obtained. It can be concluded that the EU TI-RADS system is more strict than ACR TI-RADS system since it advises FNA more often, but doesn't contribute to higher rate of detection of the malignant nodules.

Clinical characteristics of patients referred for HNF1B testing - Polish population study

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Introduction

Patients with heterozygous mutations of HNF1B typically develop renal cysts and diabetes syndrome (RCAD). However, the extent of pancreatic and renal involvement may vary, and additional manifestations often broaden the phenotypic spectrum. We analyzed probands referred for HNF1B testing, comparing patients with and without genetic diagnosis.

Methods

Probands tested for HNF1B in years 2005-2018 were selected from Polish Registry for Pediatric and Adolescent (N=50). All genetic findings were reassessed according to the criteria of the American College of Medical Genetics and Genomics (ACMG). A structured medical interview was performed with all available individuals and/or their physicians. Patients without clear indication for HNF1B testing at referral (diabetes and renal abnormalities or family history for those conditions) were excluded. For each patient, HNF1B-score was calculated based on available clinical information.

Results

The study included 36 unrelated probands (28% lost to follow-up): 15 with pathogenic or likely-pathogenic variants in HNF1B (six whole-gene deletions, one indel, five single nucleotide variants), one with a variant of uncertain significance and 21 negative for HNF1B (four with non-HNF1B findings in GCK, PKD1, KCNJ11 and HNF4A). HNF1B-score with literature-based cut-off distinguished patients with and without HNF1B findings with 100% sensitivity and 47.6% specificity. Presence of polycystic kidneys (OR=9.17, 95%CI:1.87-44.92), pancreatic abnormalities (OR=15, 95%CI:1.55-145.23), elevated liver enzymes (OR=15, 95%CI: 1.55-145.23), best discriminated HNF1B-positive cases from the negative ones. Presence of impaired glucose metabolism coupled with kidney disease in one parent was also (OR=4.5, 95%CI: 0.89 – 22.67) suggestive of HNF1B-findings. Adding these features to HNF1B-score decision tree improved specificity to 71.4% while retaining 100% sensitivity.

Conclusions

Patients referred for HNF1B testing present very heterogenous phenotypes. Despite suggestive characteristics, many do not harbor mutations in HNF1Bwarranting further investigations into the genetic basis of the RCAD syndrome. Detailed medical interview may enable more accurate patient selection for targeted genetic testing.

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Type 1 diabetes mellitus and neurological disorders including autism spectrum – is there a link?

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Type 1 diabetes (T1D) is an autoimmune disease of a very heterogenous pathogenesis. It affects over 18 000 pediatric patients in Poland. The treatment with insulin injections or infusion is complicated and requires cooperation with the patient and its parents. What makes it harder, some of the children suffer from additional neurological and psychiatric conditions such as autism spectrum disorders (ASD) that can affect the whole process. It is possible T1D and these disorders might have common immune-mediated and/or genetic background.

The aim of the study was to evaluate the prevalence of neurological disorders in children with T1D.
The study included children with both T1D and neurological disorders that were identified by a retrospective chart review of all children with T1D (n= 615) treated in Diabetes Outpatient Department of Konopnicka's Paediatric Centre of Medical University of Lodz. The data collected included age, age of diagnosis of both T1D and neurological conditions, level of T1D specific auto-antibodies (ICA, anti-GAD), level of glycated haemoglobin (HbA1c), other autoimmune and non-autoimmune comorbidities as well as detailed family history. T1D was confirmed by the presence of autoantibodies in all included patients. Coexistance of both T1D and additional neurological disorder was identified in 18 children (3%). In addition, 5 patients from the Clinic, but not outpatients, were added to our research. The most common was epilepsy (n=8), before autism spectrum disorder (n=6) and oligophreny (n=3). In 2 children both epilepsy and oligophreny was diagnosed. Other diagnoses included seizure disorders in EEG (n=2), De Grouchy Syndrome (n=2), ADHD, demyelinating polyneuropathy and encephalopathy. The mean age was 13.7, Me=14, SD= 4.51. The mean duration of diabetes was 7.5 years [SD=4.65] and mean age of diagnosis 6.3 [SD=4.46]. In 12 patients (52%) diagnoses were made before the onset of diabetes, 7 (30%) after and in 3 of them simultaneously with T1D. In 1 patient the onset of neurological disorder is not known. Boys constituted 61% of the group (n=14), 12 (86%) of them presented non-neurological comorbidities. 82% (n=19) positive had positive anti-GAD. 48% (n=11) of patients suffered from at least one accompanying immunological disease: subclinical hypothyroidism (25%), celiac disease (25%) and allergies (9%). Mean HbA1c in patiens from the Clinic was 7.99 [SD=1.46], which is worse than in Polish T1DM children population- 7.1 (p=0.01), with only 3 children achieving the ISPAD Consensus Guidelines 2018 HbA1c<7%.

It seems that neurological conditions are more common among children with T1D than in general population. Despite parents additional care, those children may have poorer metabolic control. It is important to take a closer look at this group children with diabetes type 1 regarding possible common pathogenesis as well assessment of metabolic control in those patients.

GYNECOLOGY AND OBSTETRICS

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The attitude of Polish women planning pregnancy and having children towards vaccinations

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Introduction

Vaccinations are currently the best method of preventing infectious diseases. Some infectious agents known as TORCH can cause serious fetopathy. Some of them can be avoided by implementing appropriate prevention while planning pregnancy. Every pregnant woman should be vaccinated against: influenza, MMR, dTap, varicella, Hepatitis B.

Aim of the study

The aim of the study was to examine the attitude of women planning pregnancy or having children towards vaccinations.

Material and methods:

It was a cross-sectional survey study. The questionnaire investigated the socio-economic status of women planning pregnancy or having children, their attitude towards vaccinations and willingness to vaccinate their children. The attitudes towards anti-vaccine movements and "smallpox party" were also checked

Results

The studied group consisted of 2402 women, age range was 16-54 years (median: 31 years). The most numerous group were women from cities > 100,000 inhabitants (49.7%) and with higher education (71.9%). Positive attitude towards vaccinations was more common among younger (p=0.002), nulliparous (p=0.004) women from big cities (p=0.01). 80.4% of women were not vaccinated during pregnancy, and 86.1% did not vaccinate before pregnancy. 64.3% of women considered vaccination safe, and 79.3% said they were effective against infectious diseases. 74,1% knew that infectious diseases can cause fetal defects. Among the 5 most-feared pathogens, the following were distinguished: Toxoplasma gondii (78.3%), Rubella virus (66%), CMV (52.3%), Treponema pallidum (43,3%), HSV (34.4%). 55% of women totally disagreed with the anti-vaccine movements, 22.9% partially agreed, 11.8% had no opinion, and 6.2% fully agreed. Regarding the so-called "Smallpox party" as many as 80.4% of women considered this phenomenon to be dangerous for children's health, 12,3% had no opinion, and 3,9% considered it a good way for children to acquire immunity.

Conclusions

Most women in Poland have a positive attitude towards vaccination, consider vaccines safe and effective against infectious diseases. A significant proportion of women planning to become pregnant or being pregnant is not vaccinated, the role of physician leading the patient to be vaccinated is crucial in this matter. About 12% of women are the undecided fraction, and the educational role of physicians is essential to convince them of the importance of vaccination.

Myths versus facts - awareness about contraception within the group of Polish women. A questionnaire study.

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Introduction

Inadequate and insufficient provision of the sexual education is still current problem in Poland. Years of negligence on this issue have contributed to establishment of various myths and misconceptions regarding contraception among society. These may lead to unintended pregnancies.

Aim of the study

The aim of study was evaluation of knowledge amongst polish woman on persistent contraception myths and misconceptions.

Material and methods:

The online anonymous questionnaire survey about pregnancy prevention was placed on websites about maternity and gravidity. The survey was composed of 20 questions and 2751 females in age group 18- 45 years old responded to it. The respondents were divided into groups depending on age, degree or level of compleated school and place of residence. Number of correct answers was counted and the results were compared between the groups. For the statistical analysis Chi-squared test and Cramér's V were used.

Results

The survey disclosed that barrier contraceptive methods as used the most frequently however, hormonal contraception was stated the most effective way of pregnancy prevention. Nearly all of asked women (approximately 95 %) are aware that there is no fully effective birth control method. Collected survey responses did not support that part of the myths currently exist. For example coitus interruptus as an adequate way for preventing pregnancy. Other misconceptions like not recognizing the difference between an “emergency contraception” and an “abortion pill” are widely spread. The age, degree or level of compleated school and place of residence had no statistically significant impact on the number of correct answers given in the survey.

Conclusions

Due to the education majority of myths and misconceptions connected with contraception were eliminated. Level of awareness about contraception is not dependent on women’s age, degree or level of compleated school and place of residence.

Methylsulfonylmethane (organic sulfur) induces apoptosis in endometrial cancer cells

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Introduction

Endometrial cancer (EC) is considered to be the commonest gynecologic malignancy. It is also fourth of the commonest cancers in women in Europe and Poland. In order to increase the effectiveness of the known therapies used in the treatment of EC, especially type II associated with higher metastasis and worse prognosis, a lot of studies have tested the possible anti-cancer properties of natural compounds.

Methylsulfonylmethane (MSM), an organic sulfur, is a small organic compound classified by Food Safety Agency (FDA) as safe due to its low toxicity in humans. It is easily available for consumers as a supplement. A number of in vitro studies have shown that MSM is a strong anti-inflammatory, anti-oxidant and anti-cholinesterase agent. MSM was also reported to reduce migration, decrease angiogenesis and differentiation of breast, prostate and bladder cancer cells. It is also believed that MSM might be used simultaneously with well-known anti-cancer agents

Aim of the study

The aim of the study was to verify if MSM might induce apoptosis in endometrial cancer cells.

Material and methods:

The study was conducted on three endometrial cancer cell lines Ishikawa, MFE-280 and MFE-296 which represent a different in vitro models of EC: well differentiated, poorly and moderately, respectively. Cell lines were cultured according to the recommended protocol. Cells were treated with MSM for 24 h (50-800 mM). Non-treated cells were used as a control. Cell viability was estimated by three different methods: with WST-1, MTT and AlamarBlue reagents. Apoptosis was determined with Muse™ Annexin V & Dead Cell Kit. In order to observe the morphological changes in cells nuclei, the DAPI staining was performed. Statistical analysis was conducted in Graph Pad Prism software. One way ANOVA was used to calculate statistically significance. $P<0.05$ was considered as statistically significant.

Results

All three methods confirmed that MSM significantly reduced viability in all cell lines in dose-dependent manner. Ishikawa cells turned out to be the most sensitive to MSM, while the most resistant were MFE-280 cells. The differences in survival among each cell line in response to MSM may indicate that the most sensitive EC cells are those one which are well differentiated. In all three cell lines a statistically significant ($p<0.05$) increase in the number of apoptotic cells was observed. The induction of apoptosis was associated with the fragmentation of DNA observed in DAPI staining.

Conclusions

The results of this study suggest that MSM may induce apoptosis in EC cells, which was associated with fragmentation of DNA. The possible usefulness of MSM in EC therapy needs further studies to be confirmed.

Pregnancy modification in case of Ebstein disease

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Introduction:

Ebstein's anomaly is a rare congenital heart defect that arises from the aberration in myocardial development.

This causes the characteristic abnormalities in the structure and function of the heart. The distinctive feature of the malformation is the displacement of the attachment points of the septal and posterior leaflets of the tricuspid valve towards the ventricular apex. In this way, the right atrium is enlarged and the right ventricle is divided into 2 parts: the bigger one - the atrialised right ventricle and a smaller, functional part. The leaflets are often dysplastic (the posterior one is elongate, sail-shaped). This leads to tricuspid regurgitation. The most common associated defect is pulmonary stenosis or atresia. All these changes can lead to cardiomegaly, lung hypoplasia, heart failure of the fetus or even intrauterine demise. Based on fetal echo cardiac diagnosis could these natural cause be changed by any modification?

Case report:

A 39-year-old multigravida, multipara had in the 25th week of gestation detection of congenital heart disease. The prenatal echocardiography exam showed fetus with Ebstein's anomaly, pulmonary valve atresia and the cardiomegaly. Due to the complexity of the heart defect, the intrauterine Digoxin and steroid treatment has been started. Unfortunately, the side effect of Digoxin (tachycardia) forced to end the supplementation.

Subsequent fetal echocardiographic examinations showed that the fetus is too small to gestational age, has hydrops testis and fetal myocarditis. An oxygen test was positive. The oxygen therapy has been ordered (4 times per day for 10 minutes).

The male newborn was born at 40 weeks of gestation by cesarean section due to the transverse position with birth weight 2860g and 8/8/8 points in Apgar score. From the first day of life, the newborn was breathing spontaneously despite cardiomegaly in X-ray. On the 11th day of life, the newborn underwent cardiac surgery in the same hospital; tricuspid and pulmonary valves have been reconstructed by cardiac surgeon with special tissue called cormatrix. The newborn was discharged on the 27th day after the surgery in a good general condition.

Conclusions

Despite the fact that there are no recommendations for intrauterine therapy for fetal Ebstein's disease, this case shows the possibility to choose the best way for before delivery fetal treatment, which was the combination of Digoxin, steroids and maternal oxygen therapy and early neonatal experimental cardiac surgery.

Interdisciplinary surgical and urogynecological treatment of recurrent bladder cancer

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Introduction

In Poland, bladder cancer is the fourth most commonly detected malignancy among men and the eighth among women. Most often it is diagnosed among people older than 50 years. Sarcomatoid urothelial carcinoma is a rare, aggressive variant of bladder cancer with poor prognosis. Even after a radical surgery and chemotherapy, only few patients survive for more than a year. The treatment is often palliative and intended to improve the patients' quality of life.

Case report

A 56-year-old patient, with a 15-month history of disease, was admitted to the hospital with diagnosis of a second recurrence of sarcomatoid urothelial carcinoma of urinary bladder in the area of urethra and vaginal vestibule. Previously, laparotomy, hysterectomy with uterine adnexa, cystectomy and bilateral ureterocutaneostomy were performed. Currently, an exophytic tumor was diagnosed in the area of urethral part of vagina and vaginal vestibule. Moreover, inflammation of tissue located around the cancer was increasing sanitary problem. A palliative, radical colpectomy and vulvectomy were performed from abdominoperineal access. The size of the tumor and necessity of its removal around healthy tissues caused a defect of deep pelvic muscles. There was no possibility to suture pelvic without the tension of its muscles. Wound sutured only by approaching subcutaneous tissue and skin, posed a risk of subjecting the pelvic floor to excessive visceral load, which could lead to a hernia in this area and subsequent prolapse of the intestines. After an oncological part of the surgery, it was decided to strengthen the pelvic with completely resorbable (within 6 months) implant of polydioxanone, which was spread without exerting pressure in the pelvic. The edges of the implant were sutured to the tendinous arch, while the edge adjacent to the rectum was appropriately shaped, allowing a correct intestinal passage. The surgery was performed without complications, and after one week of hospitalization, the patient was discharged home in a good condition.

Conclusions

Rare diagnosis of sarcomatoid urothelial bladder carcinoma is characterized by poor prognosis with progressive decreasing comfort of life. Treatment is mostly only palliative. In that case, an unusual combination of urogynecology and oncology surgery technique was successfully performed. An infected and disintegrating neoplastic lesion was removed around healthy tissues, that limited progression of cancer and improved sanitary conditions. The use of a modern implant (mesh) to strengthen the defect of the pelvic floor allowed for the prevention of a hernia with a limited risk of erosion and related complications.

Women's knowledge about breast cancer prevention, with particular attention to pregnancy and lactation period

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Introduction

Pregnancy-associated breast cancer (PABC) affects approximately 1 in 3000 pregnant women. The diagnosis of PABC is particularly challenging. Therefore women, also pregnant or breastfeeding, should be educated about the importance of the preventive actions they should take to increase the chances of avoiding this disease or at least diagnosing it at an early stage.

Aim of the study

To assess the knowledge of women between 20 and 50 years of age about breast cancer prevention, with particular attention to gestation and lactation periods.

Material and methods:

A questionnaire survey consisting of 54 question, divided into 4 sections concerning: demographics, respondents' knowledge about breast cancer (BC) and its prevention, individual risk factors and performed preventive actions, also during pregnancy and lactation. The questionnaire was available in social media from November till December 2018.

Results

1336 properly filled out questionnaires were obtained, including 911 filled out by women pregnant at present or/and in the past. 85.8% of respondents are aware that breast cancer is the most common malignancy among women in Poland. The Internet is the source of information for 91.4% of women, doctors – for 50.8%.

According to respondents the most important risk factors of BC were: genetics – 94.8%, hormonal contraception – 43.2%, older age – 30.2%, unhealthy diet – 48%, obesity – 24%.

Breast self-examination is performed by 69.3% of respondents, however, once a month only by 40% of this group.

63.5% of women have never had breast examination performed by a doctor, 44.6% - have never had breast ultrasound.

88.9% of respondents know breast cancer may occur during pregnancy and/or lactation. 99% declare that breast self-examination should be performed during pregnancy, 97.3% - during lactation. However, only 51.8% of women pregnant at present and/or in the past and 54.8% of 704 women with a history of breastfeeding, were actually performing breast self-examination during those periods. 21% of respondents had their breast examined by gynaecologists during their obstetric appointments. 16.2% of women had breast ultrasound during their pregnancy, 17.2% - during lactation.

Conclusions

Women's knowledge about risk factors of breast cancer is not sufficient. Even though most of them are aware of preventive actions, this knowledge is not put into practice, unfortunately - also by gynaecologists. There is a constant need for educational actions about breast cancer prevention. Considering the majority of women claimed the Internet as their primary source of information, social media appear to be an appropriate channel to reach them.

Prevention is better than cure - can we avoid complications of the premature constriction of the ductus arteriosus?

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Introduction:

Premature closure or constriction of the ductus arteriosus is a rare phenomen which may lead to severe cardiological complications of a foetus. In most cases it has been described secondary to structural lesiones, maternal treatment by nonestoridal anti-inflammatory drugs or corticosteroid. Furthermore, it has been reported the impact of food containing polyphenols, which, when consumed by pregnant women, might influence the endothelium and cause premature closure. Numerous cases are defined as idiopathic. Fetal echocardiogaphy reveals a lack of flow through the ductus arteriosus and secondary disorders such as chamber disproportion caused by enlargement of the right atria and ventricle, tricuspid and pulmonary valve regurgitation.

Case report:

This case report concerns a patient, gravida 4 in the 35th week of pregnancy admitted to the hospital due to a suspected foetal heart dysfunction. During the echocardiography, the symptoms of Botall's duct occlusion or critical stenosis of the pulmonary valve were observed. Given this, a delivery through a C-section was recommended. A neonate was born in a good condition. Cardiological examination excluded suspected stenosis of the pulmonary valve. However, thickening of the front wall of the right ventricle and the ventricular septum were detected. Additonally, the electrocardiography revealed repolarisation disorder. The mother and neonate were discharged from the hospital on the 9th day and asked to return for further cardiological observations.

Conclusions:

Foetal echocardiography is an invaluable test to aid a proper diagnosis and control the condition of the heart in case of a suspected congenital heart defect. Premature closure of the ductus arteriosus is associated with a severe prognosis and may lead to heart failure, hydrops, neonatal pulmonary hypertension, and even death. Strict surveillance helps determine the intervention time and, consequently, has a distinct benefit to child's condition after delivery.

Unexplained Postpartum Weight Loss

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Introduction

Postpartum weight loss is a common physiological occurrence due to breast feeding as well as increased physical activity, stress and lack of sleep. Standard weight loss is 6 kilograms in 6 months. Excessive weight loss is due to multiple underlying diseases that must be assessed.

Case report:

A 23 year old woman comes to her primary care physician with concerns of excessive weight loss of 10-12kg, after the birth of her child in July. The patient breastfed her child until January yet continued to lose weight afterwards. During the pregnancy, there were no significant complications in the health of the mother or the child. The patient lives a normal to moderate lifestyle, with a daily caloric intake ranging between 2000-2500 calories. The patient has no significant past medical medical history and is currently not taking any medications. A complete blood count, glucose, lipid profile, creatinine and liver function test were ordered and came back with no significant findings. Thyroid function test rules out hyperthyroidism as a cause of significant weight loss. A lack of pathologic cause leads us to believe that the physiological role of breast feeding on weight loss has a higher influence than expected for this patient. While breast feeding, the basal metabolic rate of the mother increases by approximately 15-25%. Due to the increase in BMR, the mother's caloric intake is suggested to increase by 400-500kcal per day for the first 6 months after delivery. The increase in daily calories helps maintain a nutritious lactate, along with a decrease in physical activity.

Conclusion:

Breast feeding and stress are a few of the factors for excessive weight loss postpartum, when all pathologies are ruled out, such as hyperthyroidism, malignancies, infection and malabsorption related disorders.

Untypical ovarian manifestation of granulomatosis with polyangiitis

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Introduction

Granulomatosis with polyangiitis (GPA) is a type of antineutrophil cytoplasmic antibody (ANCA)-associated vasculitis (AAV). AAV are a group of necrotizing systemic vasculitis, affecting small- and medium-sized blood vessels (capillaries, arterioles and venules). AAV may involve any organ, such as the lungs, kidneys, skin, brain gastrointestinal tract, or even testicles and ovaries. Typical findings in GPA include changes in upper respiratory tract (haemorrhages, stuffiness, nasal crusting, epistaxis) and often renal impairment (e.g. necrotizing glomerulonephritis). Rarely, inflammatory changes in the course of GPA may resemble tumours. Such a lesion, together with its untypical localization (e.g. within the reproductive system), may cause misdiagnosis and a delay with initiation of proper treatment.

Case report:

A 48-year-old woman was admitted to hospital due to severe pain in the lumbosacral region, hydronephrosis of the left kidney with dilation of the left ureter caused by outside infiltration. She presented with signs of infection (fever, increased CRP and PCT), but both urine and blood culture examination came back negative. The patient underwent gastroscopy, colonoscopy and non-contrast abdominal CT. Fluid in abdominal, pleural and pericardial cavity was found. Due to a suspicion of disseminated ovarian cancer (lesion with calcification, ROMA 96,7%, possible infiltration of the left internal obturator and iliopsoas muscle), she was consulted by a gynaecologist. Nephrostomy of the left kidney was performed with no urine outflow. Due to the lack of diuresis, primary renal diseases were investigated and, after a nephrological consultation, tests for PR3-ANCA and MPO-ANCA were conducted. Due to increasing renal parameters, a haemodialysis catheter was placed. After haemodialysis, patient's general state improved. The patient underwent diagnostic laparoscopy with removal of left uterine appendages. The peritoneum was intact and with no signs of infiltration. The results of the laboratory tests came back after the surgery and both MPO and PR3-ANCA were found, which gave the diagnosis of vasculitis, suggesting GPA. The patient was treated with cyclophosphamide and methyloprednisone, followed by prednisone. The patient was haemodialyzed 3 times a week. She was re-hospitalised due to anaemia, haemoptysis and purpura on both shanks. After a year of haemodialysis, the patient successfully underwent a kidney transplant.

Conclusions

Systemic literature review revealed no other case with ovarian manifestation as a first sign of GPA. It should be remembered that in case of an untypical tumour in a patient suffering from GPA, differential diagnosis should also include inflammatory lesions.

Selective intrauterine growth restriction in monochorionic-diamniotic twin pregnancy – a case report

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Background

Multiple gestations are associated with high risk of pregnancy complications and stillbirth. Selective intrauterine growth restriction (sIUGR) is one of them – it occurs more often in monochorionic than in dichorionic twin gestations. In the majority of cases it is due to uneven placental share, which may be accompanied by vessel anastomoses, various in number and size. As a result one twin is growing significantly slower than the other. In utero demise of either of the twins may have tragic consequences for the other.

Case report

A report of a case of 34-year old woman in monochorionic-diamniotic twin pregnancy complicated by sIUGR is presented.

The patient was referred to the hospital at 16 weeks of gestation due to the significant disproportion of intrauterine growth of fetuses. Initial ultrasound examination revealed sIUGR and oligohydramnios of the second fetus, not meeting the Quintero criteria of twin-to-twin transfusion syndrome. Next imaging tests also showed cardiomyopathy, pericardial effusion, abnormal blood flow and anhydramnios of the smaller fetus. There were no abnormalities in the properly growing co-twin. Moreover, there was a high risk of preeclampsia confirmed at 27th week of gestation in biochemical tests. At 28th week of gestation caesarean section was performed due to a very high risk of intrauterine demise of the second fetus.

The first female fetus with 220g of body weight was born in a critical condition and died 30 minutes after the delivery. The second female fetus was delivered in good general condition, weighing 1100g. During her stay at neonatal intensive care unit the newborn required mechanical ventilation, antibiotics, blood transfusion. She was diagnosed with bronchopulmonary dysplasia and 3rd degree intraventricular haemorrhage. The baby was discharged after 74 days of hospitalization in good general condition, weighing 3090g.

Conclusions

Multiple gestation carries an increased risk of adverse perinatal outcomes. Therefore, proper perinatal assessment based on ultrasonography is essential, especially in monochorionic pregnancies. In cases complicated by sIUGR the decision to deliver is especially difficult and requires wide clinical experience in order to increase the chances of survival for any of the two twins and to decrease the risk of complications resulting from prematurity.

HUMAN SCIENCE IN MEDICINE

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The relationship between knowledge about the rules of body donation and students' moral standards during the gross anatomy classes

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Introduction

Regulations regarding the donation of the body for scientific purposes are crucial for new medical students. They explain the origin of the cadavers, the rules of their usage and the way of commemoration of donors' dedication. The comprehension of the regulations may have an immense impact on the student's moral approach to cadavers during anatomy classes.

Aim of the study

The aim of the study was to check if the knowledge about rules of body donation has an impact on the ethical standards of first-year medicine students.

Material and methods:

The study was conducted using an anonymous, self-composed survey on the population of first-grade medicine students of Medical University of Lublin (n=309). The survey was carried out in written form during an anatomy test in January. The study population consisted of 190 women (61.5%) and 119 men. More than half (55.0%) of the group was below 20 years old. The ordinal data were coded as numbers to perform Mann-Whitney U-test. A p-value <0.05 was considered significant.

Results

The majority of respondents (72.6%) declared to know the rules of donating bodies. Gender, place of living or age groups did not significantly differ in the amount of this declaration. Students who claimed to know the rules of body donation less frequently did unethical acts related to cadavers i.e. joking ($p=0.018$); talking about cadavers to non-medical peers ($p=0.002$). Moreover, they more strongly agreed ($p=0.004$) that cadavers require respect and were more likely to consider the cadaver as their 'teacher' ($p=0.013$). In the group of students knowing the rules of body donation, there was a significantly higher willingness to participate in the memorial ceremony honoring the donators ($p=0.0001$). Another factor increasing willingness to participate in the ceremony was wondering who these people were before death ($p=0,002$).

Conclusions

Insightfulness in the rules of scientific body donation positively influences the moral standards of first-year anatomy students.

Quantitative analysis of Facebook posts from polish pro- and anti-vaccine high profile fan-pages

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Introduction

Vaccines are a crucial method of preventing infectious diseases in the population. However, the rising concerns regarding the safety of their use cause lower vaccination rates. The possible reason for such a situation is misinformation available on the internet.

Aim of the study

The aim of the project was to conduct a quantitative linguistic comparison of information posted on popular pro- and anti-vaccine Facebook's fan-pages.

Material and methods:

On the 21st of February the latest Facebook posts were collected from the two popular polish fan-pages: "Ogólnopolskie Stowarzyszenie Wiedzy o Szczepieniach STOP NOP" (n=1040) presenting the anti-vaccine point of view and from pro-vaccine "Szczepienia.info" (n=566). The obtained comments were tokenized and lemmatized according to the polish dictionary Polimorfologik 2.1. Prepared words were categorized by five basic emotions that they trigger (happiness, anger, sadness fear, disgust) using the Nencki Affective Word List. The frequency of emotionally marked words was used in sentiment analysis. Additionally, the Latent Dirichlet allocation (LDA) algorithm was applied to find the words that are the most characteristic for given fan-pages.

Results

The distribution of posts' length from two sites varied. STOP NOP posted shorter information (median = 320 characters), yet there was a wide range of lengths (IQR= 962 characters). Szczepienia.info have longer posts (median = 451,5 characters) but with focused distribution (IQR = 200 characters). The most common words in both groups of posts are similar due to their topic (e. g. vaccination, vaccine, child, doctor, disease). There is a strong correlation in word frequency between both sites ($r=0.76$; $p<0.05$). There was a significant difference in the distribution of highly emotional words between two pages ($G=11.76$; $p<0.05$). In STOP NOD posts there was a higher prevalence of words expressing anger (13.3% to 8.4%), while in Szczepienia.info words indicating fear overweighed (53.0% to 47.1%). According to LAD, to the words most characteristic for the anti-vaccine site can be included: "consortium", "reaction", "occurrence", "newborn", while for pro-vaccine posts: "whooping cough", "worth", "lack".

Conclusions

The quantitative text analysis may be a foundation of algorithms that deal with misinformation on the internet and prevent spreading trends that are potentially dangerous for public health.

Analysis of the situation of homeless people and forms of assistance available for them in Cracow with particular emphasis on the issue of medical help

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Introduction

In Poland, there are 33 410 homeless people and 1 054 of them lives in Cracow, which makes it the 4th city in terms of a number of the homeless in Poland. As a social group, homeless people require special care in many aspects.

Aim of the study

The purpose of our study was to gather information about the situation of homeless people in Cracow and possibilities of help they can get, particularly about places to stay, medical help, meals and bathrooms.

Material and methods:

A diagnostic survey was employed using an original questionnaire. The study was carried out from 1st November 2017 to 25th April 2018 in 11 institutions offering refuge and help for homeless people in Cracow.

Results

In 11 institutions in Cracow helping homeless people, there were 691 places (mattresses and beds) to sleep. Nine of these places (81.8%) were opened all year, two of them (18.2%) stayed opened seasonally. Most of the institutions were available only for men (54.5%), two were coeducational (18.2%) and three for women (27.3%). Five (45,5%) places offered meals, but in one it was served only for 50 ill people excluding healthy ones. In 10 places there were 49 showers (from one there were no data about No. of showers) with hygienic products in all of them and with the possibility in 10 from 11 to take shower every day. As many as 7 shelters (63.6%) were providing medical help but only in 4 cases (36.4%) it was provided by doctors. Ill homeless admission was available only in 5 places (45,5%) Medical help was based mostly on telephone consultation (in 7 institutions, 63.7%). Nine from eleven institutions (81.8%) were providing medicines but it was limited to the most needed.

Conclusions

Considering data from surveys it is clear that the situation of homeless people in Cracow is poor. Basic needs of the homeless stays uncovered- particularly the need for places to sleep and shower and for medical care. Number and access to meals seem to be satisfactory, however, there is little data about the content of the micro and macronutrients in served food. All organizations must face the need to increase the competence of the aid given to homeless people.

The ancient theory of the blood circulaction by Erasistratus of Ceos in confrontation with the current anatomical knowledge.

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Introduction

Erasistratus, who was born in Ceos in 325 BC, was an ancient doctor, a valued surgeon and an author of medical works, who contributed in the field of anatomy. He was the first one who described the heart anatomy and the phenomenon of blood ciruculation. He wrote many pieces of work, some of which unfortunately later got lost. Thankfully, mentions about his accomplishments were featured in other works, for example in the references of such famous ancient doctors as Gallen

Aim of the study

I will compare the theory of blood ciruculation and the heart anatomy in Erastistratus's works with the current knowledge on that topic. I will try to show how amazing discoveres in anatomy Erasistratus made, in spite of limited possible methods of human body exploration.

Material and methods:

The analysis of the ancient resources in which the Erasistratus's theory was described.

Results

Erasistratus claimed that the blood flows around the body in veins, that it is pneuma that is carried from the heart by a one-way valve and then circulates in arteries, and that veins and arteries are connected by anastomoses. He recognized that the heart works as a pump. According to his theory, digested food is converted by a liver into the blood. In order to explain why the blood is also found is arteries, he used a theory of horror vacui.

Conclusions

The Erasistratus's theory has its pros and cons. A lot of his theses contained mistakes, but in some of them he was right. Undoubtedly, without his discoveries we wouldn't know as much about the cardiovascular anatomy as we know now.

Autonomy of intellectually disabled patients in medical practice.

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Introduction

Respect for patient's autonomy guides numerous aspects of relationship between patient and doctor. Every stage of diagnostics and therapy requires patient's consent and comprehension. Intellectual disability impairs capacity of resolving health-related issues and therefore their representation is regulated by law. However, management of intellectually disabled patients may be associated with a distinctive restriction of their autonomy.

Aim of the study

This work elaborates on situation of intellectually disabled patients in participation in medical treatment in the light of current Polish legislation. It asks a question if procedures provided by law to substitute patient's consent do not collide with autonomy in its broadest sense.

Material and methods:

Discussion of subject is based on analysis of legal acts defining extent of patient's autonomy, including the Code of Medical Ethics, Act on Medical Profession and Act on Patient's Rights and Patient Ombudsman. Legal status of intellectually disabled patients is discussed on a basis of the Family and Guardianship Code. Research includes review of related literature and commentary and is concluded with authors' reflexions.

Results

Polish legislation provides several substitutional procedures for patients with intellectual disabilities, including institution of legal guardian and incapacitation. What is worth noting, it enables exclusion of patient's disagreement for certain medical procedure by the judgement of court. From doctor's perspective it means mandatory inclusion of another person in decision-making in medical treatment and enables acting against patient's will in virtue of law. In particular, it affects distinctively patients with partially preserved mental functions.

Conclusions

While current legal status is oriented on well-being of intellectually disabled patients throughout the therapy, it authorizes at the same time acting with no regard to patient's dissent. On one hand, it provides a universal legal way to initiate necessary medical procedures. On the other, doctors may bear the burden of acting in a clear conflict with patient's statement.

Knowledge, consciousness, and Attitudes of different type of a student in Organ Donation

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Introduction

Throughout the world, there is a shortage of suitable organs for organ transplantation. The aim of this study was to assess the level of knowledge, awareness, and attitudes of medical, law, divinity, nursing, and communication students, who will be involved in this issue in the future, regarding brain death and organ donation.

Material and methods:

Data were collected with the use of a 30-item questionnaire.

Results

Of the 341 participants, 228 (66.8%) were female and overall average age was 21.6 ± 2.8 years. Nearly one-half of them (51.3%), especially nursing and medical students, wanted to be a donor, but only 2% had an organ donation card; 78.3% emphasized that family must have the right to make the decision for organ donation, and the vast majority of the participants considered that the organs could not be taken without any permission. Kidney and heart were the most commonly identified transplantable organs; the less frequently known organ was intestine. Only 71 participants, most of them medical, divinity, and law students, correctly answered all questions about brain death; 68.6% stated that organ donation is allowed by religion, and 5% expressed that it is religiously forbidden; 37.3% did not have confidence in health care policy. Law students were more confident, nursing students less confident.

Conclusions

Better understanding of organ donation and concepts by the doctors, nurses, legislators, religious officials, and mass communications professionals who will give direction to society's behaviors and beliefs would help to spread positive attitudes toward organ donation and transplantation in the public

INTERNAL MEDICINE 1

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Impact of intravenous fluid resuscitation on length of hospitalization and inflammatory markers in patients with acute pancreatitis – a retrospective study

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Introduction

The worldwide incidence of acute pancreatitis (AP) is rising, thus further increasing its burden on healthcare services. AP is an inflammatory process which causes a local and systemic inflammatory response syndrome. Over recent decades, the treatment of AP has gradually developed towards a more tailored approach, with a distinctive role of intravenous fluid therapy. Nevertheless, current data regarding the amount of fluid administered to patients is still controversial.

Aim of the study

The primary aim of the study was to retrospectively investigate the impact of intravenous fluid resuscitation on the duration of hospitalization and the levels of inflammatory markers in patients with AP. The secondary goal was to assess, retrospectively, the etiology of AP and its correlation with the demographic data.

Material and methods

The data of 367 patients diagnosed with AP was retrospectively reviewed. The patients were admitted to the Department of Digestive Tract Disease between January 2012 and September 2018. Data was acquired from patients' medical records and included sex, age, comorbidities and Atlanta classification of AP as well as its etiology. The association between this data and the hospitalization duration and inflammatory markers levels were assessed.

Results

There was a statistically significant positive correlation between the CRP on day 3 and day 5 of hospitalization and the hospitalization duration ($r=0.37$; $p<0.05$ and $r=0.45$ $p<0.05$, respectively). Moreover, there was the significant positive correlation between concentration of CRP on day 3 and day 5 of hospitalization and the total fluid volume received during the 12 hours of hospitalization ($r=0.16$ $p<0.05$ and $r=0.18$ $p<0.05$, respectively). Nevertheless, no significant correlation between hospitalization duration and the fluid volume received during the first 12 hours was demonstrated. Alcoholic abuse was the major etiological factor of AP which occurred in patients (38.7%), followed by: biliary (28.0%), idiopathic (23.7%) and other (9.6%). Mean age of patients with alcoholic AP was significantly lower than patients with biliary AP (44.3 ± 12.9 vs 58.0 ± 17.5, $p<0.05$).

Conclusions

We demonstrated that alcohol is a major etiological factor in AP in the examined population. Importantly, CRP in day 3 and day 5 of hospitalization may be regarded as a marker of clinical severity and it could potentially be used to predict the necessity of longer hospitalization. Furthermore, our study demonstrated that aggressive fluid resuscitation may be associated with the severe AP clinical course.

Evaluation of adherence to pharmacotherapy and lifestyle recommendations in hemodialyzed patients and kidney transplant recipients

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Introduction

Hemodialysis (HD) and kidney transplantation (KTx) are two treatments of end-stage renal disease in which the patient's involvement in the therapeutic process is of utmost importance. Considering comorbidity, the necessity of lifestyle adjustments, dietary restrictions and pharmacotherapy, sufficient adherence is crucial in ensuring long survival and good quality of life.

Aim of the study

To evaluate adherence to pharmacotherapy and recommendations regarding diet and self-management among HD and KTx patients.

Material and methods

We enrolled 239 patients, 132 HD (39F, 93M) and 107 post-KTx (48F, 59M) from two dialysis stations and two post-transplant outpatient clinics. The patients completed a questionnaire regarding the use of over-the-counter medications (OTC) and dietary supplements (DS), adherence to pharmacotherapy, diet and addictions, water intake and self-management. In addition, we had them evaluate their knowledge on recommendations for HD and KTx patients.

Results

42.1% of HD and 39.4% of post-KTx patients admitted to using OTC medications with no prior medical consultation ($p=0.677$), while 43.9% of HD and 31.1% of post-KTx patients were taking DS ($p=0.040$). Significantly more HD patients than KTx recipients failed to inform their doctor about taking OTC medications or DS (52.2% vs 21.4%; $p<0.001$). Likewise, HD patients were more likely to occasionally forget to take their medications (33.6% vs 9.7%; $p<0.001$). Four (9,7%) dialyzed and not a single post-transplant patient reported that they sometimes ingested medicinal herbs or herbal teas containing St. John's Wort ($p=0.079$). 32.7% of HD and just 3.8% of post-KTx patients ate grapefruits or drank grapefruit juice ($p<0.001$). 40.2% of HD and 20.5% of post-KTx patients admitted to drinking alcohol ($p<0.001$), while 22.4% of HD and 10.5% of post-KTx patients smoked ($p=0.013$). 46.7% of HD patients and 66.4% of KTx recipients limited their caloric intake ($p=0.002$), whereas 73.8% of HD and 84.9% of post-KTx patients limited their salt intake ($p=0.030$). Patients on hemodialysis reported drinking only 1.17 (±0.57) liters of water per day, while post-KTx patients drank 2.51 (±0.67) liters ($p<0.001$). 91.6% of HD and 81.1% of post-KTx patients measured their blood pressure at least once a day ($p=0.021$). KTx recipients felt more confident about their knowledge on recommendations, compared to HD patients (average score 4.0±1.0 vs. 3.7±1.0, $p=0.040$).

Conclusions

Kidney transplant recipients exhibit better adherence and rate their knowledge on recommendations higher compared with hemodialyzed patients.

Changes of adropin protein level among obstructive sleep apnea patients

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Introduction

Obstructive sleep apnea (OSA) is a chronic condition that is characterised by recurrent pauses in breathing during sleep, caused by collapse of upper airway. Adropin is a small peptide mainly expressed in liver and brain. It plays a key role in energy homeostasis, lipid and glucose metabolism and maintaining insulin sensitivity. Moreover, it protects against the hepatosteatosis and hyperinsulinemia associated with obesity.

Aim of the study

Therefore, the aim of the study was to investigate the correlation between the adropin protein concertation and severity of the disorder among OSA patients.

Material and methods

36 patients (83% male) referred to Sleep and Respiratory Disorders Centre were included in the study. Patients underwent polysomnography (PSG) examination. Peripheral blood was collected in the morning (6:00-7:00 am) after the PSG. Adropinprotein concertation measurements were performed using ELISA immunoenzyme testing.The distribution of obtained data was assessed with Shapiro-Wilk test. T-student test was used for normally distributed data. In other case Wilcoxon and Mann–Whitney U-testwere carried out. Moreover, Spearman's rank correlation coefficient was used as nonparametric test to assess correlation. p value less than 0.05 was considered as significant (unless otherwise stated).

Results

Patients based on their PSG results were divided into 2 groups: severe OSA (apnea-hypopnea index (AHI) >30) and no OSA (AHI <5). Statistically significant higher adropinprotein concentration level was observed in group with severe OSA ($p=0.022$). Additionally, adropin protein concentration level correlated with AHI in REM phase ($r=0.401$, $p=0.042$) and lowest oxygen blood saturation during PSG ($r=-0,332$, $p=0.047$). As there has been difference between the groups regarding BMI ($p<0.001$) subsequent post-hoc ANCOVA was performed. Adropin remained statistically different between the two groups ($p<0.001$), with BMI as a covariate ($p=0.089$)

Conclusion

Patients suffering from severe OSA have higher concentration level adropinthan controls. This relationship is particularly associated with severity of the disorder in REM. There is a need to further investigate adropin, both in larger cohort, and in context of OSA comorbidities as it could be a relevant factor in their etiopathogenesis, especially obesity, insulin sensitivity and hyperlipidaemia.

Significance of peripheral blood morphology with granulocyte distribution in the evaluation of treatment in asthma and COPD.

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Introduction

The two main chronic obstructive diseases in population are asthma – affecting 1-18% of adult population – and chronic obstructive pulmonary disease (COPD) prevalent in up to 6% of adults. In both cases, the treatment selection depends on the severity of the disease. In management of these conditions, spirometry and complete blood count are two of the main monitoring tests.

Aim of the study

The aim of the study was to analyse the correlations between the complete blood count parameters (white and red blond cells, platelets), spirometry values and clinical severity of asthma or COPD.

Material and methods

This was a retrospective analysis of patients admitted to Allergology and Pulmonology Clinics for Adults in Lodz, Poland. Spirometry values, complete blood count and information on pharmacological treatment were obtained from archival data. Patients were then assigned with disease severity according to present GINA/GOLD recommendations. The study included 125 patients – 47 with COPD (22 females) and 78 with asthma (57 females).

Results

In asthma, we found significant correlations between ascending GINA treatment steps (1 to 5) and WBC count, FEV1 volume, FEV1/FVC ratio, FVC%, MEF50, MEF50%/PEF ratio, PEF% ($r=0.236$, $p=0.038$; $r=-0.257$, $p=0.023$; $r=-0.531$, $p<0.001$; $r=-0.482$, $p<0.001$; $r=-0.241$, $p=0.034$; $r=-0.289$, $p=0.01$; $r=-0.396$, $p<0.001$; respectively).

In COPD, significant correlations between ascending GOLD groups and WBC count, neutrophils count, percentage of basophils, platelet count, FEV1 volume, FEV1/FVC ratio, FVC volume, FVC%, MEF50, MEF50%/PEF ratio, PEF, PEF% ($r=0.346$, $p=0.017$; $r=0.309$, $p=0.035$; $r=0.321$, $p=0.028$; $r=-.401$, $p=0.005$; $r=-0.732$, $p<0.001$; $r=-0.575$, $p<0.001$; $r=-0.705$, $p<0.001$; $r=-0.498$, $p<0.001$; $r=-0.632$, $p<0.001$; $r=-0.558$, $r<0.001$; $r=-0.688$, $p<0.001$; $r=-0.597$, $p<0.001$; respectively) were found.

Conclusion

White blood cells count positively correlated with asthma and COPD severity, while spirometry values (FEV1, FEV1/FVC, FVC%, MEF50, MEF50%/PET, PEF%) correlated negatively. Our results suggest that although being treated, with increasing treatment step patients present worse spirometry and laboratory test results. This may suggest that patients with asthma or COPD receive treatment with insufficient intensity.

A simple index to predict long-term remission after adalimumab treatment in Crohn's disease.

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Introduction

Differences in efficacy and high cost of anti-TNF-α therapy of Crohn's disease (CD) entail the need to find predictors of therapeutic success and to personalize the medical approach.

Aim of the study

The aim of the study was to find the clinical and laboratory variables, which will help to predict biological treatment long-term efficacy in CD patients.

Material and methods

This study included 47 patients diagnosed with CD and treated with adalimumab (ADA). Venous blood was drawn at the start of the treatment and after 12-week induction therapy. The complete blood count was performed from each sample and the following parameters were analysed: white blood cells (WBC), platelets (PLT), mean platelet volume (MPV). Data on the clinical course of the disease was also collected.

Results

After 18-months observation period, 24 (51.06%) patients lost the remission Patients who maintained 18 months remission had higher count of MPV (10.4fl (IQR: 9.4-11.1) vs. 9.45fl (IQR: 9-10.1); p=0.014) and lower count of WBC (5.57G/L (IQR: 5.1-7.78) vs. 8.64G/L (5.84-10.31); p=0.008); measured after induction therapy) than those, who lost the remission. To determine the cut-off points for the levels of MPV and WBC in 12 weeks therapy, the receiver operating characteristic curve was used, with the following results: 7.9G/L for WBC (82.6% sensitivity, 62.5% specificity; p=0.003) and 10.4fl for MPV (52.2% sensitivity, 87.5% specificity; p=0.006). The presence of abscesses and fistulas (p=0.003), the history of CD complications such as abscesses, fistulas, obstruction (p<0.001) and previous operations (p=0.015) were unfavourable predictors of 18 months remission. Based on the obtained data, a simple index has been created that estimates a possibility of the 18 months remission (82.6% sensitivity, 79.2% specificity; p<0.001).

Conclusions

The combination of laboratory parameters and clinical data is a promising tool to predict the remission after ADA treatment. This simple scale requires further studies on larger patient population.

Does heart matter in idiopathic inflammatory myopathies? – observations from a single-centre study

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Introduction

Idiopathic inflammatory myopathies (IIM) are rare collagen vascular disorders with a high incidence of internal organ involvement. Subclinical cardiovascular complications in course of IIM are now considered as frequent and significantly worsening the prognosis.

Aim of the study

The aim of the study was to assess the incidence of subjective symptoms resulting from cardiovascular involvement as well as to evaluate the prevalence of subclinical cardiac involvement in patients with IIM.

Materials and methods

Patients with IIM were identified out of all patients hospitalized at the Department of Rheumatology, Medical University of Lodz, Poland. A self-designed questionnaire about symptoms resulting from internal organ involvement was created. Patients hospitalized after May 2018 were asked to complete a questionnaire, for those with severe muscle weakness assistance in filling the form was offered. During hospitalization 24 hour ECG Holter monitoring was performed. Concentrations of biomarkers of myocardial ischemia such as troponin T or markers of heart failure such as NT-proBNP were assessed. For the patients hospitalized formerly results from medical records were included.

Results

15 patients with IIM were identified out of all patients hospitalized at the Department of Rheumatology. Most frequently reported cardiac symptoms included palpitations (in 6 out of 10 patients), feeling of irregular or too fast heartbeat (in 5 out of 10 patients). Dyspnoea at exercise affected 44,44% of patients (4 out of 9 patients) while shortness of breath at rest was reported by 3 out of 10 patients. Various types of pathologies were observed in all patients in whom the ECG Holter monitoring was performed. Concentration of troponin T was elevated in all of the patients in which it was evaluated (n=8). 4 out of 5 patients presented increased rates of NT-proBNP and in 6 out of 8 patients CK-MB levels were elevated.

Conclusions

Cardiovascular involvement is frequent in patients with IIM. Non-invasive tests such as ECG or biomarkers of cardiac damage may be useful in detecting cardiac involvement at the early stage and therefore should be included in clinical evaluation.

Itching among hemodialysis patients and the effect of a dietary intervention aimed at low phosphate intake on its intensity.

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Introduction

Pruritus is common among hemodialysis patients and markedly lowers their life quality. Current pharmacotherapy of pruritus is challenging and often ineffective. Phosphate content in the diet has been recognized as the main factor that determines the intensity of itching.

Aim of the study

Assessment of the prevalence of pruritus among hemodialysis patients and of the effect of low-phosphate diet on the intensity of itching.

Material and methods

The study included 190 patients (87F, 103M, age 64.7±12.2 years) from five public dialysis centers treated with hemodialysis (HD) three times a week for 3.7±3.7 years. The patients took part in a validated pruritus survey which included 3 open and 14 multiple choice questions. Every patient was asked to follow a 4-week low-phosphorus diet (aimed at 1000mg/24h phosphate intake). Levels of phosphorus, calcium, parathormone (PTH) and hemoglobin were analysed in group of 45 patients. 25 of them took part in dietary intervention and were asked to keep dietary diaries during the intervention, which were analysed in a nutrition lab. 10 patients were withdrawn due to poor diet adherence. Eventually 15 patients (4F, 11M) were compared with the reference group of 15 hemodialysis patients (9F, 9M) who followed a standard diet.

Results

56% of patients reported itching, with average intensity score of 5 on 10-point scale. The most common affected regions were the back 52%, legs 42% and arms 36%. 55% reported pruritus as an obstacle to meet daily obligations. Evenings were the time of peak symptom occurrence, itching caused sleep interruptions in 30%.

No significant correlation between pruritus intensity and phosphorus level was found, however a negative correlation between pruritus intensity and hemoglobin ($r=-0.38$, $p=0.009$) was observed.

Baseline pruritus score was 5.0 (CI 95%: 4.5 to 5.5) in the group that reported itching (n=107) and 5.2 (CI95%: 3.92 to 6.48) in the group willing to modify the diet (n=15). The dietary intervention decreased itching score by -2.2 (CI95%: -3.67 to -0.73) in the study group and increased by 1.2 (CI95%: -0.97 to 3.37) in the reference group ($p=0.006$ for difference). Mean plasma phosphorus numerically decreased by -0.09 mmol/l (CI95%: -0.27 mmol/l to 0.09 mmol/l) in the study group and increased by 0.12 mmol/l (CI95%: -0.08 mmol/l to 0.33 mmol/l) in the reference group (difference not significant).

Conclusions

Itching affects more than a half of chronic hemodialysis patients. Most of these patients are reluctant to take part in a dietary intervention aimed at reducing the symptom. Hemoglobin may have greater impact on pruritus intensify than phosphorus level, however low-phosphorus diet help to reduce itching.

Retrospective analysis of cardiac damage in patients with systemic sclerosis

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Introduction

Systemic sclerosis (SSc) is a chronic heterogeneous disease characterized by microangiopathy, skin fibrosis, extensive organ dysfunction and autoimmune abnormalities. The prevalence of the diffuse SSc is estimated to be 1/25,000 with heart pathology signs detected for 15%. Cardiac involvement is associated with poor prognosis and can be difficult to manage.

Aim of the study

This study aims to analyse the early symptoms of cardiac involvement in SSc and the incidence of associated heart failure and pulmonary hypertension in Lithuanian population.

Material and methods

The medical records from Vilnius University Hospital Santaros Clinics database were analysed. Out of 197 patients treated for SSc during the period of 2013-2018, 41 met the inclusion criteria – had SSc associated cardiac involvement (83.7% were females). IBM SPSS 23.0 statistical program was used to analyse the data.

Results

On average SSc was diagnosed at the age of 54,3 years ±12.2, it was 6,3 years after Reynaud disease. First cardiological symptoms were observed 1.88 years ± 3.8 after SSc diagnosis. These symptoms included: shortness of breath (74,4%), resting dyspnoea (4,6%), angina (18,6%), tachyarrhythmia (46,5%) and loss of consciousness (2,3%). Significant changes in heart ultrasound were seen after 2.98 years, and in electrocardiogram after 3.02 years from SSc diagnosis. Overall 24 patients had heart failure within 5,7 years ±4.1 of SSc diagnosis, and 14 patients had secondary pulmonary hypertension 5,1 years ± 3.7 after SSc diagnosis.

The first line treatment of SSc was Methylprednisolone (62%) and methotrexate (38%), the second line treatment was Mycophenolate mofetil (1 patient), intravenous immunoglobulin (1 patient), cyclophosphamide (4 patients) and azathioprine (8 patients).

Conclusions

Since there is no curative treatment for systemic sclerosis, early detection of cardiac involvement is necessary to improve survival. Early evaluation of cardiological symptoms is the key to deciding appropriate treatment options, as instrumental diagnosis is often delayed.

Retrospective analysis of risk factors and a way of anticoagulation therapy in patients with pulmonary embolism

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Introduction

During the last decade, one of the biggest changes in the management of pulmonary embolism (PE) has been the approval of four non-vitamin K antagonist oral anticoagulants (NOACs): apixaban, dabigatran, edoxaban and rivaroxaban for the treatment of PE and deep vein thrombosis and secondary prevention of venous thromboembolism.

Aim of the study

The aim of the study was to evaluate the type of anticoagulation therapy in patients with pulmonary embolism. An additional aim was to evaluate the symptoms, past and current risk level, of pulmonary embolism episode in patients hospitalized for this reason.

Material and methods

The study comprised 74 patients with suspected pulmonary embolism and indications for anticoagulation therapy who were treated in the Department of Internal Diseases and Clinical Pharmacology, Medical University in Łódź in years 2013- 2018. The data about treatment and additional tests (ECG, echocardiography, D-dimer and NT-proBNP range) were collected retrospectively based on medical history. Each patient was evaluated using Wells scale for clinical prediction of pulmonary embolism and PESI scale for prognosis.

Results

The study enrolled 74 patients (48 women, 26 men, mean age 74±13) with suspected pulmonary embolism. The most common causes for hospital admission in patients with PE included dyspnea, cough, chest pain general deterioration of health and increased blood pressure. Fifty of seventy-four patients had confirmed pulmonary embolism in imaging technique: CT angiography in most cases (98%); the 2% was diagnosed by the perfusion lung scan. The most common risk factors in this group patients were obesity, hypertension, age over 45 and heart failure. The mean time of hospitalization was 10,7 days. The mortality rate attributed to PE was 3 (6%). All Patients with confirmed PE received anticoagulation treatment. The anticoagulation therapy was initiated from: Unfractionated heparin in 9(18%) patients, Low-molecular-weight heparin in 41(82%) patients. During hospitalization Low-molecular-weight heparin was change in 16 patients to Acenocoumarol – 1(2%), Warfarin – 4(10%), Rivaroxaban- 6(14%), Dabigatran – 4(10%), Apixaban – 1(2%). Unfractionated heparin was change in 9 patients to: Low-molecular-weight heparyn 5(56%), Rivaroxaban- 3(33%), Dabigatran – 1(11%). 24 of 50 patients discharged home were given the Low-molecular-weight heparin, 2 of 50 – Acenocoumarol, 4- Warfarin, 12 – Rivaroxaban, 6- Dabigatran and one Apixaban.

Conclusions

Our study show that the most popular choice for treatment of pulmonary embolism is still low-molecular-weight heparin. Non-vitamin-K oral anticoagulants are prescribed three times more often as vitamin K antagonists.

OSAS in elderly – differences in clinical and polysomnography findings

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Introduction

Obstructive sleep apnea syndrome (OSAS) is characterized by complete or partial upper airways collapse repeatedly during sleep. It is a common problem which can reduce quality of life of elderly people. The affected patients are exposed for many clinical effects. Polysomnography (PSG) is considered as the gold standard in OSAS diagnosis.

Aim of study

The aim of the study was to investigate correlation between the age, clinical variables and polysomnography findings.

Material and methods

We performed the retrospective study included 1007 patients from Sleep and Respiratory Disorders Centre. We analyzed medical charts and polysomnography outcomes.

Results

Patients were divided into 2 groups in accordance to age: 686 patients over 65 years old and 321 patients below 65 years old. Total sleep time (TST) was significantly shorter among younger patients: 4.30 hours vs 5.89 ($p<0.0001$), as well as REM 1.0 (0.66-1.38) vs 0.77 (0.4-1.11) $p<0.0001$ and arousal index 21.59 (13-35.18) vs 27.05 (14.75-43.03) $p<0.0001$. BMI among patients under 65 years old was significantly higher (32.46) compare to the patients over 65 years old (29.04), with $p<0.0001$. There was no differences among history of hypertension among study groups below 65 (84,4%) and over 65 (79,44%; $p<0.06$), interestingly, there were significant differences between diastolic blood pressure 90 (80-100) vs 80 (70-90) respectively with $p<0.001$.

Conclusion

The age is a risk factor of developing OSAS. Elder patients are in a higher risk of developing more severe OSAS, while the BMI which is consider as a main risk factor of OSAS is significantly lower among study group.

Influence of physical performance, muscle strength and body composition on the self-assessed quality of life in hemodialyzed patients

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Introduction

End-stage renal disease and hemodialysis (HD) are associated with limited physical activity and deteriorated quality of life. The Short Form 36 (SF-36) questionnaire is a measure of self-reported physical and mental health.

Aim of the study

We aimed to analyze the relationship between the self-rated health of the HD patients and their physical functioning.

Material and methods

We evaluated 60 HD patients (20F, 40M) with a mean age of 61.9±17 years and a median time of HD of 3.06±3.74 years. The SF-36, EQ-5D and EQ-VAS scales were utilized in self-assessment of functionality and quality of life. Body composition was evaluated with electrical bioimpedance (BCM Fresenius™), lower extremity muscle strength with a hand-held dynamometer (microFET®2) and the physical performance with the Short Physical Performance Battery (SPPB). Patient history and laboratory data were collected from medical records. Skeletal muscle mass (SMM) was calculated using bioimpedance data and equation developed by Janssen et al.

Results

The median SF-36 Quality of life (QoL) factor was 57.3±17.0; the score was unrelated to sex ($p=0.649$), age ($p=0.165$) and total time of hemodialysis ($p=0.349$). Median values of the physical component summary (PSC) and the mental component summary (MSC) of the SF-36 were 54.2 (41.1-69.1) and 67.9 (77.7-17.3), respectively. Both components correlated with each other ($R=0.67$; $p<0.001$). EQ-D5 and EQ-VAS scores were significantly correlated with QoL ($R=-0.75$; $p<0.001$ and $R=0.50$; $p<0.001$, respectively). SPPB score correlated with QoL ($R=0.28$; $p=0.030$) and the physical functioning scale (PF) of SF-36 ($R=0.40$; $p=0.002$). Moreover PF correlated with lower extremity muscle strength (R from 0.29 to 0.44; p from <0.001 to 0.030). SMM correlated with QoL, PSC and MSC ($R=0.36$; $p=0.005$; $R=0.31$; $p=0.017$; $R=0.29$; $p=0.024$, respectively). The percentage of Lean Tissue Mass showed a positive correlation with QoL, PSC and MSC ($R=0.39$; $p<0.001$; $R=0.32$; $p=0.010$; $R=0.38$; $p=0.002$, respectively) whereas the percentage of fatty tissue mass showed a negative one ($R=-0.36$; $p=0.004$; $R=-0.27$; $p=0.030$; $R=-0.37$; $p=0.003$, respectively). Body Cellular Mass was correlated positively with QoL ($R=0.39$; $p=0.001$), PSC ($R=0.31$; $p=0.010$) i MSC ($R=0.39$; $p=0.002$).

Conclusions

Hemodialyzed patients presenting with objectively better physical performance, higher percentage of lean tissue, skeletal muscle mass and muscle strength, as well as lower body fat percentage report better self-perceived health, both physical and mental.

Prevalence and characteristics of metabolic syndrome in lithuanian men's population

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Background

The prevalence of the metabolic syndrome (MetS) has been increasing and it is becoming a global problem. MetS prevalence is present in approximately 25% of all adults with increased prevalence in advanced ages. Although, there is a theory of affirmation that there is significant differences of MetS in the male population.

Aim

The aim of this study was to evaluate differences in prevalence and characteristics of metabolic syndrome in male patients with hypertension and with normal blood pressure.

Methods

The study included 84 male patients (men aged 18-99) who appealed to the family doctor for various reasons in Vilnius city clinical hospital. All participants fill in anonymous questionnaires and were categorised into two groups based on the presence of hypertension: men with hypertension and without hypertension. All participants were analyzed according to the updated Nacional cholesterol education program adults treatment panel III criteria.The analysis was done using Microsoft Excel and SPSS statistical software.

Results

Overall, the estimate prevalence of hypertension between men's population was 34,6%. The mean age was higher in subjects with hypertension (66,12 ± 14,93 years vs 47,37± 18,0 years, p<0,001), as well as mean of body mass index (27,78 ± 18,78 kg/m2 vs 25,70 ± 4,24 kg/m2). Mens with hypertension had mean blood pressure values higher than those without hypertension (134,76 ± 15,2 mmHg vs 125,12 ± 10,1 mmHg for systolic and 86,46 ± 10,1 mmHg vs 79,42 ± 7,7 mmHg for diastolic values). The prevalence of hypercholesterolemia (31,7% vs 9,3%, p=0,011) and regularity of using cholesterol-lowering medicine (36,6% vs 7%, p=0,001) in group with hypertension was higher. The frequency of diabetic medicine use (31,7% vs 4,7%, p= 0,001) was also higher in group with hypertension.

Conclusion

Present study indicates a significant relationship between hypertension and metabolic syndrome in male population.

Cardiovascular risk in HIV infected patients in Łódź – up-to-date status

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Introduction

Over past two decades we observe tripling of HIV-associated cardiovascular diseases due to highly effective antiretroviral treatment and prolonged life expectancy. It is estimated that HIV positive individuals experience twice the risk of cardiovascular diseases rather than a general population.

Aim of the study

The aim of the study was to estimate cardiovascular risk and to evaluate hypolypemic treatment in HIV infected patients with regard to CDC classification.

Materials and methods

Retrospective analysis of cardiovascular risk factors of 210 patients of the Acquired Immunodeficiency Outpatient Clinic at the Biegański Hospital in Lodz was performed based on their medical records.
A, B and C group affiliation was determined with the use of CDC classification.

Results

210 HIV-positive patients included in the study were: 166 men (79%) and 44 women (21%) with average age 41.96±9.63 years.

Patients were divided into two groups of cardiovascular risk based on the PTN AIDS recommendations; high – 188/210 patients (89.5%) - group 1 and very high 22/210 patients (10.5%) - group 2. The average LDL level in the group 1 patients was 104.55±32 mg/dl (therapeutic LDL <100 mg/dl). Other lipidogram parameters in gruop 1 patients were: HDL - 47.71±14.54 mg/dl, total cholesterol - 177.82±38.39 mg/dl, TG - 138.24±68.60 mg/dl AIP(Atherogenic index of plasma) - 0.45±0.27 and non-HDL - 131.62±36.72 mg/dl. In the group 2 the mean LDL level was respectively 98.05±21mg/dl (therapeutic LDL <70mg/dl). Other parameters of lipid profile in gruop 2 were: HDL - 42.01±16.93 mg/dl, total cholesterol - 174.32±33.81 mg/dl, TG - 182.77±121.35 mg/dl, AIP - 0.64±0.37 mg/dl and non-HDL - 132.80±30.91 mg/dl. From 210 HIV positive patients six participants (2.86%) had ischemic heart disease. fifty (23.81%) had hypertension and seven (3.33%) HIV patients were diabetics. Fourty three (20.48%) patients were on hypolypemic treatment.

The patients of clinical cathegory C (sympthomatic AIDS) turned to have the highiest AIP (p=0.04) and TG (p=0.04) of all CDC gropus. They also had significantly lower HDL than patients from group A.

Conclusions

We have proved that HIV positive patients from CDC classification groups differ significantly from each other and C group has the most atherogenic plasma. The quoted data show that there is a need to perceive HIV carriers as a group of increased cardiovascular risk. Some steps should be taken to reduce cardiovascular risk among HIV positive patients and to improve the reachability of therapeutic LDL levels appropriate to risk groups.

INTERNAL MEDICINE 2

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Characteristics of metabolic syndrome in patients with hypertension.

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Introduction

High blood pressure is an important component of metabolic syndrome (MetS).

Patients with hypertension often have various anthropometric and metabolic abnormalities: abdominal obesity, elevated triglycerides and glucose level, reduced high-density lipoprotein cholesterol.

Aim of study

The purpose of this study was to compare the features of metabolic syndrome betweenpatients with hypertension and patients with normal blood pressure.

Materials and methods

The study included 200 patients who appealed to the family doctor for various reasons in Vilnius city clinical hospital. All participants fill in anonymous questionnaires and were categorised into two groups: patients with hypertension and without hypertension. All participants were analyzed according to the updated Nacional cholesterol education program adults treatment panel III criteria.The analysis was done using Microsoft Excel and SPSS statistical software.

Results

The study group consisted of 200 patients: 119 (59,5 %) with arterial hypertension and 81(40,5 %) without hypertension. The mean age was higher in subjects with hypertension (67,5 ± 13,8 years vs 46,7 ± 17,7 years, $p<0,001$). We found statistically significant difference between means of body mass index (28,11 ± 4,2 kg/m2 vs 25,13 ± 4,5 kg/m2, $p<0,001$) and value was higher in hypertension group, as well as mean blood pressure values for both systolic (135,93 ± 14,9 mmHg vs 121,36 ± 10.09 mmHg, $p<0,001$) and diastolic blood pressure (84,10 ± 10,17 mmHg vs 77,28 ± 7,90 mmHg, $p<0,001$). The prevalence of hypercholesterolemia (26,05 % vs 6,17 %, $p<0,001$) and diabetes (15,97% vs 4,94%, $p=0,016$) was also higher in hypertension group.

Conclusions

These results showed that patients with hypertension have more metabolic syndrome characteristics than patients with normal blood pressure.

Non-alcoholic fatty liver disease as a liver manifestation of metabolic syndrome.

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Introduction

Metabolic syndrome (MetS) is a major clinical challenge worldwide. The components of MetS affect all organs and system, especially liver as a core organ of metabolism. Owing to a violation of metabolism and excessive intake of carbohydrates and fats, there is an excessive accumulation of lipids in the parenchyma of the liver.

Aim of the study

To confirm a strong association between NAFLD and MetS; to prove that NAFLD include all components of MetS.

Materials and methods

Examination involved 203 patients, who were treated at the cardiological department of National Military Medical Clinical Centre during 2017-2018 years. The patients were divided into three groups. The 1st group consisted of 38 patients (18,7%) who doesn't have NAFLD, 2nd group–of 58 patients (28,6%) who have a high risk factor to develop NAFLD (excessive weight, impaired glucose tolerance, lipid profile disorders), 3rd group–of 103 patients (52,7%) with NAFLD. Exclusion criteria were distinct heart failure, viral hepatitis, liver cysts, gemangioma, cirrhosis and significant diminished liver and renal function.

Results

We have established that the 3rd group had significantly higher systolic and diastolic blood pressure (SBP/DBP) at the admission to the hospital: the 1st group SBP/DBP were 133,1±6,9/84,1±3,7mmHg; the 2nd–143,8±5,5/89,8±3,8mmHg; 3rd–151,2±4,4/93,0±2,5 mmHg ($p\alpha \leq 0,01$). Difference in the heart rate was not significant: 80,1±5,7/min; 76,1±3,8/min; 79,1±2,7/min accordingly ($p\alpha = 0,62$). The patients of 3rd group had higher BMI compared to 2nd and 1st group: 32,2±0,8kg/m2; 27,7±0,78kg/m2; 24,2±0,88kg/m2 accordingly ($p\alpha \leq 0,01$). During ultrasound examination the oblique measures of the right and left lobe were used and established: at the 1st group the measurement of right lobe 141,6±2,8mm and the left–9,1±2,0mm; in 2nd group–147,3±2,7mm and 63,6±2,3mm accordingly; in 3rd group–168,7±2,5mm and 71,6±1,7mm accordingly ($p\alpha \leq 0,01$). Measuring blood glucose level at the admission revealed the increase of glucose level: 1st group–5,18±0,27mmol/L; 2nd–5,91±0,42mmol/L; 3rd–6,38±0,23mmol/L ($p\alpha \leq 0,01$). Examination didn't show a considerable difference between the level of total cholesterol, HDL and LDL, but we revealed difference between the levels of triglycerides: the 1st group – 1,13±0,2mmol/L; the 2nd – 1,53±0,2mmol/L; the 3rd – 2,06±0,25mmol/L($p\alpha \leq 0,01$).

Conclusions

The patients with NAFLD have all MetS components and are characterized by: higher SBP and DBP at the admission enlarged liver sizes, excessive weight or obesity, impaired glucose tolerance and hypertriglyceridemia. Currently, treatment is limited to weight loss, exercise, control of blood pressure and metabolic risk factors.

Evaluation of muscle strength using a hydraulic dynamometer in people over 60 years of age.

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Admission

Sarcopenia is a group of skeletal muscle symptoms that involves losing muscle mass, a gradual deterioration of muscle function and reduction in physical activity. Sarcopenia and disturbances in nutritional status are the main components of the frality syndrome. This syndrome can cause a reduction in effective response to stress, the ability to regenerate tissues and extends nesessary time to regain full health. It results in increased risk of hospitalization, deterioration of psycho-physiological condition, increased risk of falling down, loss of independence during daily life and even higher risk of death. Therefore, the assessment of the probability of this syndrome, which includes the assessment of muscle strength, using a hydraulic dynamometer, may be helpful in prevention and early recognition of this disease.

Objectives

The aim of the study was to assess strength of handshake in people over 60 using a dynamometer and factors that could affect it. In addition, physical activity of seniors was assessed using the TUG (Time Up and Go) test, the 7-day Physical Activity Recall questionnaire (PAR) and a structured questionnaire.

Materials and methods

Measurements were performed on 134 people, who were participating in Sopot Senior's Fair on 14-15.04.2018. The strength of the handshake was evaluated by using a Baseline hydraulic dynamometer. A TUG (Time Up and Go) test was carried out to estimate physical condition and risk of falling down. Everyday activity was assessed using the 7-day Physical Activity Recall (PAR) questionnaire, and the 10-year risk of osteoporotic fracture was estimated using the FRAX algorithm. Height, body mass, calf circumference and arm circumference were also measured. All statistical calculations were made using the Statistica 13 package (StatSoft®). The value of $p \leq 0.05$ was assumed to be statisticly significant.

Results

The average hand grip measured by the dynamometer was 27.1 ± 4.5 kg for women and 37.7 ± 7.9 kg for men. The strength of the handshake was significantly higher among people who claimed to by phisicaly active (excersising over 2.5h / week) compared to people who were less active (29.2 vs. 24.7 kg, $p = 0.005$). Significant correlation was found between hand grip strength and height and physical activity, which was measured using the PAR questionnaire (Pearson correlation r was 0.40 and 0.22). A negative correlation was found between the strength of hand grip and the time of TUG and 10-year risk of osteoporotic fractures ($r = -0.26$ and $r = -0.27$). There was no significant correlation between age, arm circumference, calf circumference and muscular strength.

Discussion

Seniors with greater strength of hand grip have lower risk of falling down and osteoporotic fractures. The strength of a senior's handshake depends strongly on their physical activity. Increasing physical activity by improving muscle strength, among senior Patients, may reduce the risk of frality syndrome. Due to the very low percentage of elderly people, performing exercise, which enhance muscle strenght, a wider promotion of this form of physical activity is recommended.

Impact of allergy on prevalance, severity level and course of urticaria in patients of Department of Allergy, Clinical Immunology and Internal Medicine in years 2012-2018.

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Introduction

Urticaria is a common skin disorder characterized by multifactorial pathogenesis. Pathognomonic wheals, pruritus and angioedema are triggered by mast cell-driven vascular reaction in response to external chemical, physical and also allergic factors. Based on the literature data that prevalence of allergy among patients with urticaria is about 50%.

Aim of study

The aim of this study was urticaria develop allergic risk factors evaluation and contribution this factors in exacerbation of the disease.

Material and methods

We made retrospective research based on the medical records of patients of Department of Allergy, Clinical Immunology and Internal Medicine, Nicolaus Copernicus University in Torun, Poland in 2012-2018. We analyzed medical records of 174 patients (127 female, 47 male) in terms of duration and number of hospitalizations and allergies including partition to food and inhalant allergens.

Results

Ratio of patients with to without allergy was 1:1. About 70% of allergy patients had sensitization on inhalant allergens and about 30% to food allergens. The most common food allergens were: wheat flour (6,0%), tomato (4,6%), rye flour and hazelnuts (4,0%). The most popular inhalant allergens were: grass and grains pollen (11,4%), *Dermatophagoides pteronyssinus* (10,9%), weed pollen (10,9%), *Dermatophagoides farinae* (10,3%), cat hair allergens (10,3%). About 55% of women and about 38% of men had allergy. In group of patients hospitalized more than once there were more patients with allergy than without allergy. Number of patients with allergy was higher among patients hospitalized up to 4 days.

Conclusions

Allergy constitute the basis for 50% of urticaria cases in analyzed group. Average duration of hospitalization of patients with allergy is shorter than patients without allergy. Allergy influences to recurrence of urticaria. Urticaria clinical symptoms, which are based on sensitization reactions, occur shorter than symptoms in non-allergic urticaria cases. It can be a result of better response to the medical treatment.

The effectiveness of the 10 days treatment of Helicobacter pylori in Podlaskie Voivodship.

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Introduction

Helicobacter pylori (H. pylori) is a human pathogen which can lead to upper gastrointestinal diseases such as dyspepsia, peptic ulcers disease, chronic gastritis and gastric cancer. In patients with dyspeptic symptoms a "test-and-treat" strategy is recommended, however *H. pylori* infection is difficult to treat due to antibiotic resistance. Bismuth quadruple therapy (BQT) (PPI, bismuth, tetracycline, metronidazole/tinidazole) or not-bismuth, concomitant therapy (NBQT) (PPI, amoxicillin, clarithromycin, metronidazole/tinidazole) are currently recommended as first line treatment. Triple therapy (TT) (PPI, amoxicillin, metronidazole) can be considered as an alternative option. According to the Maastricht V/Florence Consensus the treatment duration should be extended to 14 days, unless 10 day therapies are proven effective locally.

Aim of the study

To evaluate the effectiveness of BQT and TT 10 days *H. pylori* treatment in Podlaskie Voivodship.

Materials and methods

A retrospective analysis was performed on inpatients and outpatients of M.U.B. treated with BQT or TT between January 2015 to January 2019. *H. pylori*infection was confirmed by urease rapid test (URT) (n=91, 54,82%), stool antigen test (SAT) (n=41, 24,70%), histology (n=39, 23,49%) and/or HP anti-bodies (n=28, 16,86%). The eradication assessment was confirmed by negative stool antigen test (n=154, 92,77%), URT (n=7, 4,22%) or histological (n=5, 3.01%) results. Patients were excluded if they did not complete therapy or if their treatment regimen was unknown. U Manna-Whitney and the $\chi 2$ test were used to analyze the data.

Results

Out of the 166 *H. pylori*-positive patients, 63 received BQT (37,95%) and 102 received TT (61,45%) for 10 days in both groups. There were 101 female (60.84%,) and 65 male (39.16%) in a mean age of 59.15 ± 13.02 years. Based on posttreatment SAT, BQT eradication rate (93,65%) was higher than TT (85,29%). However there were not statistical significant differences between the treatment groups (p=0.102306).

Conclusions

In a Podlaskie voivodship population, *H. pylori* eradication rates of 10 days BQT and TT were relatively high and similar for both treatment schemes. Therefore, 10 days therapy may be an alternative to 14 days treatment. This approach will decrease the costs and adverse events of *H. pylori* eradication.

Effect of aspirin desensitization on clinical factors in Aspirin Exacerbated Respiratory Disease patients- a one-year follow-up study.

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Introduction

Aspirin Exacerbated Respiratory Disease (AERD) consists of the clinical triad included asthma, chronic rhinosinusitis with nasal polyposis and aspirin hypersensitivity. Aspirin desensitization (AD) is regarded as an effective and well-tolerated therapy for patients with AERD.

Aim of the study

The aim of our study was to investigate the influence of AD on clinical factors such as asthma control, nasal symptoms and baseline FEV1 in patients with AERD.

Materials and methods

This is a prospective study of thirty-four AERD individuals subjected to 52 weeks of AD. At baseline and in the 52nd week of AD the following evaluations were performed: Asthma Control Test (ACT), Visual Analogue Scale (VAS) for the assessment of nasal symptoms and spirometry. For statistical analysis, summary statistics and Student's t-test were used.

Results

There was a statistically significant improvement in ACT score ($p=0.005$) and VAS score ($p<0.001$) in the 52nd week of AD. Long-term AD did not influence baseline FEV1 ($p=0.69$).

Conclusion

Outcomes of our study indicate that aspirin AD is effective. Patients report improvement of asthma control and nasal symptoms.

Evaluation of vitamin D3 supplementation and the risk of osteoporotic fracture using the FRAX method in the group of participants of Sopot Senior Fair in 2018.

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Introduction

Osteoporosis is a serious problem in the elderly in Poland. For some, it is referred as a "silent epidemic" because of its prevalence and asymptomatic. It's real face is revealed when fractures occur, which in the population above 50 years of age occur in 30% of women and 8% of men. Unrecognized, untreated or in the absence of appropriate prophylaxis, it may be the cause of disability and even death.

Purpose

The aim of this study was to assess the knowledge about the need for vitamin D3 supplementation, as well as ways of taking this vitamin in the elderly. The study also assessed the risk of osteoporotic fracture using the FRAX method.

Materials and methods

The study involved 126 people, 17 men and 109 women, over 60 years of age (mean age 70.5±5.9 years). Participants were volunteers applying for the study during the Sopot Senior Fair on April 14-15, 2018. Participants assessed the 10-year probability of an osteoporotic fracture using the FRAX algorithm, and also conducted a short questionnaire on vitamin D3 supplementation and measured handshake strength using a hydraulic dynamometer.

Results

67% of respondents used vitamin D3 supplementation. Significantly more often vitamin D was supplemented by women than men (69.8 and 44.4%, p=0.033). Among those who have supplemented it, 70% of them took it throughout the year, 20% for several months a year (mainly in autumn and winter), while other people took the vitamin sporadically. Over half (57%) of respondents took a dose of 2000 IU/day, 20% of them used 4000 IU/day. The most common form of supplementation were tablets / capsules (77% of people). The most often sources of knowledge about supplementation were health care workers (58%), then family and social media (22% and 21% respectively). Despite that the information about the need for supplementation, a quarter of people did not take it at all. The mean 10-year risk of osteoporotic fracture in the study group was 8 ± 6.9% and was significantly higher in women than in men (8.4 ± 7.2 and 4.8 ± 1.7%; p=0.001). In 22% of women, the 10-year risk of fracture exceeded 10%. Respondents, who were more physically active, had lower risk of fracture as compared to less active people (7.5 ± 6.5 and 10.7 ± 8.8%, p=0.005). A significant correlation was found between the risk of osteoporotic fracture and age, height, body mass and handshake strength (correlation coefficient r was 0.27, -0.31, -0.20 and -0.27 respectively).

Conclusions

The prevalence of knowledge of elderly people about the need for vitamin D3 supplementation was quite good. Most people took vitamin D3 regularly, at the appropriate doses. Unfortunately, about 25% of the respondents did not take vitamin D3 despite knowing about the need for supplementation. Therefore, it should still strive to maximize the popularity of vitamin D3 supplementation in this group, especially that a large part of the respondents had an increased risk of fractures within the next 10 years.

Many faces of celiac disease.

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Introduction

Clinical picture of celiac disease (CeD) is commonly associated with such symptoms as chronic diarrhea, weight loss, fatigue. It's a classical form of disease. However, studies show, that pattern of clinical presentation of CeD has changed. More adult patients are presented with non-classical symptoms, which include: iron deficiency anemia, osteoporosis, dermatitis herpetiformis, elevated transaminases, recurrent miscarriages.

Case report

41-year-old man, without any disturbing symptoms, suddenly suffered fragility fracture of L2 vertebral body. Dual energy X-ray absorptiometry (DXA) showed low bone density with, T-score of -4.7 and Z-score of -4.6 at the L3/L4 vertebral bodies. Such results indicate osteoporosis. In differential diagnosis of osteoporosis, following possibilities were excluded: myeloma (normal proteinogram), neoplasm metastases to the bones (markers CEA, CA125, CA 19.19, AFP, PSA within normal ranges), renal failure. Endocrine diseases were also excluded: testosterone, LH, FSH, DHEA, cortisol, GH, TSH, FT3, FT4 levels were normal. PTH (25.10 pg/ml), calcium (9.87 mg/dL) and vitamin D level (38 ng/ml) were also normal. Rheumatoid factor was negative. Patient has no family history of osteoporosis and non traumatic fractures. Doctor's attention was drawn by the history of dapsone usage, due to Duhring's disease. Skin changes appeared in 1986 - after drinking Lugol's fluid following Chernobyl nuclear power plant disaster. Patient was using dapsone for almost 20 years. Moreover, patient's sister is diagnosed with CeD. Patient never had any gastrointestinal complaints. Diagnostic towards celiac disease was implemented. Serologic studies showed an elevated IgA antibodies of tissue transglutaminase, gliadin and endomysium. Duodenal biopsy revealed atrophy of the intestinal villi - 3a in Marsh grade. Furthermore, genetic test revealed that he carries DQ2 and DQ8 HLA class II alleles. Treatment with a gluten-free diet, calcium and vitamin D supplementation was recommended. DXA done 9 months later showed improvement with T-score of -2.8 and Z-score of -2.9.

Conclusions

Osteoporosis in young man is always a symptom of another disease. Primary care physicians, gastroenterologists, and endocrinologists should always take CeD under consideration in any patient who presents low bone density regardless of gastrointestinal complaints and vitamin D level. This case also shows the importance of screening for CeD in first-degree relatives of patients diagnosed with CeD, even if they're asymptomatic.

Clinical features of measles in adults in Kharkiv Region in 2018

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Introduction

The last outbreak of measles, which covered almost all countries of the world, is characterized by a significant increase in the proportion of adult population in the structure of the diseased. Thus, according to official statistics, in 2018 in Ukraine, which is the leader among the European countries in the number of measles patients, more than 54000 cases were registered and more than 20000 of them were among adults.

Purpose

To study the clinical features of measles in adults in Kharkiv region in 2018 outbreak.

Material and methods

Processing of the data of 99 case histories of patients with measles, who had been treated at the Kharkiv Regional Clinical Infectious Disease Hospital in 2018, was performed. The diagnosis was established on the basis of clinical and epidemiological data and confirmed by the presence of anti-measles IgM antibodies in ELISA.

Statistical processing was carried out on IBM PC using Excel spreadsheets. The method of variation statistics was used to calculate the Student's T- and Pearson $\chi 2$ tests.

Results

The number of sick women and men was almost equal (49 and 50 people respectively). The age of patients varied from 18 to 64 y.o. and in average was 32,76 ± 0,99 years. 55,56% of patients belonged to the age group of 25-40 years.

According to anamnestic data 46 (46,47%) of patients were vaccinated against measles in childhood.Disease started from fever, which was observed in 100% of patients. 98,99% of patients complained of cough (in 90,9% – dry). 71,72%of them had pharyngitis, 48,8% – conjunctivitis, 32,32% – rhinitis. Koplik spots were detected in 54,55% of patients. The average duration of the catarrhal period was 3,98 ± 0,13 days.

Maculopapular rash was observed in all patients and appeared on 3,98 ± 0,13 day of the disease, in 53,54% of cases it was abundant, in15,15% accompanied by itching of the skin. An average duration of exanthema elements appearance was 3,70 ± 0,15 days, there was presence of stages.

73,74% of patients had an enlarged lymph nodes. In 28,28% people signs of dyspepsia (vomiting or diarrhea) were observed.

There was no significant difference in main clinical manifestations in vaccinated and unvaccinated ($p>0,05$).

Conclusions

1. The main value in clinical measles diagnosis had presence of fever, cough, conjunctivitis, maculopapular rash and Koplik spots. 2. The difference between the majority of clinical signs in vaccinated and unvaccinated individuals was insignificant. 3. The fact that almost the half of the adult patients had anamnestic data about previous vaccination against measles results in necessity to review adult vaccination approaches.

Etiology of lower urinary tract infections in patients treated in nephrology outpatient department. Antibiotic susceptibility of microorganisms.

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Introduction

Urinary tract infections (UTI) are a frequent problem in society and a common reason for antibiotic therapy, often ineffective.

Aim of the study

The purpose of the study was to evaluate the etiology of lower UTI in patients treated in nephrology outpatient department and to estimate microorganisms antibiotic susceptibility.

Materials and methods

We analyzed all consecutive 137 microbiological urine cultures (UC) from 54 patients (45F, 9M) treated in nephrology outpatient department in USK nr 1 in Łódź in 2018 year. The types of bacteria were identified and the most frequent species responsible for UTI were analyzed. The sensitivity and resistance of all microbes to specific antibiotics was assessed.

Results

The patient mean age was 65.3 ± 16.1 years (F: 65.5 ± 16, M: 64 ± 17.5). Twenty one bacterial species were identified: 13 Gram positive, 8 Gram negative. The analyzed UC contained 164 bacteria (98 Gram negative, 66 Gram positive). In 68 tests (49.6%) there were only Gram negative bacteria, Gram positive in 51 (37.2%), and both negative and positive in 18 (13.1%). 31 UC were made from male patients: 19 containing only Gram positive bacteria, 8 Gram negative, 4 combined, total number of microbes: 38 (26 Gram positive, 12 Gram negative). 106 UC were from females: 60 containing only Gram negative bacteria, 32 Gram positive, 14 combined, total number of microbes: 126 (86 Gram negative, 40 Gram positive). The most common Gram negative bacteria was *Escherichia coli* (37.2%) that showed 100% susceptibility to: amikacin, cefepime, gentamicin, carbapenems: imipenem and meropenem and piperacilin with tazobactam while among the oral antibiotics its highest sensitivity was to: cefuroxime (84.9%), fosfomycin (94%) and nitrofurantoin (83%). In approximately 50% of cases *E. coli* was resistant to semisynthetic penicillins, fluoroquinolones and trimethoprim/sulfamethoxazole. The most common Gram positive bacteria was *Streptococcus mitis* (7.9%) that showed 100% susceptibility to vancomycin and linezolid, 92% to ampicylin and ceftriaxone and among oral antibiotics its highest sensitivity was to: cefuroxime (92%) and penicillin (90%). *S. mitis* was resistant to ciprofloxacine, nitrofurantoin and trimethoprim/sulfamethoxazole in every case. ESBL-producing *E. coli* occurred 7 times, ESBL-producing *Klebsiella pneumoniae* 3 times.

Conclusions

The most frequently occurring bacteria causing UTI are in 50% resistant to antibiotics recommended as a first-line treatment fluoroquinolones and trimethoprim/sulfamethoxazole.

The assesment of SPT and sIgE performance in the diagnosis of food allergy

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Introduction

Food allergy is common problem with prevalence of approximately 7%. Its symptoms vary from mild (i.e. hives, itching, eczema) to severe (i.e. anaphylaxis - a life-threatening whole-body allergic reaction). Proper diagnosis is essential for patients' quality of life. Tests should be characterized by high sensitivity to detect all patients with allergy. It allows administration of appropriate treatment to prevent the most dangerous complications. On the other hand, tests should be specific to avoid unnecessary dietary restrictions, which may highly affect patients' habits. Nowadays, there are available following examinations: skin prick test (SPT), assessment of specific IgE (sIgE) in peripheral blood samples, and oral food challenge (OFC). Due to acceptable costs and simplicity, SPT and sIgE are commonly used by GPs and allergists. In our study we compare their predictive potential in diagnostic process of food allergy in comparison to inhalant allergy.

Aim of the study

Goal of the study was to compare SPT and sIgE performance in the diagnosis of food allergy.

We analyzed clinical data of 212 patients who have undergone SPT test in diagnostic process of food allergy at Department of Immunology and Allergy. For 51 patients the results of both tests: SPT and sIgE were available at least for one allergen. We found 254 complete pairs of mentioned tests in total. Correlation were tested using Spearman's Rank-Order Correlation. For all allergens for which complete data were available, we performed ROC analysis separately for SPT (n=764) and sIgE (n=313) results. Statistical analysis was performed using Statistica13.1 PL (StatSoft).

Material and methods

We observed 59.26% (95% CI: 45.72%-72.79%) concordance between sIgE and SPT results in the patients with symptoms of food allergy and 66.67% (95% CI: 44.67%-88.65%) for patients with inhalant allergy symptoms. For asymptomatic allergies these values are equal to 76.50% (95% CI: 70.57% - 82.43%) for food and 66.67% (95% CI: 51.19% - 82.14%) for inhalant allergy. Spearman correlation between mean wheal SPT and sIgE concentration of food allergens were R=0.205, p=0.136 and R=-0.023, p=0.747 for symptomatic and asymptomatic patients respectively. For inhalant allergies SPT and sIgE concentrations correlated in both symptomatic (R=0.469, p=0.032) and asymptomatic patient (R=0.508, p<0.001). Considering food allergies, SPT with cut-off point at least 3 mm was characterized by specificity of 88.60%, sensitivity – 38.75%, NPV (negative predictive value) – 92.52%, and PPV (positive predictive value) – 28.44%. For sIgE with 0.35 as cut-off point, we observed the specificity was 58.90%, sensitivity – 81.25%, NPV – 86.67%, and PPV – 48.86%. AUC was lower for SPT than sIgE (0.657 (95% CI: 0.585 – 0.728; p<0.001) and 0.745 (95% CI: 0.677-0.814), respectively).

Results

Obtained results indicate that sIgE is more sensitive, but less specific than SPT performance in the diagnosis of food allergy.

Occurrence of gastrointestinal symptoms among patients undergoing haemodialysis

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Introduction

Gastrointestinal symptoms (GIS) are commonly reported in patients undergoing regular haemodialysis. The cause of these chronic symptoms is unclear, but it seems, that some nutritional habits or psychological well-being might contribute to their occurrence.

Aim of the study

The aim of the study was to investigate the prevalence of the clinical gastrointestinal symptoms and their association with psychological conditions and dietary patterns among patients undergoing haemodialysis.

Materials and methods

This cross-sectional study included 34 adults haemodialysis patients (HD) and 36 healthy volunteers. Participants completed the following questionnaires: the Gastrointestinal Symptom Rating Scale (GSRS), the Psychological General Well-being (PGWB) index and the Food Frequency Questionnaire (FFQ6). Gastrointestinal symptoms which patients defined as severe or very severe were separately calculated and described as severe GIS. Information about the duration of kidney disease, socio-demographic variables and other chronic diseases were also collected.

Results

The overall prevalence of severe GIS in end-stage renal disease patients was significantly higher in the patients than in control group (5% vs. 1% p=0.044). Additionally, diarrhea was statistically more frequently reported by HD patients (32% vs. 11%; p=0.042). The median time of haemodialysis, which was 5 (IQR: 1-10) years, did not effect on the incidence of GIS (p=0.128). The median duration of chronic kidney disease (CKD) was 11 (IQR: 3-16) years. Interestingly, the patients who were suffering from CKD for more than 15 years were statistically less likely to present GIS determined by total score in GSRS (22 IQR: 18-28 vs. 38 IQR: 26-43; p=0.018). The subjective anxiety measured by PGWB index was significantly higher in HD patients (16 IQR: 13-19 vs. 14 IQR: 11.5-16; p=0.045). The diet of HD patients occurred to be statistically poorer in dairy products, eggs (p<0.001), vegetables (p<0.001) and fruits (p<0.001) in comparison to the control group. Furthermore, the consumption of sugar, sweets and white wheat bread was higher in the HD patients. Psychological well-being among the subjects (expressed as the global score obtained in PGWB questionnaire), was negatively correlated with the occurrence of GIS (r=-0.438; p<0.001).

Conclusions

The prevalence of the GIS in haemodialysis patients is high and causes significant discomfort. Moreover, the presence of GIS was associated with reduce of psychical well-being and insufficient consumption of protein or vitamins. Proper nutritional habits could lead to improving quality of life in the examined group of patients.

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Dependence between IL-12 and IL-23 concentration and cognitive function in people with multiple sclerosis.

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Introduction

Multiple sclerosis is an autoimmune disease affecting the nervous system, which pathogenesis remains unclear. Literature suggests that IL-12 and IL-23 may play a major role in the development of multiple sclerosis. IL-23 stimulates the proliferation of CD4 + and helper T cells, which are of key pathogenic importance in the autoimmune response and inflammatory processes of the central nervous system.

Aim of the study

To compare serum levels of IL-12, IL-23 between healthy individuals and patients with multiple sclerosis with regards to their cognitive function.

Materials and methods

After evaluating inclusion/exclusion criteria, 21 patients with multiple sclerosis (mean age 42.95 ± 10.24) and 21 healthy individuals (mean age 42.00 ± 6.11) were included in the study. Groups were age- and sex-matched. Before enrollment in the study, all participants had signed written informed consent. Each participant had cognitive function evaluated by the Montreal Cognitive Assessment (MoCA), had been screened for the depressive disorder by the Beck test and had sleep quality assessed by Pittsburgh Sleep Quality Index (PSQI). A sample of blood was collected from each participant from the basilic vein to the anticoagulant. The blood sample was centrifuged. Afterwards, the plasma was collected, portioned, and frozen for later experiments. An enzyme linked immunosorbent assay was performed to assess serum levels of IL-12 and IL-23. To calculate results, the Mann-Whitney U-test and Spearman's correlation were employed.

Results

There was a significant difference between healthy controls and the study group in MoCA score (28±1,4 vs 24±2, p<0,0001 respectively). There was no significant difference shown by the Beck test and the Pittsburgh Sleep Quality Index (4,9± vs 6,9± ,p=0,9878; 5±3,6 vs 5,3 ±4,2, p=0,9697), as well as in serum levels of IL-12, IL-23 (6,3±4,1 vs 11,2±7,1, p=0,3662; 10,5±19 vs 57,1±128,3, p=0,1743). There was a correlation between the results of the Beck test and the results of the sleep quality questionnaire of 0.61 at p<0.05.

Conclusions

People with multiple sclerosis had a diminished cognitive function compared to the control group. Greater susceptibility to depressive disorders was correlated with a worse subjective quality of sleep score. No relationship between IL-12/23 concentration and cognitive function was found. The lack of difference in interleukin concentration between groups could be caused by immunomodulatory treatment.

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Post lumbar puncture headache: features of clinics and diagnosis

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Introduction

Post lumbar puncture headache is a complication that occurs in the practice of a neurologist, neurosurgeon, infectionist and anesthetist. According to the definition of the International Headache Society, post lumbar puncture headache is a headache that develops within five days after dural puncture and spontaneously disappears within 7 to 14 days. It may be accompanied by rigidity of neck muscles, hearing impairment, photophobia, nausea. The average frequency of post-puncture headache is 0.1-36%.

Aim of the study

Determine the features of the clinic and the diagnosis of post lumbal puncture headache.
Materials and methods. The work is based on data from the retrospective analysis of patient's disease history of the neurological department of the LOCL and the adult infectious department of the LOICL during 2016-2018.

Results

7 patients had post lumbar puncture headache. 71% of them where female, 29%-male, the oldest patient was 30 years old, the youngest was 21, the average age is 25 years. According to the type of body structure -71% asthenics, 29%- normostenics. Body mass index was normal in 57% , the body weight was reduced in 43%. An indication for lumbar puncture in 5 patients was suspected of meningitis, in 1- diagnostic lumbar puncture (MS), in 1-spinal anesthesia. Consultation of the neurologist was carried out in all patients. A concomitant diagnosis of migraine was detected in 57% of patients. In 3 patients, the pain arose on the second day after the puncture, at 4 on the third day. All patients had pain in the fronto-parietal region. It had pressure or pulsating character with bilateral localization, which sharply increased after changing the position of the body from the horizontal to the vertical, as well as the appearance of nausea. In 5 patients, irradiation of pain to neck was observed. 3 patients had rigidity of neck muscles, dizziness and vomiting followed by dehydration; 3 patients had vestibulopathy and a positive symptom of Mandonesi. A positive Gutsche sign was observed in 7 patients. Reduced hearing loss was in 2 patients. MRI was performed in 5 patients.

Conclusion

According to the results of the study, post lumbar puncture headache occurs more frequently in women, younger patients (20-30 years old), persons with asthenic body structure and tendency to weight loss, and patients suffering from migraine. Post lumbar puncture headache is manifested by a specific clinical symptomatology, a definite MRI pattern, which serves as an important diagnostic criteria in the practice of a physician. In most cases, post puncture headache was transient, but its presence requires close attention of the physician, especially disturbing is the presence of a convulsions or a neurological deficit.

Location of focal brain lesions on MRI in differential diagnosis of MS patients

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Introduction

Multiple sclerosis (MS) is a chronic demyelinating disease of central nervous system (CNS). The characteristic feature of MS are lesions in central nervous system fulfilling specific criteria disseminated in space and time visible on magnetic resonance imaging (MRI). However the presence of CNS lesions on MRI is not specific only for MS. There are many other diseases with lesions detected on MRI which can mimic MS.

Aim of study

The aim of the study was to find a method to distinguish the MS-patient from non-MS-patients based on MRI distribution and location of focal brain lesions in MRI.

Material and methods

Eighty one patients were included in the study (45 SM and 37 non-SM). Multiple sclerosis diagnosis was based on 2017 McDonald criteria. Non-MS patients were defined as a patients with focal brain lesions visible on MRI which did not fulfill criteria of MS. In each patient disease duration and neurological deficit based on Expanded Disability Status Scale (EDSS) were evaluated. All of these patients underwent MRI examination (1.5 T Siemens, Avanto). In post-processing analysis location of lesion in juxta-cortical, deep white matter (DWM), periventricular, corpus callosum, radially to corpus callosum (Dawnson's finger) and in infratentorial area was evaluated based on T2-FLAIR and PD weighted mages.

Results

In MS-patient group we observed significantly more frequent distribution of lesions in periventricular area than in non-MS patients (77,8% vs 33,3% $p<0.001$ respectively). Corpus callosum was also significantly more frequent involved in pathological process in MS than in non-MS patients (80,0% vs 41,7% $p=0.001$respectively). Characteristic features of Dawson's finger were more frequently observed in MS than non-MS patients (71,1%) vs (19,4% $p<0.001$, respectively). Additionally, infratentorial lesion location was also more frequent in MS than in non- MS patients 64,4% vs 30,6%; $p=0.005$, respectively).

Conclusion:

In MS-patient group we observed more specific distribution and location of demyelinating changes comparing to non-MS-patient group. Periventricular, corpus callosum, feature of Dawson's finger and infratentorial changes were more characteristic for MS than for non-MS patients.

Developmental prosopagnosia in Poland – prevalence and characteristics

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Introduction

Developmental prosopagnosia (DP) is defined as impaired face recognition in the absence of brain injury or intellectual deficit. It can have a large impact on psychosocial functioning and affect a patient's quality of life. The prevalence of DP in the general population is estimated to be 2-3%. Despite growing interest, no formal diagnostic criteria have been established for clinical use yet.

Aim of the study

Assessment of DP occurrence and characteristics in the Polish population.

Materials and methods: We administered an online questionnaire consisting of 20-item Prosopagnosia Index (PI20) to evaluate self-reported problems with face recognition. Cambridge Face Memory Test (CFMT) and Glasgow Face Matching Test (GFMT) were applied to assess respondents face memory and perception. We also obtained additional data on respondents' gender, age and handedness. A total of 1276 questionnaires were included in the study. 66.1% of respondents were women, 33.9% were men. Mean age was 28.3 ±9.5 (range: 14-75). 8.7% of participants were left-handed. Relationships between PI20, CMFT and GFMT scores were statistically analyzed with regard to demographic characteristics.

Results

Mean PI20 score was 49.6±18 (range:20-99). In 11.8% of respondents, PI20 result indicated mild, in 8.3% moderate and in 3.9% severe DP. Mean CFMT total score was 58.1±8.8 (range: 26-72) and mean GFMT score was 33.9±4 (range: 18-40). Women had significantly higher GFMT score than men ($p=0.002$). Age was positively correlated with PI20 (R 0.16, $p<0.001$) and total CFMT (R 0.08, $p=0.003$) scores. PI20, CFMT and GFMT scores did not differ depending on handedness. Negative correlations were found between PI20 score and both CFMT (R -0.43, $p<0.001$) and GFMT (R -0.35, $p<0.001$) results. CFMT and GFMT scores showed a strong positive correlation (R 0.52, $p<0.001$). According to the cutoff values from original papers, 81 (6.3%) of respondents scored below the threshold in CFMT, 27 (2.4%) in GFMT, and 50 (3.9%) reported symptoms indicating severe DP. Out of respondents who self-reported symptoms indicating severe DP, only 15 (30%) scored below cutoff in CFMT and 6 (12.8%) in GFMT. On the contrary, 32 (3.3%) and 16 (1.9%) out of respondents reporting no problems with face recognition had total scores below cutoff in CFMT and GFMT, respectively.

Conclusions

Memory and perception of faces are strongly correlated, playing complementary roles in face processing. Prevalence of DP measured by PI20 and CFMT was higher in Polish population than in normative data. Although PI20 results were correlated with CFMT and GFMT scores, respondents with self-reported severe DP did not have CFMT and GFMT scores below the threshold in most cases. Therefore country-specific cutoff values should be established and clinical assessment of DP need to be based on several diagnostic tests. Different cutoffs in males and females may also be considered.

The clinical course of Listeria monocytogenes meningitis compared to other community-acquired bacterial meningitis

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Introduction

Bacterial meningitis (BM) is a life-threatening infectious disease in which not only subarachnoid space and meninges, but also brain parenchyma is involved in the inflammatory reaction (meningoencephalitis). Listeria monocytogenes is a gram-positive bacillus principally spread by contaminated food. The main risk factor for Listeria meningitis (LM) is age and immunodeficiency. Due to the resistance of L. monocytogenes to third generation cephalosporins (empiric treatment of BM), it is important to distinguish a group of patients with an increased risk of Listeria meningitis where the drug of choice is ampicillin.

Aim of the study

The aim of the study was to find differences in symptoms and signs, laboratory tests and comorbidities in order to distinguish irregularities characteristic of LM and to evaluate the results of treatment compared to non-Listeria bacterial meningitis (NLBM) patients.

Material and methods

Medical charts of all patients with BM diagnosed in Department of Infectious Diseases for Adults between 2010 and 2017 were analyzed. There were 337 patients with BM divided into two groups of Listeria monocytogenes meningitis (Group A; n=24) and non-Listeria bacterial meningitis (Group B; n=313). The diagnosis was based on the clinical manifestation, CSF tests, positive cultures or positive direct microscopy. All cases of LM were confirmed microbiologically. Symptoms and signs, incidence of comorbidities, deviations in blood and CSF laboratory tests, treatment results were studied in both groups.

Results

The age range was 17-93 years. Patients from group A were older compared to group B (62 years vs. 57 years, p=0.039). The analysis showed no significant differences in symptoms and signs. Patients with LM were more likely to have tumors (29.17% vs. 8.59%, p=0.002) and more often had any immunodeficiency (45.83% vs. 10.58%, p<0.05). Laboratory tests showed a lower WBC level in blood (10.7 cells/mm3 vs 15. 5 cells/mm3, p=0.0036), lower granulocytes% (62% vs. 90%, p=0.002) and lower CRP level (150 mg/L vs 230 mg/L, p=0,02) in group A . The CSF tests showed a lower cell count (531.5 cells/mL vs. 1230 cells/mL, p=0.01) and a lower chloride level (113 mmol/L vs. 117 mmol/L, p=0.009) in Group A.

Conclusions

Meningitis due to L. monocytogenes is a disease that occurs more often among immunocompromised and elderly individuals. Symptoms and signs are similar in both groups. Patients with LM have a lower cytosis in CSF and a lower WBC level in peripheral blood morphology.

Continuous non-invasive monitoring of subarachnoid space width during prolonged exposure to 5% carbon dioxide.

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Introduction

Movement of the cerebrospinal fluid (CSF) can be divided into two major components: circulatory (from the choroid plexus to the arachnoid granulations) and pulsatile (oscillatory). It is known that this pulsatility is predominantly driven by cerebral arterial inflow, jugular outflow and respiration, however, the precise nature of CSF hydrodynamics and its association with hemodynamic parameters remains unclear. Near-infrared transillumination/backscattering sounding (NIR-T/BSS) is a novel non-invasive method for constant monitoring of the subarachnoid space (SAS). In this method, emitted infrared radiation transilluminates the scalp, skull, meninges and propagates within the SAS, partially scattering on each level. A sensor on the surface of the skin registers the intensity of the partially reflected light – appropriate processing of thusly obtained signal produces a measure which is directly proportional to the width of SAS.

Aim of the study

To assess the influence of exposure to elevated inspiratory CO2 concentration on SAS width and its oscillations as well as the feasibility of NIR-T/BSS for prolonged monitoring of this parameter.

Material and methods

Twenty healthy volunteers (14 males, 6 females; age=28.5±7.5; BMI=24.2±3.6 kg/m2) were subjected to 30 minutes of breathing air (baseline), followed by 30 minutes of breathing 5% carbon dioxide (5% CO2, 21% O2, 74% N2). The signal of SAS width was continuously recorded over left and right hemispheres separately (SAS-L, SAS-R) by NIR-T/BSS. Blood pressure (SBP, DBP) and heart rate (HR) were recorded using continuous finger photoplethysmogram. Oxygen saturation (SpO2), respiratory rate (RR), minute ventilation (MV), end-tidal O2 and CO2 (EtO2, EtCO2) were also recorded. Wilcoxon signed-rank test was used to compare changes in the measured parameters (Statistics for Windows 7.0 package). Medians of the time-averaged wavelet transforms of BP and SAS signals were compared in order to detect changes in amplitude within the given frequencies (MATLAB v.R2018b). $P \leq 0.05$ was considered significant.

Results

Breathing 5% CO2, as compared to baseline, caused significant ($p<0.01$) rise in average: SBP (+4.76%), DBP (+7.01%), HR (+13.19%), MV (+95.3%), EtO2(+14.1%) and EtCO2 (+29.7%). The changes in average SAS-L and SAS-R were also significant: -15.4% ($p=0.002$) and -11.1% ($p=0.039$) respectively. Comparison of wavelets derived from BP signals showed a significant drop in the median amplitudes of oscillations associated with endothelial and neurogenic activity (~0.001-0.05 Hz). Analogous comparison of SAS signals showed a significant augmentation in the oscillations of respiratory origin (0.145-0.6 Hz).

Conclusions

NIR-T/BSS can be used to monitor SAS width changes over prolonged periods of time. Increased inspiratory CO2 concentrations have significant impact on oscillations of SAS width as well as hemodynamic and spirometric parameters.

Frailty Syndrome in multiple sclerosis

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Introduction

The Frailty Syndrome is defined as the state of increased susceptibility to endo- and exogenous stress factors, as a result of reduction of physiological reserves. This results in limited ability to maintain body homeostasis and response to stress. This syndrome carries an increased risk for poor health outcomes including falls, incident disability, hospitalization, and mortality. The Edmonton Frail Scale is a valuable scale for detecting Frailty.

Purpose

The purpose of the study was to select a group of patients suffering from sclerosis multiplex, who are exposed to a higher risk of Frailty Syndrome.

Materials and methods

The study included 112 patients suffering from sclerosis multiplex. 72 women and 40 men, in the age from 26 to 70 years old (on average 44,31). The study consisted in filling by patients a questionnaire, concerning questions about the duration and the intensification of the disease and 3 scales: Edmonton Frail Scale, Beck Depression Inventory and Quality of life SF-36 questionnaire. The achieved results were analysed with use of multiple logistic regression analysis.

Results

The most often type of disease among patients was secondary progressive SM (74,11 % patients), and average duration of disease was 12,79 years. The Frailty Syndrome with light intensification of syndroms occured by 11 patients (9,82 %), and with average and heavy intensification of syndroms by 3 people each (2,67 % each). There was proven a connection in univariate logistic regression analysis between occurrence of Frailty Syndrome and: form of disease (p=0,0004); occurrence of problems with walking (p=0,02); result of Beck Depression Inventory (p=0,0001) and Quality of life SF-36 questionnaire (p=0,0001). In multiple logistic regression analysis, the independent predictors of occuring of frailty syndrome in the analysed group turned out to be: secondary progressive SM (p=0,001; OR=1.63) and higher result in Quality of life SF-36 questionnaire (p=0,003; OR=1,07).

Conclusions

Patients suffering from secondary progressive SM, by whom there occured problems with walking, higher risk of getting depression and with lower life quality are particulary susceptible

to occurring of Frailty Syndrome. That indicates on the need of holistic approach during the therapy of the patients.

Differential diagnosis of multiple sclerosis and other diseases: a possible role of brain atrophy measurements in magnetic resonance imaging

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Introduction

Magnetic resonance imaging (MRI) is established as the most important paraclinical tool in diagnosis of multiple sclerosis (MS). Although the MRI sensitivity to detect demyelinating lesions is very high, its specificity is still not satisfactory. There are several neurological and non-neurological diseases which seem to mimic MRI lesions in MS. In the last few years brain atrophy (BA) became a very important MRI parameter in diagnosis and monitoring of MS. Whole BA is not commonly measured in clinical practice due to a variety of complicated and time-consuming procedures. Simple linear BA parameters seem to be more useful in daily clinical routine. Establishing criteria in differential diagnosis between MS and non-MS patients would be crucial for future treatment decisions.

Aim of the study

To study the application of the linear BA measurements in differential diagnosis between MS patients and non-MS patients with white matter lesions on MRI.

Material and methods

81 patients (45 MS and 36 non-MS) were enrolled in the study. Multiple sclerosis diagnosis was based on 2017 McDonald criteria. The non-MS group was defined as patients with no clinical diagnosis of MS but with disseminated lesions visible on MRI. In each case disease duration and neurological deficit using Expanded Disability Status Scale (EDSS) was evaluated. Magnetic Resonance Imaging was performed on 1.5T (Siemens, Avanto) scanner.

In post-processing analysis the following linear parameters of BA were measured: bicaudate ratio (BCR; minimum distance between the caudates divided by the brain width), third ventricle width (3VW) and corpus callosum index (CCI; the sum of the widths of the anterior, medium and posterior segments of corpus callosum divided by its widest anteroposterior diameter).

Results

The EDSS score was higher in MS than non-MS patients [median 2,00 (1,00; 3,50) vs 1,00 (0,00; 2,00); p = 0,004). MS patients had significantly longer disease duration compared to non-MS [median 4,0 (2,0;8,0) vs 2,0 (1,0;3,0); p=0,001). MRI analysis showed that CCI was significantly lower in MS patients compared to non-MS [median 0,41 (0,36;0,45) vs median 0,44 (0,40;0,47); p<0,001). BCR and 3VW did not vary significantly between the groups (p>0,05). In MS patients there was a positive correlation between 3VW and EDSS (r=0,40; p=0,007) as well as between 3VW and disease duration (r=0,30; p=0,043) while in non-MS group BCR correlated positively with EDSS (r=0,39; p=0,018) and disease duration (r=0,31; p=0,066). No statistically significant correlations were found between: CCI and EDSS or disease duration in both groups, BCR and EDSS or disease duration in MS group, 3VW and EDSS or disease duration in non-MS group.

Conclusions

These findings suggest that simple linear brain atrophy measurements may serve as a valuable tool in differential diagnosis of MS patients and non-MS patients.

Conventional MRI parameters in differentiating multiple sclerosis and non-multiple sclerosis patients.

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Introduction:

Brain magnetic resonance imaging (MRI) is an important tool in the diagnosis and monitoring of multiple sclerosis (MS). The conventional MRI parameters used to assess brain lesions burden in MS are: T2/FLAIR and T1 lesion volume. However, the occurrence of lesions on T2/FLAIR and T1-weighted images is not specific for MS. Focal brain lesions are frequently present in non-MS conditions.

Aim of the study:

The aim of the study was to find features on conventional MRI images which distinguish MS from non-MS patients with focal brain lesions.

Material and methods:

Eighty-one patients (45 MS and 36 non-MS) were included in the study. Multiple sclerosis diagnosis was based on 2017 McDonald criteria. Non-MS patients were defined as patients with brain lesions visible on MRI which did not fulfill criteria of MS. In each patient disease duration and neurological deficit based on Expanded Disability Status Scale (EDSS) were evaluated. Magnetic resonance imaging was performed on 1.5T (Siemens, Avanto) scanner. In post-processing analysis volume of T2/FLAIR and T1-lesions were measured. Additionally, T1/T2 FLAIR ratio was calculated.

Results:

In MS group disease duration was longer than in non-MS patients [median 4,00 (2,00; 8,00) vs 2,00 (1,00; 3,00); $p = 0,001$], EDSS score was higher in MS than in non-MS patients [median 2,00 (1,00; 3,50) vs 1,00 (0,00; 2,00); $p = 0,004$]. MRI analysis showed higher T1 lesion volume in MS patients in comparison to non-MS group [median 0,52 (0,27; 1,19) vs 0,13 (0,04; 0,63); $p < 0,001$]. Similar results were found for T2/FLAIR lesion volume [median 1,70 (0,80; 3,53) vs 0,60 (0,28; 2,35); $p = 0,017$]. T1/T2 FLAIR ratio was higher in MS group than in non-MS [median 0,32 (0,23; 0,61) vs 0,14 (0,05; 0,22); $p < 0,001$].

In MS patients, T1/T2 FLAIR ratio correlated with disease duration ($r = 0,33$, $p = 0,025$) while in non-MS we did not find such correlation ($r = 0,04$, $p = 0,821$). We also found a correlation between T1/T2 FLAIR ratio and EDSS in MS patients but not in non-MS patients ($r = 0,31$, $p = 0,035$ vs $r = -0,12$, $p = 0,493$, respectively). T2/FLAIR lesion volume and T1 lesion volume did not correlated with disease duration and EDSS in MS and non-MS patients.

Conclusions:

Our results indicate that using simple, conventional MRI parameters may be useful in differentiating MS patients from patients with focal white matter lesions detected on MRI.

Experimental application of Artificial Neural Network (ANN) modeling for the prediction of multiple sclerosis diagnosis

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Introduction

Artificial Neural Network (ANN) modeling is a type of computer programming, which is inspired by means of information signalling between clusters of neurons in human brain. Each connection made among artificial neurons resembles the biological synapse and can transmit a signal to another artificial "nodes", which are able to process and convey it further. It is trained to recognise relationships and patterns to predict the final outcome with the highest certainty. Multiple sclerosis (MS) is a demyelinating disease of CNS with various clinical, laboratory, radiologic manifestations and unknown aetiology. As a result, it is difficult to confirm MS diagnosis with certainity on its early stages. Therefore, it is of crucial significance to search for more precise diagnostic tools, such as neural networking.

Aim

Application of ANN modeling for the prediction of MS diagnosis.

Methods

We included patients admitted to the Department of Neurology, Barlicki University Hospital in Lodz from 2014 to 2019 with diagnosis of multiple sclerosis. We searched their documentation for statistically significant clinical, laboratory, radiologic manifestations of MS. With the usage of this data we applied multiple models of ANN's with different values for hyperparameters in order to find most efficient model with the best testing loss value. ANN's were implemented with Keras library Sequential feed-forward back-propagation model and different layers arrangement, activation functions, loss functions and different values for learning rate, momentum and batch size. Input data was divided into two sets: 90% was used for training and 10% was used for independent validation of models.

Results

Database of clinical, laboratory, radiologic results of 150 MS patients was performed. Due to small set of data the tested models mostly overfit or learn poorly. Despite this we managed to select a few models with best performance for further analysis. Our choice was based on the values of the loss function returned during validation phase of learning process.

Conclusions

All things concluded, because of the diversity in clinical, laboratory and radiologic manifestations of MS it continuously provides difficulty in proper diagnosis, especially on the early stage of the disease. Therefore, it is important to proceed with seeking more advanced, highly precise diagnostic tools.

Subacute Transverse Myelitis(SuTM) With Optic Nerve Involvement As A Manifestations Of Early Lyme Neuroboreliosis

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Introduction

Neuroborreliosis is defined as an infection of the nervous system by B.Burgdorferi, B.afzelii or B.garini, which can be classified as a disseminated stage of Lyme Disease, which can be subdivided into early and late phases. The major clinical manifestations of early LNB include Bannwarth's syndrome, peripheral radiculitis, cranial neuritis and lymphocytic meningitis. Less frequent manifestations include plexitis, acute or subacute transverse myelitis, which accounts for as few as 4% of all LNB cases. Another rare and frequently overlooked aspect of LNB is the optic nerve nerve involvement. Papilledema in the course of LNB can be associated with raised intracranial pressure in lymphocytic meningitis or optic neuropathy.

Case Description

We presens a case of a 23 - year old Caucasian female patient admitted to the Neurology Department due to hands tremor and paresthesia extending to forearms, without the complaint of upper limb weakness. Another major symptom included severe pain in the mid - cervical region, slight upper extremities tremor and diplopia, when looking to the far right. Palpable constant tremor was also detected in the lower extremities. During Ophthalmologic consultation papilloedema and blurred contour of the optic disc were observed.Routine blood tests were in normal range. CRP, ESR and TSH were within physiological limits. VDRL, HIV, EBV were negative. Borrelia Burgdorferi IgG and IgM antibodies levels, detected by Western Blot method, were significantly increased with increased Bd index .MRI images showed swelling and enlargement of the spinal cord extending from C3 to C6/C7 level. CSF findings included lymphocytic pleocytosis and increased level of protein . Lyme disease total IgM and IgG in CSF were significantly increased with abnormal CSF/serum IgG index greater than 1.5. The diagnosis was Subacute Transverse Myelitis (SuTM) due to Borrelia Burgdorferi infection. The patient received a 28 - day course of ceftriaxone (2g/day intravenously).After the period of antibiotic administration the symptoms subsided.

Discussion

The clinical presentation of our patient was unusual and, at a first glance, it was not consistent with typical manifestations of LNB. Due to the spinal cord and optic nerve involvement, the patient was tested for some typical viral, bacterial and autoimmunological factors that cause TM. Increased Borrelia Burgdorferi immunoglobulin index both in serum and CSF, lack of oligoclonal bands in CSF and negative bacterial and viral tests enabled to diagnose the patient with TM in the course of LNB. Because of the time in which the TM developed (weeks), the subacute subtype of transverse myelitis was chosen. The diagnosis was also supported by the symptoms improvement after ceftriaxone administration. Additionally, we can conclude that the optic

symptoms which developed in our patient - papilledema and diplopia - were caused exclusively by LNB as they also disappeared after ceftriaxone administration.

Comperative analysis of non-motor symptoms in patients with Parkinson's disease and atypical parkinsonisms

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Introduction:

After being diagnosed with idiopathic Parkinson's Disease (IPD) or Atypical Parkinsonism (AP) patients often tend to present non-motor symptoms (NMS) that can play a significant, negative role in their quality of life.Unfortunately, NMS are often not recognized by physicians in their everyday practice, and patients are not always aware of those symptoms'connection with parkinsonism.

Aim of the study:

The aim of the study was to explore the differences between occurrence of non-motor symptoms presented by patients with IPD and AP, including sleep, autonomic, psychotic and affective disorders.

Material and methods:

The study included 219 patients (184 with IPD, and 35 with AP)hospitalized between 2016 and 2018 in the Department of Neurology of the Medical University of Silesia.Non-motor symptoms were evaluated using patients' medical chart reviews and NMSquestionnaire. The clinical advancement of the disease was assessed using UPDRS part III, and modified Hoehn-Yahr scale (HY). Statistical analysis was conducted using Statistica.

Results:

There were no statistically significant differences between both IPD and AP groups within the parameters of sex, age, HY and UPDRS III OFF scales. Mean age of disease onset was higher in AP than in IPD (59.3 and 54.8 respectively; p=0.013). IPD patients received substantially higher daily dosage of L-dopa than AP patients (LEDD 845.45 and 577.20 respectively; p=0,012).Non-motor symptoms were presented significantly often (p=0.003) in AP patients (n=32, 91.4%), then in patients with IPD (n=122, 66.3%).However, autonomic and psychotic disorders didn't show statistically significant differences in both groups. Moreover, 92 patients with IPD (50.0%) and only 8 with AP (22.9%) reported sleep disorders (p=0.003).

Conclusion:

Non-motor symptoms are frequent in both IPD and AP which makes them an integral part of both diseases. Patients with AP are more likely to present non-motor symptoms in general, but rarely they complain of sleep disorders.

ONCOLOGY

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WWOX possesses duality of function in molecular pathways associated with AP-2α and AP-2γ in bladder cancer.

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Introduction

WWOX tumor suppressor interacts with several transcription factors such as AP-2α and AP-2γ. Based on literature data, WWOX protein represses oncogenic activity of AP-2γ in cytoplasm through inhibition of its transfer to nucleus and therefore impedes expression of target genes for this transcription factor. In terms of AP-2α, the molecular mechanism is not unequivocal since depending on cancer type it may behave as suppressor or oncogene, which introduces uncertainty in its function. Preliminary bioinformatic analysis demonstrated that WWOX gene can have different function (as a suppressor or oncogene) by modulating diverse cellular pathways activated via AP-2α and AP-2 transcription factors in bladder cancer.

Aim of the study

The purpose of presented research was to determine molecular pathways that can be regulated by WWOX protein interacting with AP-2α and AP-2γ in bladder cancer cell lines with different grade status.

Material and methods:

Therefore, we created two in vitro cell lines models with different level of WWOX and high expression of TFAP2A and TFAP2C for RT-112 cell line (grade 2) and CAL-29 cell line (grade 4), respectively. For this purpose, carried out tests were focused on apoptosis (Muse® MultiCaspase Assay Kit), cell cycle (Muse® Cell Cycle Assay Kit), and selected transcription factors' target genes expression and genes connected with EMT process – CDH1, ZEB1, EZR (RT-qPCR).

Results

In RT-112 cell line variant with high WWOX/high TFAP2A we observed increased expression not only of target genes such as Ezrin (EZR), Forkhead box protein A1 (FOXA1), Krüppel-like factor 4 (KLF4), Cyclin-dependent kinase inhibitor 1A (CDKN1A, p21), but also genes connected with epithelial phenotype (CDH1) and mesenchymal phenotype (ZEB1). In CAL-29 bladder cancer cells with high WWOX/highTFAP2C, we noticed higher level of SMAD4, IKBKB, TP63 genes but lower CDH1 and ZEB1. However, analysis of programmed cell death revealed that overexpressed WWOX gene has anti-apoptotic properties in both RT-112 and CAL-29. It is consistent with results obtained from cell cycle for CAL-29 line, within which WWOX induced cells transition from the G0/G1 phase to S and G2/M phases.

Conclusions

Taken together, our study indicates that WWOX gene exhibits duality of function in bladder cancer, depending on differentiation of cancer cells and interaction with partners.

„Lineage switch"- case of 9 years old patient with conversion ALL into AML

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Introduction:

Acute leukemias are the most common tumours among children. They can be divided into lymphoblastic-ALL(80%) and myeloid-AML(20%). The conversion of one type into another is extremely rare. This phenomenon is called „lineage switch".

Case report:

A 9-year old girl was admitted to the Haematology and Oncology Department in March 2018 with suspected leukemia. The patient had been complaining about weakness, lack of appetite, limb and stomach pain as well as nausea for a week.

On admission the child was in good condition. On physical examination: patechiae were noticed on thorax and feet; lymph nodes under mandible were enlarged; liver and spleen were slightly extended but not painful.

Blood examination revealed: hyperleukocytosis-L:58 thous., anemia-Hgb. 9,7 g/dl, thrombocytopenia-Plt. 54 thous and presence of blasts. Common ALL (without BCR/ABL or MLL) was eventually diagnosed due to biopsy of marrow, in which 95% of blasts were reported. The patient was treated with protocol ALIIC 2009. Because of the fact that the answer to corticosteroids on the 8th day of treatment was not satisfying and there was 17,94% of blasts in marrow on the 15th day, the patient was qualified to the group of high risk. However, remission was achieved on the 40th day.

During induction therapy some complications occured- pancytopenia, peripheral polineuropathy and neutropenic fever. Additionally, in remission hyperpigmented lesions on the skin (like cafe au lait spots) and subcutaneous nodules appeared. The patient complained about bone pain. Because of that another examination of bone marrow as well as a biopsy of the skin were conducted. Due to the findings of these tests, an unclassified type of AML was diagnosed and the girl got AML-BFM 2012 protocol and induction therapy (AIE). During this treatment, the child's condition worsened dramatically – with pneumonia, subcutaneous oedema, hyperaesthesia and osseous pain. After 7 days of that protocol the patient was admitted to the Intensive Care Unit because of respiratory failure. Despite these complications chemotherapy was sustained.

The patient was qualified to HSCT from an unrelated donor, but sadly she did not achieve remission. Because of huge resistance of AML cells to usual therapy and the presence of CD33 molecule on the blasts, the girl was treated with IDA –FLAG+ gentazumab (anti-CD33) with no success. Another protocol with new medicines (TVTC) was also tried unsuccessfully with complications like septicaemia, pancytopenia and tremendous bone pain.

There was no possibility of other treatment and chance for girl to be cured. It was decided not to escalate the therapy. The patient died due to progression of leukaemia.

Conclusions

pThe lineage switch is really rare and its pathogenesis is not fully explained. Unfortunately the prognosis for patients with this conversion is highly unpromising. Analysing such cases can provide better understanding and improve treatment of lineage switch.

Homologous repair deficiency-related miRNAs in ovarian cancer

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Introduction

Homologous Recombination (HR) deficiency arising from mutations in BRCA1 and other HR genes is prevalent in ovarian cancer and sensitizes tumors to DNA damaging agents, predisposing to a targeted therapy with PARP inhibitors. Several genomic signatures were proposed as HR deficiency biomarkers, however low positive predictive values generally preclude their use in clinical practice. Here, we aimed to identify miRNAs differentially expressed in HR-deficient and HR-proficient ovarian tumors to create a miRNA-based signature of homologous recombination deficiency.

Material and methods:

We acquired miRNA expression profiles of ovarian tumor samples from The Cancer Genome Atlas (TCGA) repository. We annotated samples as HR-deficient (HRD) if they had somatic or germline mutations in any of the following genes from HR pathway: ATM, BARD1, BLM, BRCA1, BRCA2, BRIP1, NBN, PALB2, POLD1, RAD50, RAD51C, RAD51D; other samples were classified as HR-proficient (HRP). This gene set was chosen with KEGG database and limited to elements with known mutation status among TCGA patients. Samples with methylation in promoter of BRCA1 gene were excluded from the analysis. We compared miRNA expression between HRD and HRP samples using t-tests with FDR correction and calculated fold changes of expression. We treated miRNAs as differentially expressed if FDR<0.05.

Results

Among ovarian cancer samples, 97 were classified as HRD and 105 as HRP; 234 miRNAs had at least 10 reads per million in >50% of samples. At FDR<0.05, 21miRNAs were differentially expressed between HR-proficient and deficient ovarian cancer samples. 15 miRNAs were down-regulated: miR-182, miR-25, miR-30e, miR-9-1, miR-9-2, miR-9-3, miR-181c, miR-93, miR-196b, miR-17, miR-183, miR-200a, miR-128-2, miR-181d, miR-15a; and 6 miRNAs were up-regulated: miR-30d, let-7b, miR-224, miR-664b, miR-222, miR-150.

Using functional enrichment analysis of differentially expressed miRNAs (using DIANA mirPath v.3 online software), 8 out of 21 miRNAs were determined to be tightly connected with the function of homologous recombination pathway genes (miR-182, let-7b, miR-17, miR-15a, miR-30d, miR-30e, miR-181c, miR-183).

Conclusions

Observed differences in miRNA expression between samples of HR proficient and HR deficient ovarian cancer patients is a promising result for future development of miRNA-based signatures of the state of homologous recombination repair pathway function.

Transplantation course and infectious complications after autologous stem cell transplantation in multiple myeloma patients- a single centre study.

Monika Kowalik, Agnieszka Świątek, Emilia Sęczkowska, Marta Kalwas, Mateusz Pryt, Damian Mikulski

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Introduction

High-dose therapy with melphalan (HDT) followed by autologous stem cell transplant (ASCT) is the standardtreatment approach in transplant-eligible multiple myeloma (MM) patients. Approximately 60% to 90% of patients undergoing HDT and AST develop neutropenic fever and infections, a major cause of morbidity and mortality for this patient population.

Aim of the study

The aim of this study was to analyse transplantation course and infectious complications in MM patients treated at our institution. The aim of this study was also to determine the frequency of a treatment-related death (TRD) within 100 days from ASCT.

Patients and methods:

We retrospectively analysed 179 medical histories of the MM patients treated with ASCT between January 2011 and December 2017.

Results:

Patient characteristics:

The study group consisted of 90 women and 89 men (mean age 57.2±7.9). According to the International Staging System (ISS), 20.7% of patients were at stage I, 27.9% at stage II and 30.2% at stage III. A total of 205 ASCTs were performed in 179 MM patients in the analyzed period. In 4 patients (2.2%), a tandem (double) ASCT was performed. A second ASCT in the relapsed setting was performed in 28 (15.6%) patients. Data on the first transplant were considered for further evaluation.

Transplantation course

Patients received a mean CD34+ cell number of 6.6 × 106 /kg during ASCT. The median duration of grade 4 neutropenia was 8 days (range 3–22 days) and the median time to engraftment was 15 days (range 10–28 days). Patients received a median of 2 (range 0–6) platelet transfusions and a median of 0 (range 0–13) red blood cell transfusions. Filgrastim was administered in 100 patients for a median of 5 days (range 1-14). The median length of hospital stay from the day of ASCT was 20 days (range 14–34 days).

The most common adverse event of HDT and ASCT was gut mucositis (all grades-87%). Fever developed in 114 cases (63.7%). Pneumonia occurred in 19.5% and bacteriemia in 55.8% of patients. The most frequently isolated pathogens were Gram-positive cocci.

Only 1 patient (0.56%) was reported to have experienced a treatment-related death (TRD) within 100 days from ASCT.

Conclusions

A majority of patients undergoing HDT and AST develop neutropenic fever and infections requiring extensive treatment. ASCT is safe and effective therapeutic option for MM patients and treatment-related death rate for ASCT was low at 0.56%.

Radiotherapy-induced dysfunction of the thyroid and parathyroid glands

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Introduction

Hypothyroidism and hypoparathyroidism are complications of radiation therapy (RT) of the oropharyngeal cancer (OPC) contributing to greater long-term mortality in cancer survivors.

Aim of the study

To evaluate changes in thyroid and parathyroid function-related parameters in short and long term after RT in a group of patients with OPC. Secondary aim was to evaluate the results of 5 NTCP (normal tissue complication probability) models for radiation-induced hypothyroidism (RIHT) from the literature.

Material and methods:

In this prospective study, we included patients with OPC treated with intensity-modulated RT (total dose 70 Gy or equivalent) and extracted dosimetric parameters of their treatment plans from dose-volume histogram data. Concentrations of free thyroxine (fT4), thyroid stimulating hormone (TSH) and parathormone (PTH) were measured using ELISA. Levels of calcium, phosphate and total albumin levels were assessed using colorimetric assays. The measurements were performed in three timepoints: before RT, 24 hours after the last RT fraction and at one year following RT. We calculated NTCP scores corresponding to risk of RIHT development based on 5 models incorporating dosimetric and clinical parameters from the literature. All data are presented as medians with minimum-maximum range.

Results

Forty patients were included in the final analysis. TSH levels decreased post-RT: 0.69 mU/L (0.03-2.22) pre-RT vs 0.2 mU/L (0-5.81) post-RT, $p<0.001$, and increased to 1.01 mU/L (0.05-4.11) after 1 year post-RT ($p<0.001$, compared to the 2nd timepoint). fT4 levels did not differ between the 1st and 2nd timepoint ($p=0.726$) but increased 1 year post-RT: 6.17 pg/mL (3.42-39.51) vs 8.52 pg/mL (5.1-24.72), $p=0.038$. PTH levels also did not change in short term ($p=0.235$) but decreased after 1 year post-RT: 70.81 pg/mL (11.97-167.04) vs 41.98 pg/mL (4.77-100.23), $p=0.008$. Phosphate and corrected calcium levels did not differ significantly between the three timepoints ($p=0.117$ and $p=0.147$, respectively). Considerable differences between NTCP scores were observed, with varying number of patients predicted to develop hypothyroidism in long-term follow-up, based on the results from respective models: 34 (85.0%), 21 (52.5%), 37 (92.5%), 18 (45.0%) and 36 (90.0%). Although only 1 patient developed hypothyroidism 1 year after RT, the change in TSH level from baseline was correlated with results of three NTCP models from the literature: by Boomsma et al. ($R=-0.48$, $p=0.001$), by Cella et al. ($R=-0.35$, $p=0.028$) and by Ronjom et al. ($R=-0.50$, $p<0.001$).

Conclusions

Serum TSH levels decrease in short term over the course of RT treatment in OPC patients and increase after 1 year post-RT. Interestingly, fT4 levels also increase 1 year after RT. Risk of RIHT predicted by different NTCP models varies, pointing to considerable lack of agreement between those models.

Simple variables predict prolonged hospital stay and progression-free survival after autologous stem cell transplantation in multiple myeloma patients.

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Introduction

High-dose therapy with melphalan (HDT) followed by autologous stem cell transplant (ASCT) is the standardtreatment approach in transplant-eligible multiple myeloma (MM) patients.

Aim of the study

The aim of this study was to analyse disease response and the outcome in MM patients treated at our institution.

Material and methods:

We retrospectively analysed 179 medical histories of the MM patients treated with ASCT between January 2011 and December 2017.

Results

Patient characteristics

The study group consisted of 90 women and 89 men (mean age 57.2±7.9). According to the International Staging System(ISS), 20.7% of patients were at stage I, 27.9% at stage II and 30.2% at stage III. The predominant paraprotein was IgG kappa (39.1%), followed by IgG lambda (18.9%). The most commonly used induction chemotherapy prior to ASCT was CTD (cyclophosphamide, thalidomide, and dexamethasone, 67%), followed by VCD (bortezomib, cyclophosphamide and dexamethasone, 13.4%). After induction therapy, 45 patients (25.9%) achieved a complete remission(CR), 39% of patients had very good partial response(VGPR) and 32.8% of patients were in partial remission(PR). A total of 205 ASCTs were performed in 179 MM patients in the analyzed period. In 4 patients (2.2%), a tandem (double) ASCT was performed. A second ASCT in the relapsed setting was performed in 28 (15.6%) patients. Data on the first transplant were considered for further evaluation.

Determinants of length of hospital stay

The median length of hospital stay from the day of ASCT was 20 days (range 14–34 days). Univariate analysis showed that ISS stage III at diagnosis (p=0.005), serum creatinine >2 mg/dl at diagnosis (p=0.004) and hemoglobin <10 g/dl at diagnosis (p=0.04) were related to prolonged hospitalization (≥24 days) during ASCT.

Response to ASCT and PFS

Data on response to ASCT were available for 116 patients. Following ASCT, 44.0% of patients were in CR, 48.3% in VGPR, 6.0% in PR and 1.7% in SD(stable disease). Data on progression-free survival(PFS) were available for 122 (68.2%) patients. Median PFS was 23.6 months. Pairwise comparison of Kaplan-Meier curves showed that patients with ISS stage III versus stage I/II at diagnosis (p=0.017 ,Cox'sFtest) and patients with <5.8 x106/kg of CD34+cells infused (p=0.04) had significantly shorter PFS.Although there was a trend in improved PFS in patients who already achieved a CR before ASCT and in patients who achieved a CR after ASCT, differences were not statistically significant (p=0.15 and p=0.1,respectively).

Conclusions

Abnormalities in simple laboratory variables at the time of diagnosis were related to prolonged hospital stay from the day of ASCT. Patients with ISS stage III versus stage I and II at diagnosis and patients with <5.8 x106/kg of CD34+ cells infused had shorter PFS.

Long term response to immunotherapy in patient with mucosal melanoma of the maxillary sinus - a case report

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Introduction:

Mucosal melanoma is a rare disease that differs from cutaneous melanoma in terms of pathophysiology, genetics, epidemiology and less favourable outcome. The vast majority of cases arise in the mucosae of the head and neck, anorectal and vulvovaginal regions.

Case report:

A 67-year old women presented to the Department of Soft Tissue/Bone Sarcoma and Melanoma, Maria Sklodowska-Curie Institute-Oncology Center in Warsaw in February 2017, with the diagnosis of advanced primary mucosal melanoma of the left maxillary sinus with visible elevation of the left cheek. CT scan showed infiltration of the left nasal canal and ocular muscles. The patient underwent a left maxillectomy with orbital exenteration followed by reconstruction with anterolateral thigh free flap. Clear pathological margins were obtained and two lymph nodes found in the specimen were unaffected. After recovery from surgery the patient underwent adjuvant radiotherapy of 5000 cGy delivered to the tumor bed. In between subsequent fractions, abdominal ultrasound showed a litho-cystic mass in the liver and a small nodule in the right adrenal gland. Due to the patient reporting constant nausea, gastroscopy was performed and a gastric mass with extensive ulceration was found. Pathological examination confirmed the lesion to be a metastasis of the melanoma to the stomach. Subsequent PET/CT scan showed numerous metastases to subcutaneous tissue of the thorax and abdominal wall, left lung, both adrenal glands and retroperitoneal fat tissue. No BRAF mutation was found and MDT enroled the patient to pembrolizumab immunotherapy. Patient received total of 23 doses between August 2017 and December 2018. Due to enlarging metastasis to the left adrenal gland also received radiotherapy of 3000 Gy. Best response to treatment was PR. Patient did not develop any serious adverse effects of the immunotherapy, reporting only mild joint and muscle pain. Control CT scan in December 2018 showed progression of the disease, and ipilimumab therapy was initiated. Patient received all 4 planned doses of ipilimumab, and again achieved stabilization of the disease.

Conclusions

Sinonasal melanomas constitute 70% of mucosal melanomas of the head and neck, with 80% arising in the nasal cavity, and maxillary sinus is most often involved. Unlike cutaneous melanoma, no clear environmental risk factors have been identified for mucosal variant. It is an aggressive disease with substantially poorer prognosis than the cutaneous melanoma (5-year survival around 14%). Due to unsatisfactory response to currently available treatment, there is an ongoing research for targeted therapy. However, the present case demonstrates that immunotherapy may be an effective treatment option in patients with metastatic mucosal melanoma, as PFS of 16 months was achieved by our patient.

Occurrence of BK Virus in bladder cancer

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Introduction

Bladder cancer is the fourth most common cancer in men. That is why people are looking for methods of prevention and early detection. Furthermore, we want to identify modifiable risk factors to minimize the prevalence of bladder cancer.

Urinary infections, kidney and bladder stones, and other causes of chronic bladder irritation have been linked to bladder cancer. One of the main risk factors of bladder cancer are viral infections. BK polyomavirus (BKV) causes frequent urine tract infections and haematuria.

Aim of the study

The purpose of presented study was to analyze the association between bladder cancer and presence of BK virus .

Material and methods:

Urine samples were collected from 59 patients. Qualitative Real-Time PCR was used for detection of viral nucleic acids in urine samples. We analyzed information about patients including medical history, TNM classification, the incidence of recurrence and exposures. The statistical analysis was performed in RStudio version 3.5.1.

Results

We analyze urine samples from 52 patients with bladder cancer and 7 patients with bladder inflammation (Age: 44-88; median 71). The majority of patients had blood cells in the urine. We find BK virus in 12 samples (19,7%; $p<0,05$). 11 of 12 samples was from patients with bladder cancer and only one sample with the virus was from the patient with cystitis.

Conclusions

The obtained results show that BK virus can contribute to bladder cancer. Early detection of active form of BK virus may lead to the improvement of prevention of bladder cancer.

The coagulopathy complications in acute promyelocytic leukemia patients

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Introduction

Acute promyelocytic leukemia (APL) is a rare subtype of acute myeloid leukemia (5-10%), with cancerous hyperplasia of blastic cells in the promyelocytic stage. Presence of translocation t(15;17)(q22;q12-21) and oncogene PML-RARα are molecular bases of this disease. The most characteristic clinical feature in APL is prompt development of disseminated intravascular coagulation (DIC). Hemorrhagic complications are the most frequent causes of early death in APL patients. Intensive antileukemic and supportive therapy is necessary from the first moment of diagnosis for saving patients.

Aim of the study

The aim of the study was an assessment of APL incidence in the Hematology Department, Medical University of Lodz together with early mortality rates and causes as well as duration of the coagulopathy treatment.

Material and methods:

To the study were enrolled all (n=12) patients with newly diagnosed APL in the Hematology Department in Lodz between January 2016 to December 2018. The median age of patients was 48 y.o. (range 29-67). At the diagnosis ECOG performance status 1, 2, 3 and 4 was 92%, 0%, 0% and 8%, respectively. The median of WBC was 1.88G/L, HGB 9.7g% and PLT 15G/L. The coagulopathy was in 92% and thrombosis in 8% of cases. The median concentration of d-dimer was 17.3ug/ml and fibrinogen 237g/l. All patients received induction treatment according to PETHEMA/HOVON protocol.

Results

The incidence of APL among all new diagnosis of AML in the Department of Hematology was 5.2% (12/232). Seventy five percent (n=9) of patients achieved complete remission after induction cycle. Twenty five percent (n=3) died early during induction procedure at median time 4 days (range 3-16). The median time of coagulopathy duration was 7 days (range 2-19) with median number of fresh frozen plasma transfused 4 units (range 0-42) and median platelets 30 units (range 5-70). The symptoms of coagulopathy were: petechiae – 58.3% (n=7), gingival bleeding– 25% (n=3), hematuria – 8.3% (n=1), conjunctival bleeding – 8.3% (n=1), epitaxies – 16.7% (n=2), bruises– 8.3% (n=1). The median time from the first hemorrhagic symptoms of disease to diagnosis of APL was 11.5 days (range 0-60). Related to treatment retinoic acid syndrome was observed in 17% (n=2) of patients and it was a reason of an early death in one patient. One patient died during coagulopathy; bleeding into central nervous system. Pneumonia was a cause of death in another one. The median time of follow up in whole cohort was 10.2 months. The probability of 1 year overall survival was 75%.

Conclusions

Based on our results we might confirm that the incidence of APL in Department of Hematology Medical University of Lodz is almost equal as compare to western countries registries. Also we may suggest that time from first symptoms to diagnosis is prompt. The causes of early death APL patients are mostly related to leukemia and antileukemic treatment.

Infections' epidemiology in patients undergoing hematopoietic stem cell transplantation

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Introduction

Bacterial, fungal and viral infections are one of the most important factors affecting the results of the treatment and survival patients (pts) undergoing hematopoietic stem cell transplantation (HSCT). They are the cause of 8% and 15% deaths after autologous (auto)-HSCT and allogeneic (allo)-HSCT, respectively. The patients' colonization significantly affects the epidemiology of the infections.

Aim of the study

The aim of the study was an evaluation of the colonization and infections epidemiology in pts. undergoing HSCT within 1 year in one Hematology Department.

Material and methods:

The retrospective analysis of pts who were transplanted in the Department of Hematology, Medical University of Lodz, between January 2018 and December 2018. The medical history and laboratory tests were analyzed. 63 pts (32 males and 31 females) were enrolled to the study, with a median age of 56 y.o. (range 21-71). Auto-HSCT received 57 pts and 6 pts allo-HSCT.

Results

Pre-transplant colonization occurred in 62% cases. The colonization was discovered in urinary tract -67%, anus -19% nose -15% and throat -9% of pts.

In the urinary tract colonization were observed Enterococcus spp., Enterobacteriaceae spp., Lactobacillus spp., Staphylococcus spp. and Streptococcus spp. in 33%, 22%, 12% , 9% and 3% respectively. In the anus were noticed Enterobacteriaceae spp., Enterococcus spp., Candida spp. and Aspergillus spp. in 7%, 7%, 3% and 2%, respectively. In the nasal colonization were presence Staphylococcus spp. in 14% and Enterobacteriaceae spp. in 2%. Throat was colonized by Staphylococcus spp. in 5% and Candida spp. in 2%.

Antibacterial, antifungal and antiviral prophylaxis was used in all pts. Infections occurred in 94% pts after auto-HSCT and in 100% after allo-HSCT.

After auto-HSCT fever occurred in 54% and bacteriemia in 46% cases. Bacteremia was caused by Staphylococcus spp., Enterobacteriaceae spp., Enterococcus spp. and Enterobacter spp. in 78%, 4%, 2% and 2%, respectively. The multidrug resistant bacteria were observed in 76% cases.Mucositis appeared in 67% pts including diarrhea. Cutaneous infections were in 46% pts with 17% of catheter infection. Pneumonia was described in17% of transplantation.

Fungal infections occurred in 7% of cases presented as skin or mucosal lesions. Viral infections were not observed.After allo-HSCT infections were manifested in 100% by bacteriemia and diarrhea. Blood infection pathogens were Staphylococcus spp. and Enterobacteriaceae spp. The multidrug resistant bacteria were observed in 100% cases. Invasive fungal infections were observed in 75% of cases. In all cases invasive candidiasis of colon was detected. The viral infections in early post-transplant period were not observed.

Conclusions

After allo-HSCT infections complication are more frequent as compare to auto-HSCT. Primary prophylaxis is sufficient because the majority of the infections doesn't come from previous colonization.

Use of small-molecule PERK inhibitors as a novel therapeutic strategy against pancreatic cancer

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Introduction

The currently available treatment strategies against pancreatic cancer are still insufficient as the estimated 5-year survival rate is less than 5%, hence it constitutes one of the most lethal malignant neoplasms worldwide. Hypoxia, a potent activator of Endoplasmic Reticulum (ER) stress conditions, constitute a major hallmark of cancer cells environment and it is strictly correlated with rapid cancer progression and induction of metastasis. The newest data has reported that hypoxic conditions within cancer cells may directly evoke ER stress conditions leading to activation of the PERK-dependent Unfolded Protein Response (UPR) signaling pathway divided into two distinct branches: pro-adaptive and pro-apoptotic. The latter one is activated only under severe and long-termed ER stress conditions.

Aim of the study

The main aim of the presented study was to evaluate the effectiveness of the selected small-molecule PERK inhibitor against pancreatic cancer.

Material and methods:

Experiments were performed on the human pancreatic cancer cell line (BxPC-3) and Mouse Embryonic Fibroblasts (MEFs) cell line which served as a control. The cytotoxicity of the investigated PERK inhibitor was evaluated using the colorimetric XTT assay. Cells were treated with PERK inhibitor at a concentration range of 0,75μM to 50μM and incubated for 16, 24 and 48h. Untreated cells served as a positive control, whereas cells treated with 50% ethanol as a negative control. To evaluate the level of apoptosis in BxPC-3 cells treated with the PERK inhibitor an assay for caspase 3 activity was used. Cells were treated with the inhibitor at 6 μM and 50 μM concentrations and incubated for 24h. A positive control constituted cells treated with 1μM staurosporine, whereas negative control untreated cells.

Results

As a result, investigated compound showed no cytotoxic effect on MEFs cell line but selectively inhibited BxPC-3 cells viability in a dose- and time-dependent manner. The highest cytotoxic effect of the investigated PERK inhibitor toward BxPC-3 cells was noticed at a concentrations of 25μM and 50μM at all incubation times. Evaluation of the level of apoptosis demonstrated that approximately 40% of BxPC-3 cells treated with 50μM PERK inhibitor were at the early and late stages of apoptosis, whereas we did not note a significant number of death BxPC-3 cells after their 24h treatment with PERK inhibitor at a concentration of 6μM.

Conclusions

Obtained results have suggested that small-molecule PERK inhibitors may provide an innovative, promising treatment strategy against pancreatic cancer via activation of the pro-apoptotic branch of the PERK-dependent UPR signaling pathway.

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Neurological complications in children treated for acute lymphoblastic leukemia

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Introduction

The treatment for acute lymphoblastic leukemia may be burdened with different complications. The most serious are neurological ones and they may result not only in acute and sub-acute conditions but also they may cause a long term consequences.

Aim of the study

The aim of our study was to find patients who had presented neurological symptoms during treatment for ALL. We wanted to describe the symptoms' characteristics and find potential factors which may have an influence on neurotoxicity.

Material and methods:

A retrospective review was conducted in patients treated in Department of Pediatrics, Oncology, Hematology and Diabetology, Medical University of Lodz between 2013 and 2019. Collected data included type of leukemia, Central Nervous System (CNS) disease involvement, appearance of neurological symptoms, their type and outcome. We also gathered data about chemotherapy (type of Protocol, when treatment was started, time of last dose application before symptoms occurred).

Results

The medical data of 88 patients were analyzed. Two patients were excluded from study because of deficiency in clinical history of the disease. Nevertheless we found 86 patients (F - 37, M – 49; B-cell ALL – 73, T-cell ALL - 13) eligible for further analysis. CNS1 was presented in 69 patients, CNS2 – 12, CNS3 – 5. Twenty five (29,07%) patients had at least one neurotoxicity episode, seven (8,1%) had two or more episodes. Meantime from the start of chemotherapy to first neurological symptoms' appearance was 84,72 days but 50% of results ranged from 31 to 137 days. That time was correlated with date of diagnosis ($p=0.028$, $R= -0.469$). Mean time from last dose of MTX to neurological symptoms' appearance was 13,12 days. Mean time from last dose of VCR to neurological symptoms' appearance was 6,29 days. Symptoms' occurrence didn't correlate with date of treatment beginning ($p=0.067$) but correlated significantly with age ($p=0.009$), weight ($p=0.008$) and height ($p=0.016$) . Two groups of symptoms were the most common – seizures (17 pts) and paresis (13 pts), 2 patients had headache and 2 patients had weakness of muscle strength. 61,76% (21/34) of events was observed during induction phase of treatment and the most common were seizures (12 pts).

Conclusions

Neurotoxicity occurs often during treatment of acute lymphoblastic leukemia and the most common time of its appearance is end of induction phase and the period after it. Older children are at higher risk of neurological complications of chemotherapy.

Comparison of conventional (TRUS-guided) and fusion (mpMRI–TRUS – guided) biopsy for the diagnosis of prostate cancer

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Introduction

Multiparametric magnetic resonance imaging (mpMRI) may improve detection of prostate cancer (PCa) in fusion biopsy in comparison to conventional biopsy guided by transrectal ultrasound (TRUS).

Aim of the study

The aim of this study was to compare detection rates of PCa and clinically significant PCa (csPCa) of conventional vs. fusion biopsy among patients undergoing primary and repeat prostate biopsy.

Material and methods:

Consecutive patients who underwent prostate biopsy between January 2017 and February 2019 at our institution were retrospectively enrolled. The mean age was 67.1 years and the median PSA was 7.0 ng/ml. The indication for prostate biopsy was abnormal serum PSA level or suspicious digital rectal examination or both in 44.7%, 5.1%, 50.2% of patients, respectively. Primary and repeat biopsy was performed in 80.1% and 19.9% of men, respectively. The overall PCa detection rates and csPCa (Gleason score ≥3+4) detection rates were calculated for groups of patients with primary or repeat biopsy and fusion or conventional biopsy.

Results

Of 303 identified patients, 292 had sufficient data to be included in the study. Forty-four patients (15.0%) underwent fusion biopsy. PCa detection rate in patients with lesions scored by mpMRI as PI-RADS 2-3, PIRADS 4 and PI-RADS 5 was 33.3%, 69.2% and 88.9%, respectively. Table 1 demonstrates a comparison of detection rates by fusion vs. conventional biopsy. In the primary biopsy analysis, conventional and fusion biopsy showed a similar csPCa detection rate. Fusion biopsy showed higher detection rate of both overall PCa and csPCa in patients undergoing a repeat biopsy.

Conclusions

The use of mp-MRI improves overall PCa and csPCa detection in patients undergoing a repeat biopsy, while its value for detection of csPSA in primary biopsy remains a matter of debate.

Palliative treatment of metastases of invasive ductal breast cancer after breast conserving therapy (BCT).

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Introduction:

Invasive ductal carcinoma is the most common form of metastatic cancer in women which constitutes 65% -80% of all breast cancer cases. Demonstration of estrogen and progesterone receptor expression by tumor cells improves the prognosis.

Case report:

The paper presents a case of the palliative treatment of a 61-year-old female patient with a ductal invasive carcinoma in the left breast diagnosed 6 years earlier. The patient was admitted to a chemotherapy department for the purpose of imaging evaluation (CT) and therapeutic decision. The patient had previously undergone a quadrantectomy with lymphadenectomy, and supplementary chemotherapy (4x adriamycin and cyclophosphamide) and radiotherapy were implemented. Hormone therapy was also applied (tamoxifen, 4 years). In the previous year a PET CT was performed in which metastatic lesions of the proliferative process in the lungs, lymph nodes and skeletal system were found. Second-line hormone therapy (exemestan) and zoledronic acid treatment were included. On admission, the patient reported weakness and significant weight loss. In the CT examination with contrast, metastatic features in the lumbosacral spine, thoracic spine and ribs were found. Furthermore, in the pulmonary window, a few irregular non-measurable nodules in the left lung and a single measurable lump in the right lung were noted. The mass of the features of lymphadenopathy in the left lung hilum was also revealed. The patient was qualified for palliative chemotherapy according Taxol (paclitaxelum) outline. Following the 8th course of chemotherapy, the patient underwent a CT examination with contrast. Resorption of the nodules in the left lung was found, whereas the right lung remained unchanged. In the lower pole of the left hilum, the mass decreased by half. Moreover, new metastases in the thoracic spine were visible. The previously depicted bone metastases did not change. After completing palliative chemotherapy, the patient in good condition was qualified for palliative hormone therapy (fulvestrant) which she received in seven cycles.

Conclusions

The breast-conserving therapy (BCT) is performed only in cases where excising the tumor with a margin of 1-2cm of healthy tissues, without the need of radical mastectomy, is possible. However, BCT increases the risk of relapse, since in about 20-50% of patients undergoing that treatment, the margin of lesions excision turns out to be "positive", i.e. the pathological report shows no microscopic radicality. A non-radical microscopic result is the main risk factor for a local relapse.

Primary CNS lymphoma: challenges in diagnosis and treatment. Monocenter experience.

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Introduction

Primary central nervous system lymphoma (PCNSL) is a new entity, separated on the basis of classification WHO 2016. It is non-Hodgkin lymphoma (NHL) that involves the brain, leptomeninges, eyes, or spinal cord without evidence of systemic disease. It stands for 3% of primary brain tumors. More than 90% of PCNSL exhibit histology of diffuse large B-cell lymphoma (DLBCL). PCNSL is associated with an aggressive clinical course and poor outcome. Current guidelines recommend high dose methotrexate (HD-MTX) based induction regimen or whole brain radiation (WBRT) for patients who are not candidates for systemic chemotherapy.

Aim of the study

The aim of the study was analysis of the incidence, clinical presentation, treatment and outcome of DLBCL-PCNSL patients treated in the Department of Hematology and Bone Marrow Transplantation of Poznan University of Medical Sciences in the years 2005-2018.

Material and methods:

Based on the review of our department database and medical records off 489 DLBCL patients we found 15 (3%) who met the criteria of PCNLS. We performed analysis of demographic data such as sex, age, clinical data: clinical symptoms, localization, NCCN International Prognostic Index (NCCN-IPI), kind of treatment and outcome.

Results

The median patients age was 60 (18-80) years. The ratio of males to females was 9:6. There were 8 patients (53%) that underwent surgical resection of tumor. The median of ICCN-IPI was 5 and 67% of patients had the index higher than 4 (high-intermediate and high risk). The most frequent symptoms were vision impairment and headaches. All patients presented parenchymal involvement, one of them also meningeal. Multifocal lesions were observed in 7 (47%) patients. The most common localization was frontal lobe – 40%, subsequently temporal- 27%, occipital - 13% and parietal- 13%. One patient had intraocular presentation. None of the patients was HIV positive. In the first line treatment was used chemotherapy based on HD-MTX (80%): HD-MTX-Ara-C-8 (53%) patients, MATRIX- 2 (13%) patients. Intrathecal therapy including MTX 15mg and Ara-C 40 mg, Dexaven 4mg was administered to 2 patients (13%). Rituximab was included in treatment of four patients (27%). Radiotherapy was administered to 3 patients (20%), who were not qualified to chemotherapy. Only one patient from the group (6%) is still alive-diagnosed 16 months ago. Four patients (27%) died in the hospital during chemotherapy, their average time from diagnosis to death was 7,5 months. None of the patients lived longer than 5 years.

Conclusions

Due to the rare incidence of PCNSL our study is based on a small group of patients, therefore we cannot draw strong final conclusions. However we would like to emphasize the role of quick histopathological diagnosis without radical surgery. The outcome of treatment presented in this study is not satisfactory and new regimens of treatment are expected.

Vaccination status of hematopoietic cell transplantation recipients during one year after procedure.

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Introduction

Infections remain one of the most serious complications in patients undergoing hematopoietic cell transplantation (HSCT). They are responsible for 7-17% of deaths after HSCT and are the second cause of mortality in such treated patients after recurrent disease. Long-term immune deficiency after HSCT is common phenomenon. Vaccination is undeniably one of the most important prophylactic strategies for reducing the infections that may occur in the post-HSCT period. The European Blood and Marrow Transplantation group (EBMT) as well as Polish Adult Leukaemia Group (PALG) provide recently updated international guidelines for routine revaccinations of HSCT recipients.

Aim of the study

The purpose of our research is to evaluate the realization of recommended vaccinations in patients after HSCT at the Hematology Department, Medical University of Lodz in 2018.

Material and methods:

We have conducted a retrospective, single-center study. We reviewed medical record of 63 patients who underwent the procedure of HSCT at the Hematology Department of Medical University of Lodz between January and December 2018. Remaining data was acquired by telephone survey.

Results

Of the 63 HSCT patients assembled in database, 60 (95%) responded to the survey. 3 patients died since the procedure. The entire database consisted of 32 males (50,79%) and 31 females (49,21%) with the median age at the time of transplant 59 y.o. (range 21-71). Fifty seven patients (90%) received autologous HSCT while six (10%) received allogenic HSCT. Transplant indications were as follows: Multiple Myeloma - 71,42% , Lymphoma 15,87%, Leukemia 7,94%, Aplastic anaemia-1,59%, Myelodysplastic Syndrome 1,59%, Blastic Plasmacytoid Dendritic Cell Neoplasm- 1,59%.

Median observation time of our cohort was 8.8 months. During this time 62% of patients have started vaccination procedure. Vaccines against Pneumococcus spp, Haemophilus Influenzae B, Diphtheria Tetanus Pertussis, Polio virus, Hepatitis B Virus and Influenza received 55%, 35%, 27%, 17%, 25% and 30% patients respectively. Thirty eight percent of patients did not undergo vaccination. The most common reasons for non-initiation the procedure were: financial problems (8%), chemotherapy/radiotherapy/immunosuppression (9%), prolonged infections (5%), patient decision (5%), patient death (5%), loss of follow-up (5%), awaiting vaccination (1%)

Conclusions

According to our knowledge this is the first study assessing vaccination status in HSCT recipients . Our results suggest that the vaccination percent is suboptimal mainly due to the costs of vaccines that have to be covered by the patients and low awareness of risk from life-threatening infections.

OPTHALMOLOGY AND OPTOMETRY

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Rheumatoid arthritis associated uveitis treated with Adalimumab

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Uveitis is an inflammatory eye disorder of various aetiology affecting vascular middle layer of the eye. The condition concerns mainly relatively young patients, if untreated it can lead to significant complications, including blindness. Hence, it is of a critical importance to prevent inflammation and vision loss in eyes with uveitis.
The case of 36-year-old male patient is reported. The patient with history of rheumatoid arthritis was diagnosed at first with anterior uveitis, later on developed macular oedema and epiretinal membranes. However, conventional treatment with steroid agent was not sufficient to control the disease and was associated with side effect in form of elevated intraocular pressure. Eventually, the treatment with Adalimumab was implemented. The therapy facilitated suspension of disease progression and cessation of rheumatologic ailments.

Analysis of the power profile of a new soft contact lens

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Introduction

Vision is the greatest value for any of us. Vision gives us 80% of information about the world. The ability to see, perhaps, the most important of all perceptions of the world. The eye is a living optical instrument. The muscles of the eye pupil for one school day is under the same load, some feel the muscles of his arms and torso, if he was trying to lift and hold overhead barbell weights is designed for the average professional athlete.

The aim of the study

To study the effect of contact lenses on structure and properties of the visual analyzers.

Materials and methods

100 people (200 eyes) are examined with various degree of myopia. Then the soft contact lenses for correction of vision were prescribed for them. The age of patients varied from 18 to 22 years. The control group was made by 50 patients (100 eyes) which didn't wear contact lenses. Monitoring of a condition of the visual analyzer carried out by means of Sitsev's table and the perimeter of Foster device, which allow to estimate visual acuityduring the investigation. Research was conducted within half a year, and check of vision in the first day every month.

Results and discussion

It was found that contact lenses cause the change of eyesight to 30% research of acuity and field of vision. The obtained data shows that the daily using of contact lenses has an influence to the deterioration of visual acuity.Recommendations: The final choice suitable for you contact lenses depends on many factors, but if your doctor thinks you may be suitable any type, it is better first to try soft lenses. After the selection of lenses the doctor will explain exactly how to wear them, care for them and provide a special memo, which you can use at home. However, it is important to seize the moment when it begins to happen, something serious.

Conclusion

Using of contact lenses can cause a series of complications, especially at violation of the rules of wearing and care of them, non-compliance with a regimen of replacement. Special attention should be paid to the choice of optical power of lenses as it can bring to depression of function of visual analyzers. Also it can lead to changing of other parts of organ of vision. It is recommended to apply soft contact lenses gradually enlarging wearing time, thereby allowing an eye to adapt.

Analysis of the levels of serum Toxoplasma IgG antibodies and severity of ocular lesions among pediatric patients with recurring ocular toxoplasmosis.

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Introduction

The infection with an obligate intracellular parasite Toxoplasma gondii through congenital or acquired routes is one of the most common cause of infectious chorioretinitis worldwide.

Aim of the study

The aim of the study was to analyze the levels of serum Toxoplasma IgG antibodies among pediatric patients with ocular toxoplasmosis and to observe the severity of ophthalmological symptoms.

Material and methods

The study was designed as a retrospective analysis of medical records of pediatric patients with ocular toxoplasmosis. The inclusion criteria were documented ocular toxoplasmosis (characteristic lesions in ophthalmoscopy, positive serum Toxoplasma IgG antibodies >8.8 IU/ml) and at least one recurrence. All of the patients were treated with pyrimethamine and sulfadiazine. Data from the records concerning age, sex, age at diagnosis, levels of serum Toxoplasma IgG antibodies at diagnosis and recurrences, ocular lesions, number and time of recurrences were evaluated. The results were subject to statistical analysis (STATISTICA 13.1).

Results

13 cases were identified (9 females, 4 males). Present age of patients ranged from 10 to 21 years old (mean 15.7 ±1.03 years). The age at diagnosis ranged from 0 to 13 years old (mean 6.85 ±4.82 years). The observation time ranged from 1 to 17 years (mean 5.77 ±3.98). During the observation time at least one recurrence was reported in all of the cases (100%), 2 recurrences were reported in 7 cases (53.8%) and 3 recurrences were reported in 1 case (7.7%). Mean time elapsed from the diagnosis to the first recurrence was 4 ±3.67 years (one month to 15 years), to the second recurrence 6.86 ±4.94 (2 to 17 years) and 4 years to the third recurrence (only one case). The level of serum Toxoplasma IgG antibodies at diagnosis was significantly higher than at first recurrence ($p=0.007$). No correlation was found between the age at diagnosis and time from diagnosis to the first recurrence ($r= -0.45$, $p>0.05$). At diagnosis active ocular toxoplasmosis infection in one eye was reported in 75% patients (right eye in all of the cases) and both eyes were affected in 25% patients. Retinal scarring was present in 3 cases (25%).

Conclusions

Despite administered treatment recurrences of chorioretinitis may be expected. The results of our study suggest that the level of serum Toxoplasma IgG antibodies is significantly higher at diagnosis than during first recurrence and that the age at diagnosis do not correlate with the time elapsed to the first recurrence. Further investigations with longer follow-up and larger group of patients are needed to

determine long-term outcomes of treatment. Ocular toxoplasmosis is a progressive and recurring disease with vision-threatening complications and therefore may lead to serious visual impairment. Public awareness regarding this infection is crucial for the prevention of this infection.

Analysis of the functionality of different types of moisture drops bottles in the evaluation of patients with rheumatic diseases

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Introduction

Systemic connective tissue diseases and progressive changes in the bone-joint system, often lead to a reduction in the patient's dexterity. In Sjögren syndrome, the secreting function of lacrimal glands is damaged. Its secondary form may occur with other autoimmune diseases, mainly rheumatoid. Approximately 30% of patients with rheumatoid arthritis also suffer from Sjögren syndrome. The nagging symptom of Sjögren syndrome is dry eyes sensation. Lack of a stable tear film may lead to permanent eye's surface damage. Patient requires a systematic moisturization, but co-existing rheumatic changes in finger or wrist joints can hinder the correct application of moisture drops.

Aim of the study

The purpose of this work was to run tests which will enable the evaluation of functionality and self-application comfort of pharmacy-available' moisture drops in 6 different types of packaging by patients with different exacerbation of rheumatic changes of fingers and hand.

Materials and Methods

The study included 24 patients (21 women and 3 men) ophthalmologically-consulted in the rheumatological ward. Patients completed the OSDI questionnaire to obtain a subjective assessment of the dry eye syndrome. Schirmer and SICCA tests were performed. Next, patients applied 6 different moisture drops in practice, evaluating them with 5-grade scale: ease of opening the package, comfort and grip's confidence, how easy is to squeeze and to instill the drops. Patients also assessed the importance of bottle transparency. The examiner also evaluated the effectiveness of the application.

Results

In terms of ease of the package opening, drops number 5 in a large bottle with a vertical pump and side handle have been assessed to be the best. Drops No. 6 in a small, traditional bottle were considered to be the most comfortable in grip and were the easiest to instill to the eye. The transparency of the package was proved to be important for patients, this criterion had been fulfilled by drops number 3 in a small soft transparent bottle. Drops number 1 in the minims package have been considered the easiest to squeeze.

Conclusions

Effective moisture drops application among patients with the dry eye syndrome is an important part of treatment which reduces the risk of complications and improves the quality of life. Rheumatic changes in the joints and deterioration of the coordination may hinder the proper instilling technique. The differences in structure, size, and hardness of the bottle vary in patients evaluation. There was no correlation of the advancement of rheumatic changes with the preference of any applicator.

Assessment of best corrected visual acuity and central retinal thickness in patients with intravitreal anti-VEGF therapy for exudative age-related macular degeneration. Retrospective study.

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Introduction

Age-related macular degeneration (AMD) is one of the leading causes of visual loss in older adults in industrialised countries. Choroidal neovascularisation is a characteristic feature of exudative AMD, and is characterised by the growth of abnormal blood vessels from the choroid. Intravitreal injections of anti-vascular endothelial growth factors (VEGF) have been considered a milestone in the treatment of AMD.

Aim of study

The aim of this study is to investigate the changes in central retinal thickness (CRT) and best corrected visual acuity (BCVA), with optical coherence tomography (OCT), in the treatment of exudative AMD, after intravitreal injections of anti-VEGF agent in elderly patients.

Material and Methods

Retrospective study of the medical records of 52 patients observed at the Department of Ophthalmology and Ocular Oncology UJCM with exudative AMD treated with intravitreal injections of aflibercept (Eylea) or ranibizumab (Lucentis) between years 2016 and 2018. The first group, called group A (a 2-year treatment scheme) comprised 27 patients (27 eyes, average age was 75 years) who received doses of anti-VEGF agent at monthly intervals. BCVA (using Snellen chart) and CRT (using OCT) were analysed at baseline and during follow-up clinical visits (months 6, 12, and 24). The second group, called group B (1-year treatment scheme), comprised 25 patients (25 eyes, average age was 74 years) who received doses of anti-VEGF agent at monthly intervals. BCVA (using Snellen chart) and CRT (using OCT) were analysed at baseline and during follow-up clinical visits (months 6, and 12). Statistica analysis also included age and gender.

Results

Mean CRT at baseline was 305μm in the group A (a 2-year treatment scheme), and 265μm in the group B (a 1-year treatment scheme), respectively. Mean change in CRT during 12-month follow-up visit was: -52μm in the group A, and -38μm in the group B.

Concerning group A: After 6 months of treatment with injections of anty-VEGF agent, the thinning of CRT was found in 78% of patients, at 12-month follow-up in 74%, and at 24-month follow-up in 85%, which correlated with the improvement of the visual acuity. Mean BCVA at baseline was 0,35 but after 12 months was 0,45, and finally at 24-month follow-up was 0,4.

Concerning group B: After 6 months of treatment with injections of anty-VEGF agent, the thinning of CRT was found in 60% of patients, and at 12-month follow-up in 64%.After 1 year of treatment, no significant changes in BCVA gains were seen. Mean BCVA at baseline was 0,44, and after 12 months was 0,48. Most cases presented stable anatomical and functional outcomes, without features of progression.

Conclusion

The anti-VEGF injections as a therapeutic tool in exudative AMD is an effective strategy in battling this condition. The therapy accounts for slowing down the process of degeneration of the retina which prevents long-term severe visual loss and enables patients to stay independent.

Comparison of daily contact lenses use by medical and non-medical university students

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Introduction

Contact lenses are often the preferred method of vision correction, especially by young people. The safe use of contact lenses requires their individual selection, application of the recommended rules of use and scheduled ophthalmological check-ups.

Aim of the study

The aim of the study was to compare the contactological anamnesis, theoretical knowledge and practical application of the rules of proper contact lenses use between medical students and young people from outside the medical universities.

Material and methods

Original, systematized, anonymous online survey was used. The study included both open-ended and closed-ended questions. The data was analyzed separately for each participant and in two selected comparative groups.

Results

376 completed questionnaires were received. 16 questionnaires were rejected as they did not meet the conditions for inclusion. In the study 206 students of medical universities were involved, 174 (84.47%) of them were women and 32 (15.53%) - men. The comparative group consisted of 154 students of non-medical universities, among them - 128 (83.11%) women and 26 (16.88%) men.

Conclusions

According to the carried-out research, medical university students have more developed knowledge of the principles of proper use of contact lenses, more frequently attend periodic examinations and consult ophthalmologists when ailments related to the use of contact lenses occur. Practical compliance with the rules of contact lenses use requires improvement in both groups.

Effect of topical application of proxymetacaine on the corneal thickness and the intraocular pressure values.

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Introduction

Proxymetacaine drops are commonly used for anaesthesia during various ophthalmic procedures, including contact tonometry, which is essential in diagnosis and treatment of many ophthalmic diseases, e.g. glaucoma.

Aim of the study

To investigate the possible changes in the central corneal thickness (CCT) induced by the application of proxymetacaine and its influence on the intraocular pressure value (IOP).

Material and methods

As yet, 34 volunteers without any diseases possibly affecting CCT, IOP or both have been involved in this prospective study. Air-puff tonometry and pachymetry were performed. Three consecutive measurements were done in this study. The first one taken immediately before the drug administration (Alcaine Eye Drops 0.5% Proxymetacaine Hydrochloride), the second - 2 minutes after, and the third - 15 minutes after the application. The statistical analysis was performed with the Student's paired t-test. The study is still ongoing, at least 25 more individuals are to be tested by the end of April.

Results

The change in the CCT overtime is statistically insignificant ($p>0.05$). Differences between initial and post-anaesthetic corrected IOP were found. The mean change in the corrected IOP values differed among consecutive measurements. Statistically significant reduction of both corrected and raw IOP 2 minutes ($p<0.001$) and 15 minutes ($p<0.001$) after the drug administration were found, in comparison to the initial IOP values.

Conclusions

According to the study, the use of proxymetacaine appears to have influence on the results of the IOP measurements. However, due to the statistically insignificant variations in CCT, different mechanism inducing the change should be considered.

Mucous membrane pemphigoid: advanced ocular manifestation

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Mucous membrane pemphigoid (MMP) is a rare chronic heterogeneous autoimmune disease characterized by subepithelial lesions that predominantly involve mucous membranes. The prevalence of the MMP is estimated to be 0.8-2.0 cases per million with ocular involvement detected in 64-89%.
In 2012-05 55-year-old male was admitted to Centre of Eye Diseases with leading complaints of ocular irritation, photophobia and worsening eyesight. Ophthalmologic examination revealed corneal ulceration and secondary uveitis of the right eye, corneal scarring and neovascularisation of the left eye, trichiasis and symblepharon of both eyes.

A diagnosis of mucous membrane pemphigoid was retained based on clinical findings, serological tests and conjunctival biopsy. A treatment of prednisolone, dexamethasone and levofloxacin were introduced, but despite the systemic treatment recurrent symblepharon and trichiasis formation required surgical approach. Amniotic membrane transplantation, eyelid plastic reconstruction and blepharorrhaphy were performed in 2012-2016.

This clinical case demonstrates progressing mucous membrane pemphigoid with multifaceted ocular manifestation. The purpose of MMP treatment is prevention of vision loss and timely surgical interventions. Since the beginning of the treatment, the patient reports a satisfactory quality of life.

Evaluation of vitamin D3 in vitro influence on orbital fibroblasts and their interaction with mononuclear immune cells in Graves' orbitopathy patients.

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Introduction

Graves' orbitopathy (GO) is the most common complication of Graves' disease manifested by orbital inflammation, remodeling, and even tissue fibrosis. The inflammatory process consists of complex interactions between monocytes and other cells, including orbital fibroblast, regulatory (Treg) and effector T cells (Th17 predominantly). Orbital fibroblasts are one of the main targets of inflammatory cytokines released by immune cells in the course of the disease. One subset of monocyte has a dominant role in GO, namely intermediate CD14++CD16+ monocytes. Monocytes with strong expression of CD16 have concomitantly increased levels of HLA-DR which are associated with secretion of large TNF-α amount. Additionally, monocyte produce IL-23 which has significant influence on IL-17 secretion by Th17 cells.

Aim

Here we investigated the influence of vitamin D3 and/or steroids on proliferation of GO orbital fibroblasts during their interaction with peripheral blood mononuclear cells (PBMC) in the in vitro model.

Materials and methods

Fibroblasts and PBMC from the same donors with GO in active and inactive stages of the disease were co-cultured for 48 hours with addition of vitamin D3 and/or steroids. Flow cytometric analysis allowed for evaluation of proliferation of fibroblast and changes in frequencies of Th17 lymphocytes and monocytes (ex vivo model).

Result

Application of steroids and vitamin D3 decreased the proliferation of orbital fibroblast from active and inactive orbitopathy patients. In co-culture with PBMC, we observed different response of fibroblasts depending whether active or inactive orbitopathy was concerned. Here, combination therapy with vitamin D3 and steroids allowed for more pronounced decrease in IL-17-producing cells. Furthermore, the analysis of monocyte subsets showed differences in the expression of the HLA-DR depending on the stage of the GO.

Conclusion

Application of vitamin D3 was found to significantly reduce the dose of steroid used in modulating fibroblasts activity. Vitamin D3 can be a regulator of adaptive immune response in inflammatory diseases. In addition, this vitamin inhibits monocyte differentiation which reduces their ability to stimulate T cells proliferation. Therefore, application of vitamin D3 could possibly support the current therapy, based predominantly on steroids use and/or even limit the inflammatory process in Graves' orbitopathy. Further research is required to comprehensively establish role of fibroblasts and reactive lymphocytes in GO and possible ways of vitamin D3 application in their modulation.

ORTOPEDICS

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Does the size really matter? Impact of smartphone screen diagonal size on De Quervain's tenosynovitis epidemiology.

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Introduction

With the development of technology and it's capabilities we spend more and more time on smartphones. In addition, their producers are gradually increasing their size.Numerous studies suggest that using mobile phones can be a causative factor of wrist pathologies, including De Quervain's tenosynovitis.

Aim of study

Demonstration of the relationship between the diagonal screen size of smartphones and the incidence and severity of De Quervain's tenosynovitis.

Materials and methods

An online questionnaire survey was conducted. The respondents specified model of a used smartphone and then determined the intensity of pain in both wrists on the thumb side during the Finkelstein test. The inclusion criteria were: 19-25 years of age, right-handedness, being a student. Excluded were people with: previous wrist injury, inflammatory joint diseases, diagnosis of de Quervaine tenosynovitis in the family, pregnancy or lactation, diagnosed lateral epicondylitis, regular golf or tennis participation and paid employment. The following statistical tests were used: Shapiro Wilk, post-hoc ANOVA and Spearman's rank-order correlation, accordingly to the given set of variables. p value less than 0,05 was considered significant.

Results

Among 652 people who responded to the survey, 402 of them (256 females, 146 males) met both inclusion and exclusion criteria. Among people without pain in the Finkelstein test (163 people), the average diagonal was 5.2461 inches <SD 0.5619>. In the group of people with Finkelstein pain (239 people) the mean diagonal was 5,2442 inches <SD 0.5585>. There was no relationship between the diagonal size of smartphones and the occurrence of pain in neither right, left nor both wrists during the Finkelstein test (p=0,9853). Also the severity of pain was not correlated with diagonal screen size (p=0,7370). Then, the influence of variable factors were taken into account. After excluding people regularly playing a musical instrument or playing video games, the results of 296 remaining people were analyzed. Still, there was no statistically significant link between the diagonal of the smartphone and De Quervain's tenosynovitis presence (p= 0.9605). Another analysis was performed within the group of 134 subjects that did not practice any sport, play music or play video game. Once again, the size turned out to be irrelevant (p=0,8413). To fully diminish the impact of covariables, the last analysis pertained only to the people from aforementioned no-extra activity group that additionaly indicated they use 1st finger more often than 2nd finger. Once again, the size did not matter (p=0,8452).

Conclusions

The length of the diagonal screen of smartphones does not affect the frequency and severity of the De Quervain's tenosynovitis.

"Anatomy is a key to the castle named Orthopedic Surgery" - comparison of two ways to find a perfect location for femoral tunnel insertion during MPFL reconstruction.

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Introduction

Medial Patellofemoral Ligament (MPFL) is a structure that originates on the medial femoral condyle and attaches to the proximal medial aspect of the patella. It is the most important medial stabilizer of the patella, especially near full knee extension. When insufficient, the recurrent patellar instability may occur. That disease id characterised by dislocations and feeling of patella instability. For treatment, MPFL reconstruction is a well-known surgical method. During the surgery the location of femoral attachment of reconstructed MPFL must be determined. There are two different ways to establish that position- with lateral radiograph according to Schoettle landmarks or with visual-palpatory anatomical landmarks. However restoring anatomical emplacement is crucial to satisfactory outcomes, that's the most common cause of failure surgery, according to the literature.

Aim of study

The purpose of this study was to analyse and assess postoperative position of femoral tunnel after MPFL reconstruction.

Materials and Methods

Our study group consisted of 30 patients qualified for MPFL reconstruction since February 2015 to March 2018, operated by 2 orthopedic surgeons. First one used RTG fluoroscopy to create tunnel and second used palpatory landmarks. We assessed 30 postoperative RTG images. Mean age of patients during operation was 25,46 (±8,1). Mean follow up was 33,4 (± 8,4) months. We also assessed the postoperative frequency of patellar instability symptoms of and analyzed the data to investigate whether there was an association with anatomical or non- anatomical position of femoral tunnel.

Results

Non-anatomical canal was observed in 26% cases (8/30). Patients with non- anatomical canal were less satisfied and suffered from symptoms more frequently.

Conclusion

Anatomical position of femoral tunnel is a key to success of MPFL reconstruction.

Clubfoot treatment by the Ponseti method – retrospective study with 3-years follow-up

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Introduction

Clubfoot is one of the most common musculoskeletal birth deformity. It's estimated that per 1000 live births, 1-2 babies are born with this defect, therefore about 150000-200000 children with clubfoot are born annually in the world. This defect is characterized by a complex foot deformation, which consists of excessive hollowing of the longitudinal arch of the foot, its adduction, calcaneal varus and equine calcaneus setting which prevents proper walking. Nowadays method of choice of treating this defect is Ponseti method. This is a staged treatment relying on reposition of deformity, plaster cast application after each manipulation then performing a minimally invasive procedure - percutaneous Achilles tenotomy and long-term systematic bracing.

Aim

The aim of our work is to present results of treatment of patients with clubfoot using the Ponseti method in the Univeristy Children's Hospital in Lublin and compare them with the result described in the world literature.

Materials and methods

We reviewed the documentation of patients of the Univeristy Children's Hospital in Lublin in 2016-2018, who were treated with the Ponseti metod. We presented the characteristics of patients, course of treatment, possible complications and recurrences.

Results

In Department of Pediatric Orthopedics in University Children's Hospital in 2016-2018 27 patients were treated cause of clubfoot. Age of children at the beginning of treatment ranged from 5 days to 3 weeks.

In the study group 59% were male (16) , 41 % were female (11). Duration of plaster cast treatment ranged from 6 to 12 weeks. Achilles tenotomy was after first stage of treatment. After the end of plaster cast treatment, patients started wearing bracer. Qualification and treatment progress were assessed using Pirani score.

After 6 months of treatment in 22 (81,5%) patients correct alignment of the foot and dorsal flexion up to 20 degrees were achieved, in 3 (11%) patients the foot was aligned but the dorsal flexion of the foot was about 10 degrees and in 2 (7,5%) patients there was a recurrence of the deformity.

Conclusions:

Ponseti method is the best available method for the treatment of clubfoot. This method is well tolerated by pediatric patients and also by their parents. It's minimally invasive and above all very effective – its success is estimated at 90% in most cases. The results of treatment in our clinic are similar to those described in the world literature. Ponseti's method is the treatment of choice of clubfoot.

Clinical impact of direct vertebral rotation maneuver in surgical treatment of idiopathic scoliosis patients.

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Introduction

Scoliosis is a three-dimensional deformity which includes coronal, sagittal and horizontal deformity. The aim of surgical treatment is to address all components of the deformity.

Routinely surgeons focus on coronal and sagittal alignment correction with minor attention to horizontal deformity - vertebral rotation.

Vertebral rotation significantly affects biomechanical function of the whole spine contributing to early degenerative changes resulting in pain. Moreover, residual vertebral rotation after surgery is associated with rib hump appearance therefore the magnitude of the rotation corresponds to patient's self-image. One of the most popular technics of surgical correction of horizontal spinal deformity is direct vertebral rotation (DVR).

Aim of study

To compare clinical outcome between two groups of patients undergoing scoliosis surgical treatment: 1. patients with DVR maneuver and 2. patients with no DVR.

Material and methods

24 patients who underwent surgical treatment of AIS between 2014-2017 in Department of Orthopedics and Traumatology in Wrocław University Hospital were included into the study. 15 patients who underwent operations with DVR and 9 patients without DVR with standard technics of coronal and sagittal deformity correction. Clinical outcome was measured with SRS 22 questionnaire (containing assessment of function, pain, presentation, self-image, mental health and overall satisfaction) completed at least two years after the operation. Data were presented as the mean ± standard deviation. A two-tailed paired t test was performed to assess variables between the groups, with $p < 0.05$ considered statistically significant.

Results

Total score of clinical evaluation with SRS 22 questionnaire showed better results in DVR group: 4.125 comparing to no derotation group: 3.716. However, the result was not statistically significant P=0,16. Among all analyzed parameters only assessment of function turned out to be significantly better in DVR group (4.37 vs 3.74) with p value 0.017.

Conclusion

DVR does provide slightly better clinical outcome however the differences are minor and with exception of functional results statistically insignificant.

The possibility and severity of injuries in bike-related accidents depending on cyclists' approach to safety behaviours

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Background

Nowadays, when the interest in healthy lifestyle is growing and the number of proecological movements is rising, cycling as a mean of transport or way of exercising has become extremely popular. The fact that this sport is now being so common raises questions about its safety and consequences as well as about the ways of cyclists' protection against traumas.

Aim of the study/purpose

The purpose of this study is to characterise safety behaviours of polish cyclists and their impact on the frequency and severity of bike-related accidents. In particular, to determine if preparation for riding and applying to rules of safety behaviours (such as wearing helmets, using reflective items and having a driving license) have influence on a higher risk of a bike-related accidents.

Material and methods

This survey was based on the questionnaire, including 434 cyclists in the average age 33.7 +/- 10.5 who were involved in bike-related accidents. The questionnaire was anonymous and the information were gathered through online service enabling creating surveys. Eventually, 1381 accidents and 2632 injuries were taken into consideration and analysed. The research referred to the topic of wearing helmets and reflective elements by cyclists, drinking alcohol before cycling and former driving experience of the respondents.

Results

The study was conducted amongst 434 people who had 1381 accidents and got injured 2632 times while cycling. The majority of interviewees, who had a bike-related accident but were not hurt, had at least two reflective elements with themselves. However, Cyclists who did not have any or had only one reflective element in their equipment either on the bike or as a part of their outfit were more prone to suffer from abrasions limb or face and scalp ($p<0,0001$). In addition cyclists who had higher number of accidents claimed that their attention was not distracted by listening to music while riding bike. According to the study wearing a helmet did not make an impact on the severity of the traumas. We noted that people who cycle every day or almost every day are more likely to have an accident.

Conclusions

Most of polish cyclists don't comply with the rules of safe riding. The factor highly putting in the risk of bike -related injuries in our study is number of reflective elements possessed. Moreover, the number of accidents correlate with how often interviewees ride a bike despite their equipment. The most common types of injuries and the easiest to happen while cycling are abrasions.

Evaluation of the effectiveness and safety of genu valgum treatment in children by asymmetric epiphysiodesis using eight-plate implants

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Introduction

Deformity of the lower limb axis is a common orthopedic problem in both pediatric and adult patients. Several-degree changes in the mechanical axis in children usually require observation or the use of simple therapeutic methods such as specially profiled insoles. In case of large disturbances of the LL axis, confirmed in radiographs, we have several options for surgical treatment. These include temporal asymmetric epiphysiodesis in patients with growth cartilage that still has growth potential or various types of corrective osteotomies used in children who achieved their final height. Epiphysiodesis is a temporary or pemanent blockage of growth cartilage.

Aim of the study/purpose

The aim of this study is to evaluate the effectiveness and safety of genu valgum treatment in pediatric patients by asymmetric blockage of growth cartilage using 8-plate implants in the Clinic's materials.

Material and methods

27 patients (16 boys, 11 girls) underwent surgical treatment of genu valgum with eight-plate implants between 2014 and 2018 in our Clinic. The median age at implantation was 13.5 (from 12 to 15). These were patients with idiopathic genu valgus, and children with inflammatory and traumatic causes of deformity were excluded from the study group. Patients were qualified after orthopedic examination and assessment of radiographs covering both LL.

Results

83% of good and very good results were obtained in the study group. The mechanical axis close to physiological was obtained after an average treatment time of about 2 years and 2 months. Complications of treatment were observed in 4 children (in two patients delayed healing of postoperative wounds, in one patient varus deformity of the knees - overcorrection, in one the loss of stability of the implant)

Conclusions

Temporary asymmetric epiphysiodesis using eight-plate implants is a minimally invasive, safe and well-tolerated by pediatric patient treatment method of the genu valgum, which gives very good results in treating this deformity of the lower limb axis.

Multistage orthopaedic correction of a multiaxial deformation of the lower extremity caused by extensive osteomyelitis as a consequence of sepsis.

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Introduction

Osteomyelitis is a relatively rare complication of sepsis, most likely to occur in pediatric population. The treatment regimen consists of targeted antibiotic therapy combined with surgical debridement. One of the probable consequences of osteomyelitis is bone deformation, in treatment of which an inestimable role is played by reconstructive orthopaedic surgery. Taking under consideration the fact that it is long bones that are most commonly affected, this particular area of medicine can significantly contribute to improving patiens quality of life.

Case report

The presented case report describes a 10 year old male patient with a major deformation of the lower extremity. At the age of 2, he was diagnosed with hematogenous osteomyelitis of the 1st metatarsal bone - as a complication of sepsis. He underwent surgical debridement, involving drainage of the abscessus and partial removal of the devitalized bone. Impaired structure resulted in medial foot drop, which led to distal and subsequent proximal tibial epiphysis deformations and both ankle and knee articular malfunctions. Over the years numerous surgical procedures were performed in order to bring back the proper function of the formentioned joints. Miniortofix and Taylor Spatial Frame sytems were used to support bone growth, restore the proper axis of lower extremity and remodel lateral malleolus. Process of recovery is still ongoing and is significantly complicated by the condition of the skin which still suffers the consequences of sepsis. Despite all of the mentioned adversities the hitherto effects are promising.

Conclusions

Although not commonly seen osteomyelitis is a crucial complication of sepsis as it may leed to long-term extensive skeletal deformations and articular malfunctions. The desease substantially impairs the quality of patient's life and thus the role of reconstructive surgery as the only effective treatment method cannot be overstated.

OTOLARYNGOLOGY

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Endoscopic removal of ethmoid osteomas under navigation guidance

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Objective

To investigate the minimally-invasive ablation of osteomas of the ethmoid sinuses endonasally.

Methods

A retrospective analysis was done in 19 patients (15 male, 4 female, aged between 14 - 67, medium 37) diagnosed as osteomas of ethmoid sinuses hospitalized from April 2013 to October 2018. All patients underwent sixteen-detector row computed tomography scan and 3D reconstruction preoperatively. All underwent operation with the help of navigation system and nasal endoscope.

Results

The ethmoid osteoma in all 19 patients was removed successfully with endoscope and navigation system. Two open procedures(1 through superciliary arch incision and 1 through labiogingival incision) were performed to assist the removal of the tumor, 17 tumors were removed under endoscopic and navigation guidance. In 5 patients whose osteoma was localized or with the diameter no more than 2 cm, these osteomas were removed endonasally with the help of navigation system. The osteomas in 2 patients was found to have narrow basilar part and relatively dissociative were removed from oral cavity after abscisin the basilar part. The osteomas in 12 patients were found to have basilar part connected with ante-meso skull base, lamina papyracea, orbital apex, cranialis opticus, fossa orbitalis bone, these osteomas were removed using electric drill with the guidance of navigation system. All patients were followed up from 8 to 64 months, and were asymptomatic (1 patient who suffered from amblyopia had the symptom disappeared, 2 patients suffered from prosopo-eminence, 1 patient was asymptomatic and 1 patient was feeling better). Two patients underwent removal of crista galli, 1 of them suffered from postoperative cerebro-spinal rhinorrhea, and recovered after endoscopic repairing procedure and iodoform gauze packing and recovered 15 days later. Two patients who underwent removal of crista galli suffered from anosmia and never recovered after 9 and 26 months follow-up. One patient with enormous osteoma suffered from repeated crusting and abnormal odor, and recovered after nasal flushing.

Conclusions

Endoscopic ablation of osteomas of the ethmoid sinuses with the guidance of navigation system is an accurate, secure, minimally-invasive procedure. Osteomas on median line and localized in ethmoid sinus is an indication of this operation. Preoperative CT scan is a safeguard for an accurate operation.

Difficulty in treatment of sinonasal inverted papilloma - case report

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Introduction

An Inverted papilloma (IP) is a type of tumor in which superficial epithelial cells grow dippinginto the basal supportive tissue. It mainly occurs in adults in the 5th decade. The tumor has a relatively strong potential for local destruction, high rate of recurrence, and a risk of carcinomatous evolution. Following study shows clinical difficulties in treatment of IP.

Case report

A 67-year-old male was admitted to local otolaryngology department due to the recurrence of IP of the paranasal sinuses on the left. The patient has undergone two endoscopic operations (last in 2015). Moreover, patient complained of proptosis of the left eye, blindness in right eye as the result of cataract.

In March 2018 CT and MRI were performed. Results revealed thickening of the mucosa in the maxillary sinus (MS) and tumor that filled the entire ethmoid and frontal sinus, penetrating to the left orbital cavity (OC). Images showed also infiltration of the meninges in the anterior cranial fossa (ACF). The patient required interdisciplinary approach. After consultations with neurosurgeons in May 2018 the patient was operated by an combined neurosurgery/ENT team. The left frontal craniotomy and rhinotomy were performed aiming at total resection with maximal possible margins.

The subsequent CT scan in September showed a gap in the superior and medial wall of left OC, destruction of posterior wall of frontal sinus, soft-tissue pedunculated mass adhering to superior frontal gyrus (length 15mm). After neurosurgery consultation, patient was admitted for endoscopic resection. Two weeks later open left rhinotomy was performed following to HP results. Patient in good general condition was discharged from hospital.

Follow up endoscopic examinations in October and November did not reveal any abnormalities. In December a proliferation of the mucosa was noticed and samples were collected for HP tests which confirmed IP. Patient had CT scan and now is being prepared for the surgical resection.

Conclusion

IP is very serious condition that demands interdisciplinary approach. Despite of resections with maximal margins, the recurrence is highly possible. Not only is the patient struggling with IP, but fighting for his eyesight too.

The accuracy of narrow-band imaging (NBI) in the preoperative evaluation of laryngeal granulomas and in predicting its final histology

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Introduction

Laryngeal granulomas (LG) belong to late, minor, postoperative complications following Trans-oral laser microsurgery(TLM). Usually, these lesions occur within 1 or 2 months after surgery.

Purpose

The main aim of this study was to assess the accuracy of preoperative evaluation of vocal fold granuloma by means of NBI in comparison to final histology and follow-up outcomes.

Materials and methods

The study was carried out between April 2015 and November 2017 at Poznan and Lodz University of Medical Sciences, Department of Otolaryngology, Poland. We enrolled 154 consecutive patients after trans-oral laser microsurgery (TLM) due to laryngeal cancer in early stage. After surgery, all patients were examined ever one month by using trans-nasal flexible video-endoscope (Olympus Medical System Corporation, Tokyo, Japan) with the optical filter for NBI and video-stroboscopic laryngeal. In these patients, 47/154 (30,52%) laryngeal granulomas were found.

Results

The patients with laryngeal granulomas were divied into two groups according to the NBI classification. Group A (13/47): perpendicular vascular changes in the area surrounding granuloma tissue; Group B (34/47): longitudinal vascular changes. In all patients the microvascular pattern in NBI was compared with the final histology. There was the significant correlation between the NBI pattern of the mucosa in area of the granuloma tissue and the final histological result:Chi2(1)=34.81; p=0.00001. In group A, with suspicious, perpendicular vessels, the final histology results were: 13/13 (100%) samples were positive, 10/13(76,7%) severe dysplasia, 1/13(7,7%) cancer in situ, 2/13(15,4%) moderate dysplasia. In group B, with not suspicious longitudinal vessels, the final histology results were: 3/34 (8.82%) samples were positive: 3/3: moderate dysplasia, 30/34 samples were negative, all samples were granulation tissue. Sensistivity, specifity, accuracy in NBI were as follows: 81.25%, 100%, 93.62%.

Conclusion

NBI video-endoscopy is a promising non-invasive technique in differentiating local recurrence of laryngeal cancer. Our study highlights the clinical value of NBI. Based on our results, the NBI can be useful tool in determination of the border between contact granuloma and local recurrence following TLM, through recognition of intraepithelial papillary capillary loops in blue light.

Progressive supraglottic scarring as a sign of IgG4-related disease

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Introduction

IgG4-related disease (IgG4-RD) is a chronic inflammatory condition of unknown etiology characterized by lymphoplasmacytic infiltration, storiform fibrosis and obliterative phlebitis, which leads to organ failure. IgG4-RD may affect any tissue, but mostly affects the salivary glands, kidneys, pancreas and lacrimal glands. Clinical presentation is varied and depends on the organ involved.

Case Description

In December 2018, a 75-year-old female patient who suffered from episodes of acute dysnpnea was admitted to Department of Otolaryngology at the Medical University of Lodz. Similar episodes have been occuring 2-3 times a month within 3 years. It was treated for over a year with azathioprine and systemic steroids due to suspicion of Granulomatosis with polyangiitis. During the hospitalization diagnostics was extended for pemphigus and granulomatosis with polyangiitis. Tissue biopsy from supraglottal area, which was swollen and scarred was taken. IgG4-RD was recognized on the basis of histopatology and IHC reaction. Immunosuppressive therapy and steroid pulse was included. The patient remain in observation.

Discussion

It is estimated that IgG4-RD occurs with frequency 0,28–1,08/100 000. Despite the fact that there is an extensive literature concerning the disease, there are a few case studies of isolated manifestation in larynx. The diseases was described as organ specific, nowadays is classified as IgG4-related. Changes are usually multiorgan (about 58%). In this case isolate damage of larynx is the only manifestation and is a challenge for the surgical and endoscopic treatment. The lack of systemic symptoms, obliterative vasculitis and eosinophilia cause the therapeutic difficulties in the ENT clinics and extend the time for make diagnosis.

Esthesioneuroblastoma - case of a rare olfactory tumor

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Introduction

Esthesioneuroblastoma is a rare nonepithelial neoplasm from the olfactory plate. Its incidence rate is about 1:1000000/year with two peaks occurring in the second and six decade of life and a similar incidence in women and men. It is estimated that esthesioneuroblastoma accounts for 2-5% of all cancers in the nasal cavity. The tumor in the endoscopic examination resembles a fragile, easily bleeding polyp located in the roof of the nasal cavity. It often gives distant metastases and easily recurs. If the tumor spreads in the direction of the brain, it may show symptoms of increased intracranial pressure or visual impairment. Additionally, it can cause difficult breathing through the nose, bleeding, disorder of smell and headaches. Due to the late, non-characteristic symptoms esthesioneuroblastoma is a cancer that is difficult to diagnose and often detected in late stages.

Case Description

The 53-year old female with nasal bleeding and impaired nasal patency which lasted for three months was admitted to the Department of Otolaryngology and Oncologic Laryngology, Medical University of Lodz. In the endoscopic examination there was a polypoid outgrowth which occupied the entire nasal cavity. The patient was treated surgically by tumor removal and bone milling in the operated sinus. Radiotherapy was used as the treatment of choice. Patient were classified with Kadish clinical staging system.

Discussion

In the literature there are mentioned cases of short survival rate of patients with esthesioneuroblastoma and with lymph nodes of various head and neck regions involved. The authors also suggest that distant metastases are a poor prognostic factor. According to original papers and meta-analysis the most effective method of neuroblastoma treatment is the endoscopic surgery . The role of radiotherapy as an adjuvant treatment is also discussed. Our observations suggest that rapid intervention correlates with patients' survival.

Head and neck amyloidosis – report of five cases

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Introduction

Amyloidosis is a group of diseases caused by the extracellular accumulation of insoluble fibers called amyloid in the tissues and organs. They have a secondary beta-sheet structure, which makes them resistant to proteolysis. In histological examination amyloid deposits stain with Congo red and show an apple-green birefringence in polarized light. Amyloid deposits disturb the function of organs and cause clinical symptoms. Their formation or accumulation in the system may be acquired or inherited. Due to the location of amyloid deposits we distinguish systemic and localized amyloidosis with the formation of tumors (usually from light chains).

Case reports

5 cases of amyloidosis in the head and neck region are presented in this paper. The location of the amyloid deposits were as follows: larynx, nasopharynx, parotid and sublingual gland and tongue. The initial clinical presentation correlated with localisation of amyloid tumour in our patients. Two of the cases were recurrence of the previous disease. Surgcal management and histopatological examination were performed. Sections stained with Congo red confirming the diagnosis of amyloidosis. In three patients ocuured conditions predisposing to amyloidosis: previous radiotherapy, chronic inflammation due to hepatitis C virus infection and graft versus host disease.

Conclusion

Despite its rarity, amyloidosis should be considered as the cause of symptoms from aerodigestive tract. The diagnosis requires a histopathological examination. The systemic form of the disease must be ruled out in all patients with head and neck amyloidosis. In the case of the localized form, the surgical resection of lesions is the procedure of choice, at which the maintanance of the organ's functionality should be taken into account.

Atypical manifestation of Fahr's disease-a case report

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Introduction

Fahr's disease is a rare (prevalence of <1/1,000,000) sporadic or inherited neurodegenerative disease characterized by symmetrical bilateral calcifications in the basal ganglia and the cerebral cortex. Clinical manifestations of this syndrome incorporate a wide variety of symptoms, ranging from neuropsychiatric, extrapyramidal and cerebellar symptoms, convulsive seizures, Parkinsonian features, dementia and speech deterioration. Average age of diagnosis is 40-60 years with no gender predilection. CT scan of the head is considered a "golden standard" in diagnosis.The etiology, progression and treatment of the disease still remain unknown.

Case report

A 30-year-old patient was admitted to the Department of Otolaryngology and Oncological Laryngology of the Medical University of Lodz due to bilateral complete deafness in June 2018.The patient presented with a history of hearing loss since she was 9 years old with hearing aids in both ears. She had suffered from right-sided sudden deafness in 2016 and in 2018 completely lost sound perception in the left ear. These symptoms were accompanied by persistent bilateral tinnitus.

Based on a head MRI from March 2016, the patient was suspected of Fahr's disease (presence of hyperintense signal in the basal ganglia and cerebellar nuclei), which was later confirmed in CT during current hospitalization. Patient reported no discharge from ears or vestibular symptoms. She was qualified for left-ear cochlear implantation (CI) with CI 512 electrode. She underwent surgery on the 19th of June 2018. CI was activated on the 23th of July 2018. On follow-up major hearing improvement in the implanted ear with good understanding of speech was achieved.

Conclusion

This case report is interesting for clinical practice for several reasons: complete deafness as a main and unique symptom of Fahr's disease, patient's young age and none of the neurological and psychiatric disorders usually presented in Fahr's despite of extensive calcifications in the basal ganglia and cerebellar nuclei.

Furthermore, since satisfactory hearing perception results were achieved we suggest that cochlear implant should be considered as the best option for hearing restoration in such patients.

PEDIATRICS

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Primary adrenal insufficiency in childhood- case study

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Introduction

Primary adrenal insufficiency, also known as Addison's disease (AD), has been common among adults within the age group of 30-50 years old. On the contrary, for children, it is rare to be diagnosed with AD. Our aim is to show difficulties in diagnosing children with AD. The initial symptoms of AD can be fatigue, muscle weakness, loss of appetite with unintentional weight loss, abdominal or back pain and hyperpigmentation. All of these are signs of upcoming adrenal crisis, if untreated can lead to fast-progressing death.The typical blood findings are low levels of sodium and cortisone and high levels of potassium and ACTH.

Case report

In July 2016, a 9-year-old girl was admitted to the hospital presenting weakness, weight loss and hyperpigmentation. Physical examination showed low BMI (14,96) and primary teeth enamel hypoplasia. Sodium level was below age-appropriate normal range, potassium and chlorine were normal, also mild hypocalcemia was noticed. The patient was tested with synthetic ACTH (Synacthen Depot). This test showed not only very low level of cortisone before, but also 30 and 60 minutes after stimulation (1,06 ug/dl, 1,21 ug/dl, 1,54 ug/dl accordingly), leading to assumption of very low cortisol adrenal reserve. The autoimmune etiology was confirmed by presence of anti-adrenal antibodies. Symptoms were treated successfully with hydrocortisone, leading to physical improvement and normalisation of laboratory tests, such as glycemia and electrolytes levels. Looking at her significant family history with the closest family members being diagnosed with rheumatoid arthritis, glomerulonephritis, Hashimoto's thyroiditis and vitiligo, she was tested for autoimmune diseases such as celiac disease, thyroid autoimmune diseases and myasthenia gravis. Due to frequent candidiasis of the oral cavity, enamel hypoplasia of primary teeth and Addison's disease, APS1 was being suspected. Nevertheless after genetic test APS1 was excluded.

Conclusions

In terms of diagnosing children with untypical symptoms and autoimmune family background all physicians need to remember about broadscale diagnostics. This case report informs that usual blood findings can not always indicate the most probable diagnosis. About 25% of patients with autoimmune disease have a tendency to develop additional autoimmune diseases. If the patient is diagnosed with one autoimmune disease, we should be aware that the another one could be possible. Moreover, if the patient has a history of autoimmune diseases and develops new symptoms, it is crucial to remember that it can be related to autoimmune etiology.

Attitudes towards vaccination among parents in Poland: preliminary results

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Introduction

Despite the fact that in Poland vaccination is an obligation, the final decision is taken by the parent or legal guardian of the child. Regarding the fact that the percentage of unvaccinated children in Polish population is raising, we thought it particularly important to understand parents' attitude and opinions on vaccination. The better we know their motivation, the more effectively we will educate parents, gain their trust that will lead to improve vaccination coverage.

Aim of the study

The aim of the study is to assess parents' attitudes towards vaccination.

Material and methods

The survey was carried out using an anonymous questionnaire in two large Warsaw hospitals. The form containing 21 closed questions was divided into two parts - the first concerning demographic data and general views on vaccination - and the second, specifically concerning the respondents' children's vaccinations.

Respondents were asked, among other things, to assess the risk of developing certain infectious diseases and their attitudes towards vaccination. They were asked if they perceive vaccinations as an obligation or privilege, and assess trust towards their child's physicians. They were also asked to rate their knowledge on vaccination and provide the source of knowledge they rely on.

Results

242 parents participated in the survey, 74.8% of them women. 80% of all respondents perceive vaccination as a privilege, while 20% perceive it as an obligation. Almost all respondents (97.5%) would agree to give the child an additional vaccine, if their child's health would depend on it, while 19.4% of respondents were ever advised by the doctor not to vaccinate the child. 82.2% of respondents have great confidence in their child's phisycian regarding the vaccinations proposed for him. 76.3% of parents evaluate their knowledge about vaccination as at least good, and the most frequently indicated source of knowledge about it is a doctor (83.9%).

Conclusions

Our research allowed us to pre-determine the attitude of Poles towards vaccination. Every fifth Pole feels forced to vaccinate. Most of respondents have deep confidence in their child' physician, which is also the main source of knowledge obout vaccinations.

Is the level of knowledge about vaccinations among medical professionals really sufficient?

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Introduction

Vaccines are used to avoid infectious diseases which pose risk of severe manifestation, life-threating complications or even death. Due to the increasing range of anti-vaccine movements high level of knowledge about vaccinations among medical professionals and providing reliable information to parents are really important.

Aim of study

Finding out what is the level of knowledge about vaccinations of polish physicians and nurses. Investigating if medical staff can be a source of false information about vaccinations.

Materials and methods

Survey was carried out on a group of 781 respondents - physicians and nurses. The research tool was a questionnaire in paper. Participation was voluntary and anonymous.

Results: Almost 91% of respondents were in favor of vaccinations, but 45% weren't vaccinated against influenza. Among the respondents, 39% want to immunize themselves/ children against all possible diseases, while still 55% want to immunize themselves/ children only against life-threatening diseases. 92% of doctors correctly identified smallpox as an eradicated disease while only 58% of nurses answered the same question correctly. 91% of respondents believe that the statement "vaccine causes autism" is false, but still 9% think that vaccines cause neurological disorders. Among medical personnel that is not taking active part in protective vaccinations, over 54% are not vaccinated against influenza at all, while among the medical staff involved in the implementation of vaccinations, the percentage of non-vaccined is below 23%. Suprisingly internet is the second source of information ceoncering vaccinations among nurses. Results are under development.

Conclusions

A survey has shown that the level of knowledge about vaccines among nurses is significantly lower than among doctors. Medical professionals employed in the implementation of vaccinations seem to be more aware of importance of vaccinations and influenze themselves against influenza more often than those who are not taking active part in protective vaccinations. It is needed to improve the level of knowlegde about vaccinations among medical professionals in order to protect parents exposed to misinformation about vaccines on social media.

Young girl diagnosed with type 2 diabetes as the effect of childhood obesity.

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Introduction

Initially, type 2 diabetes was thought to be an adult-onset disease. Unfortunately, due to the constant rise in the number of overweight children, nowadays pediatricians should expect obesity-related diseases that are typical for older people to occur more often in children. Additionally, psychologic issues can arise, such as low self-esteem, depression, seclusion from society. Moreover, health problems such as type 2 diabetes, hypertension, hypercholesterolemia and many more, all of those illnesses are waiting for children with obesity who will enter adulthood in a difficult way.

Case report

A girl at the age of 15 years and 7 months with severe obesity (BMI of 45kg/) was admitted to the Department of Paediatric Diabetology due to impaired fasting glucose and obesity. Medical history revealed that the patient suffered from hypothyroidism that was treated with levothyroxine. She was also diagnosed with insulin resistance. However, she was not following the doctor's recommendation concerning metformin treatment. From perinatal history, we know that her mother suffered from gestational diabetes. The patient denied polyuria, polydipsia and any specific lower urinary tract symptoms, the only problem she reported was tiredness. The result of the oral glucose tolerance test confirmed type 2 diabetes (after 120 minutes the glucose level reached 221 mg/dl). The patient presented classic complications of obesity like acanthosis nigricans, striae, sleep apnoea, moreover, ultrasonographic examination revealed hepatic steatosis. The girl had also shown symptoms of depression such as suicidal thoughts, isolation from others, the physical examination revealed prior self-mutilation. The patient's diet was based on a large number of sweets that are high in sugar and low in nutrients. Additionally, the patient did not participate in any sports or physical activities. However, she did not show any signs of cardiovascular diseases. The patient was discharged with a treatment plan including metformin and fluoxetine, she also received a referral to dietician and psychiatrist.

Conclusions

1. Children with overweight and obesity should be screened for insulin resistance and type 2 diabetes.
2. Obese children should be provided with holistic care, involving pediatrician, dietician and psychiatrist or psychologist.
3. All the complications of obesity should be included in the diagnostic process.
4. More effective preventive measures should be introduced to prevent childhood obesity and all the complications associated with it.

Are the patients with juvenile idiopathic arthritis shorter and heavier than healthy children? Analysis of impact of the long-term treatment.

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Introduction

Juvenile idiopathic arthritis (JIA) is the most common arthropathy in childhood. First-line treatment regularly includes methotrexate (MTX) and intraarticular glucocorticoids (GCS). Patients with high disease activity at onset frequently require systemic GCS to achieve clinical improvement. However, such therapy may lead to potential side effects, including growth impairment and gaining body weight.

Aim of the study

The main objective of the study was to assess the potential influence of long-term therapy in JIA patients on their height and body mass.

Materials and methods

Study involved 51 children freshly diagnosed with JIA at Department of Pediatric Cardiology and Rheumatology, Medical University of Lodz, between January 2016 and December 2017 (mean age at disease onset: 7.31 years, 95%CI: 6.03-8.60). The growth rate was assessed by calculating differences between parameters obtained at diagnosis and after a year of treatment (average period between measurements: 341 days, 95%CI: 298-384). Results from the study group were compared with 23 age- and sex-matched individuals without autoinflammatory disorders.

Results

Growth rate was significantly lower in JIA patients than in control group (3.93cm, 95%CI: 2.76-5.09 vs. 6.37cm, 95%CI: 4.87-7.87, p=0.00976). There was a downward crossing of percentile channels on growth chart for girls with JIA (-8.22, 95%CI: -15.83-(-1.06), p=0.0455). Such tendency was not significant in boys. Female patients requiring therapy with systemic GCS for a whole period between two measurements had significantly lower increase of height than girls who discontinued GCS earlier (p=0.019). Dose of MTX or GCS did not directly influence growth rate in the study group. Higher CRP and ESR levels at baseline positively correlated with body mass increase (CRP: r=0.306 p=0.0388, ESR: r=0.384 p=0.00835) at second measurement. Girls with JIA who gained more weight within the observation period had significantly lower levels of vitamin D (25-OH-D3) at second timepoint (r= 0.523, p=0.0150).

Conclusions

The study confirmed that long-term GCS treatment is associated with growth impairment in patients with JIA. Moreover, such therapy may exacerbate vitamin D deficiency, therefore patients with high disease activity at onset should receive higher doses of supplementation.

JUVENES PRO MEDICINA
ŁÓDŹ, POLAND

Sepsis as a complication of varicella in children

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Introduction

Varicella (chickenpox) is a highly communicable disease which typically affects children 2-8 years of age. It is usually a mild disease, but can cause complications requiring hospitalization and in rare instances, can ever be fatal. The one of the most dangerous complications is sepsis.

Aim of the study

The aims of the study were to determine the incidence rate of hospitalization for patients with sepsis related to varicella and to describe these patients.

Material and methods

We analyzed medical records of children with sepsis related to varicella hospitalized in Department of Children`s Infectious Diseases, Medical University of Warsaw, from 01.01.2015 to 31.12.2017.

The sepsis was diagnosed based on clinical symptoms and laboratory tests.

Results

Of the study period 473 children with varicella were hospitalized, in 8,2% of them (39; 17 boys and 22 girls) sepsis was diagnosed. The mean age was 3 years 6 months (range: 5 months - 10 years 9 months). None of those patients was immunocompromised. The duration of hospitalization ranged from 6 to 15 days (median 9 days). Admission occurred at different times after the first symptoms of varicella, ranging from 1 to 7 days (median 4 days).The household exposure to varicella was confirmed in 15 cases. Patients presented other complications (some of them more than one): bacterial skin infection (17 patients; 43,6%), scarlet fever (11 patients; 28%), pneumonia (3 patients; 7,7%), acute otitis media (4 patients; 10,3%) and purulent conjunctivitis (3 patients; 7,7%).

The following laboratory results were obtained: CRP mean 111,7 mg/l (median 71 mg/l), PCT mean 18,02 ng/ml (median 4,83 ng/ml), WBC mean 13,7 K/µl(median 13,4 K/µl).

Bacteremia was confirmed only in 7 cases (S. pyogenes and S. hominis in 3 cases respectively and S.aureus in 1 case). Among 17 patients with sepsis as a result of bacterial superinfection of varicella skin lesions a causative agent was identified in 8 cases (S. aureus in 5 cases, S. pyogenes in 2 cases, S. epidermidis in 1 case) All 39 patients recovered.

Conclusions

Varicella may be severely complicated in otherwise healthy children. Sepsis related to varicella most commonly develops as a result of bacterial superinfection of skin lesions.

Comparing short-course and long-course parenteral antibiotic treatment for osteoarticular infections in children: a retrospective study

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Introduction

Osteoarticular infections (OAI) in children including osteomyelitis (OM) and septic arthritis (SA) require prompt diagnosis and treatment. These infections are treated with parenteral antibiotics and require surgery in specific situations. Prolonged intravenous therapy is associated with higher costs, increased length of hospitalisation and antibiotic-associated complications. Consequently, there is a general trend towards shortening the intravenous treatment. The question when to switch to oral antibiotics without compromising cure rate is thus yet to be answered, especially if improvement after treatment institution is delayed.

Aim of the study

The goal of this study was to compare the difference between outcomes in children who were treated with short-course intravenous antimicrobial therapy (SCT≤7 days) and long-course intravenous therapy (LCT≥ 8 days).

Material and methods

We retrospectively analyzed OAI cases in children between >1 month and <18 years of age, hospitalized between 2006 and 2018 at our department. Children with osteosynthetic material were excluded from the study. Data were reported as median and IQR or absolute numbers and percentages. Nonparametric, two-tailed Mann-Whitney U test and Fisher exact test were used when appropriate. The Primary outcome was full recovery without the need for further antimicrobial therapy because of OAI indication during the 12 months after primary therapy. and the secondary outcome was need of subsequent surgical intervention.

Results

257 patients were included in the study. The median age of the patients was 54 months (20-132). 115 (44.7%) patients received SCT and 142 (55,3%) received LCT. The median duration of intravenous therapy was 5 days (5-7) in SCT and 14 days (9-19.25) in LCT group. The median length of oral treatment was 21 days in both SCT (17-24) and LCT group (16.25-28). We observed only one recurrence of SA in the SCT and one in the LCT group. There were 8 (14.38%) surgical interventions in the SCT and 67(47.18%) in the LCT group ($p<0.5$).

We also compared the subgroups of SCT and LCT that only received conservative treatment. The median length of parenteral treatment was 10 days (9-14) in the LCT and 5 days (5-7) in the SCT subgroup. There was only one recurrence of OAI in a child treated with SCT and no recurrences in LCT group ($p>0.5$).

Conclusions

We can conclude that children who demonstrate prompt improvement in clinical and laboratory parameters can be safely treated with SCT and that recurrence of OAI is not significantly higher in these patients. In our study, children who received LCT more often required surgical intervention due to the fact that treatment was prolonged if conservative approach failed and surgery was more frequently required. The length of oral treatment was the same in SCT and LCT group.

The most common complications in hospitalized children with varicella

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Introduction

Varicella, caused by the varicella-zoster virus (VZV), is a childhood disease affecting those younger than 20 years in 95% of cases. In immunocompetent children it is generally relatively mild and self-limiting but complications resulting in hospitalization are reported.

Aim of the study

The aim of this study was to analyze the causes of hospitalization in the course of varicella in children and to describe the most common complications.

Material and methods

An analysis was performed of the medical documentation of children hospitalized for varicella in Department of Children`s Infectious Diseases, Medical University of Warsaw, from 01.01.2015 to 31.12.2017.The complications were defined according to ICD-10 and were further analyzed.

Results

From January 2015 to December 2017, 473 varicella associated hospitalizations were reported. There were 240 boys and 233 girls, the mean age was 3 years 10 months (range: 11 days - 17 years 11 months). 23 children were hospitalized because of their immunodeficient status and need of intravenous antiviral treatment. The remaining 450 patients were admitted because of complications and/or coincidence with other condition. Bacterial infections of the skin and soft tissue were the most frequent complications (286 cases; 60,47%), followed by respiratory tract infections (107 cases; 22,6%).

The most common clinical form of bacterial skin complication was pyodermia, which occurred in 280 children. Cellulitis was diagnosed in 56 patients. Abscess formation was reported in 7 patients. The mean length of hospitalization was 5 days (range: 1-15 days).

Among children with respiratory tract infection in 36 cases pneumonia was diagnosed, in 30 – URTI, in 28 – acute otitis media and in 13 - bronchitis. The mean length of hospitalization in this group of patients was 5 days (range: 1-20 days).

Conclusions

Bacterial skin infections are the most common complications of varicella among hospitalized paediatric patients. The clinical course may be severe and complicated resulting in prolonged hospitalization or need of surgical intervention.

JUVENES PRO MEDICINA
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Influence of obesity on risk of developing beta-cell autoimmunity in pediatric patients

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Introduction

Type 1 diabetes (T1DM) is the most common type of diabetes observed in children and adolescents. However, increasing prevalence of pediatric obesity predisposes to the development of childhood-onset type 2 diabetes (T2DM). Moreover, excessive weight and insulin resistance are widely investigated as suspected factors exacerbating autoimmune processes. These potential links can be further explored by studying obese children without overt diabetes.

Aim of the study

Assessment of the occurrence of diabetes-related autoantibodies in children and adolescents with obesity.

Materials and methods

This was a retrospective study including pediatric (5.5-18 years old) inpatients with obesity (body mass index BMI≥95 percentile) hospitalized in the Department of Diabetology during the years 2011-2016. Patients suffering from inflammatory or metabolic diseases were excluded. Collected data included: body weight, height, Tanner stage, glucose and insulin during 2-hour Oral Glucose Tolerance Test (OGTT) and autoantibodies related to diabetes: ICA, GAD, IA2, IAA and ZnT8 antibodies. Insulin resistance index (HOMA-IR) and BMI z-score were calculated. As a follow-up, the patient's parents or caretakers were contacted. With those available and consenting, we collected a structured medical interview focused on the family history of T1DM and other autoimmune diseases.

Results

The study included 162 patients [median age 13.1 years old (25-75%: 11.2–15.6); Tanner stage 3 (2-5), BMI z-score 2.2 (1.9–2.5)]. None had previous diagnosis of either T1DM or T2DM or any autoimmune disease. Impaired glucose metabolism was noted in 28 (17.3%) of children: three presented impaired fasting glucose (IFG), 23 impaired glucose tolerance (IGT), 2 both abnormalities. Furthermore, 29 (17.9%) children were positive for ≥1 autoantibody and 5 (3.1%) patients for ≥2 autoantibodies. Patients with IFG or IGT were more likely to be positive for ≥1 autoantibody (OR=2.7, 95%CI: 1.07–6.81). Those with ≥1 autoantibody presented higher insulin resistance [median HOMA-IR 4.33 (25-75%: 2.37–5.05) vs 3.2 (2.08–4.16), p=0.0280] but similar BMI z-scores [median 2.2 (25-75%: 2–2.5) vs 2.2 (1.9–2.5), p=0.8785]. Family history was collected for N=108 children, out of which 17 (15.7%) were positive for ≥1 autoantibody. History of autoimmune diseases in the first-degree relative was unrelated to children`s autoantibody positivity (OR=0.67, 95%CI: 0.14-3.27, p=0.6257), neither was presence of T1DM in first- or second-degree relative (noted in 7 out of 91 autoantibody-negative and 0/17 of autoantibody-positive children, without significant difference - p=0.2903).

Conclusions

Obese children present relatively high prevalence of islet cell autoimmunity markers, related to insulin resistance and independent of obesity severity or family history for autoimmune conditions. The observed results may support the role of insulin resistance as an exacerbating factor in the development of T1DM.

Is each mililiter of newborn blood intake relevant? Analysis of selected red blood cells and biochemical parameters and anaemia in the newborns.

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Introduction

The loss of blood collected for diagnostic tests is an important problem for young children, especially for newborns. For these children, taking up a few ml of blood leads to an increased risk of anaemia development. Despite the introduction of modern methods for collecting blood volumes of several microlitres, the problem of iatrogenic anemia is still relevant.

Aim of the study

The aim of the study was an analysis of the impact of taken blood samples on the general blood cell count and its correlation with anaemia development among newborns.

Materials and methods

Retrospective study was conducted in the Department of Paediatrics of Medical University of Lodz and included patients hospitalised during the period from January 2018 to March 2019. We analysed medical history of 200 newborns. They were admitted to hospital due to diverse symptoms. We analysed how many ml of blood was taken and compared the first and the last blood parameters.

Results

During the hospitalization of neonates, a statistically significant decrease in the level of red blood cells (average fall of 0,54 mln/mm3), hemoglobin (2,16 g/dl), hematocrit (6,42 percentage points), white blood cells (1 780/mm3) as well as the mean volume of the red blood cell (2,31 fl) was observed ($p < 0,00001$). What is more, boys were more vulnerable to drop of red blood cells and hematocrit than girls ($p = 0,03$, $p = 0,04$, respectively). Despite the small average volume of blood collected in neonates (Med = 2,28 ml), its increase correlates with the greater decreases of red blood cells, hemoglobin, hematocrit (in all $p < 0,0001$) and MCV ($p = 0,004$). Moreover, in neonates with lower body weight deeper decreases in these parameters were observed (RBC, $p = 0,01$; HGB, $p = 0,001$; HCT, $p = 0,003$). Referring to norms appropriate for age, at admission anemia was noted in 2,2% (n = 3), and with the last morphology it was at 5,1% (n = 7). Similarly, the number of newborns with decreased hematocrit levels has changed (at admission - 2.2%, n = 3; in the last morphology – 6,6%, n = 9) and red blood cell level from 20.6% (n = 28) to 28,7% (n = 39). However, neither of these changes were statistically significant ($p = 0,20$, $p = 0,08$, $p = 0,12$, respectively).

Conclusions

Majority of newborns show a significant drop in blood cell counts during hospitalization, which consequently leads to an increased risk of anaemia development. The research results clearly indicate that the matter requires immediate attention. It needs to be figured out how and to what extent medical examinations can be limited to make taking blood samples as small in volume as possible. Moreover, it is worth reanalyzing reasons behind hospitalizations and minimizing the phenomenon of overdiagnosis of certain disease entities to prevent unnecessary tests from being conducted.

Nationwide study to evaluate of glycaemic control in children and adolescents with type 1 diabetes in Poland.

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Introduction

Despite great therapeutic advancements, majority of children and adolescents with type 1 diabetes (T1D) presents unsatisfactory diabetes control assessed by glycated haemoglobin (HbA1c). This creates a need for systemic interventions and improvements in diabetes care system. However, such steps must be based on reliable, large-scale studies assessing the present state of glycaemic control and verifying effects of any interventions. The first nationwide study was organized to evaluate glycaemic control in children and young patients with T1D in Poland.

Aim of the study

Simultaneous measurement of HbA1c in a representative group of Polish children and adolescents with T1D.

Materials and methods

Invitations to participate in the first nationwide study were sent to all paediatric diabetes care centres in Poland. In those who accepted, the study was carried out simultaneously for one week in March 2018. During visits, each child treated for T1D over 1 year was included into study. The protocol included collection of capillary blood sample and a clinical questionnaire filled by the doctor or nurse. Afterwards, blood samples and matching questionnaires were blinded and sent to the organising centre. HbA1c was measured by high-performance liquid chromatography. Patients whose clinical data were incomplete or whose treatment model was changed within the last 6 months were subsequently excluded from analysis.

Results

Out of 28 approached centres, 25 agreed to take part in the study, providing adequate samples and data for 902 patients [52% boys, mean age 12.3 y.o. (95%CI: 12.1-12.6), mean diabetes duration 11.4 years (10.8 – 12.0)], which covered approximately 8% of the whole Polish pediatric population with T1D. Majority of the patients (80%) were treated with continuous subcutaneous insulin infusion, 26.5% used some type of continuous glucose monitoring (CGM). Mean HbA1c in the studied group was 7.35% (7.27 to 7.42), 22.8% of the children achieved the target level of HbA1c according to Polish Diabetes Guidelines [HbA1c ≤ 48 mmol/mol (≤6.5%)], and 45.2%according to ISPAD Consensus Guidelines 2018 [HbA1c <53 mmol/mol (<7.0%)]). During one month preceding the study, 1% of children experienced severe hypoglycemia and 0.55% suffered from ketoacidosis.

In the studied group HbA1c was closely related to the mode of therapy [CSII: 7.26 (7.19-7.33) MDI: 7.67 (7.44-7.89), p=0.0002], use of CGM [users: 6.86% (95%CI: 6.72 to 7.00%) vs not-users: 7.51% (7.44 to 7.62%), p<0.0001], body weight status [lean: 7.3% (7.2 to 7.4%), overweight: 7.5% (7.4 to 7.7%), obese: 8.1% (7.8 to 8.4%), p<0.0001].

Conclusion

The overall glycaemic control in Polish children with T1D is satisfactory, although there is still room for improvement. As a first nationwide assessment, the study provided a good reference point for the futuretherapeutic intervention.

Muenke syndrome - a case report with unproven familial history of the disease.

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Introduction

Muenke syndrome is a genetic disease with a dominant inheritance pattern. It is a growth factor receptor 3 (FGFR-3)-associated coronal synostosis which is characterized by the premature closure of skull bones – craniosynostosis. Clinical phenotype varies between patients, however most of them present hearing impairment, dysmorphic features of hands and feet and intellectual disability. Despite the syndrome occurs in about 1 in 30,000 new-borns, the amount of published case report with familiar Muenke syndrome is understated.

Case report

The patient was a 1,5 months old girl, consulted in the genetic clinic due to her dysmorphic features which were found after delivery. She had patent foramen ovale, asymmetry in lateral brain ventricles, a premature fusion of certain skull bones presented by brachycephaly and prominent frontal eminences, flat nasal bridge, retrognatia and bilateral 2/3 toes syndactyly. There was a history of similar phenotype in proband's family from the father's side. The patient was tested molecularly and the results of DNA sequencing showed heterozygotic variant for mutation c.749C>G in exon 7 of the FGFR3 gene. Although parents were tested genetically a typical mutation was not found. The father presented some abnormal patterns on hands while the mother had no abnormalities detected.

Conclusion

Despite the risk of Muenke syndrome in the case of the family was low, the patient is a typical example of the disease. The family pedigree is not a perfect example of autosomal dominant disorder, although further research in father's family may be worth considering.

Wiskott-Aldrich Syndrome – an analysis of pathways and delay in diagnostics based on past medical histories of five patients. What should a clinician look for?

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Introduction

Wiskott-Aldrich syndrome (WAS) is a very rare recessive X-linked immunodeficiency resulting in microthrombocytopenia, recurrent infections and eczema. The possible severity of symptoms, immunological and haematological implications create a demand for an efficient and quick diagnostics leading to an early introduction to a theraphy.

Aim of the study

To analyse the efficacy, delay and possible ways of improvement of the WAS diagnostics. Do any Wiskott-Aldrich syndrome's characteristics allow a young clinician to diagnose this rare genetic disorder in order to introduce a symptomatic patient to a lifesaving theraphy early?

Materials and methods

Five pediatric patients admitted to Department of Pediatrics, Oncology and Haematology of Medical University of Lodz and diagnosed with Wiskott-Aldrich syndrome were retrospectively analyzed giving us an insight into their diagnostic pathways and letting us create suggestions for the future cases. We analyzed the symptoms and performed routine diagnostics tests including bone marrow biopsies.

Results

On admission to the ward every patient was presenting symptoms of an infection, including one severe and life threatening case, haemorrhagic diathesis and thrombocytopenia (Med = 50 000 platelets). The mean platelet volume (MPV), if tested, was lowered. Histopathological examinations of taken bone marrow samples revealed impaired thrombopoietic activity with qualitative disorder of the megakaryocytic line.

Conclusion

Microthrombocytopenia present in boys, especially with an intercurrent infection in the neonatal period, may suggest presence of the Wiskott-Aldrich syndrome and entitles clinicians to carry out a full genetic diagnostics. An easy test that could give direction to the right diagnosis is the MPV parameter.

Bone densitometry and frequency of fractures in children

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Introduction

Densitometry is a measurement of bone mineral density (BMD), which uses x-rays to scan especially the area of lower spine or in some cases also the total body less head. Densitometry is helpful to diagnose such diseases as osteoporosis or osteopenia but also is useful for monitoring treatment in bone dysplasia for example osteogenesis imperfecta (congenital bone fragility). Fractures are particularly more likely to happen during the childhood than the adulthood, because of different structure of the bones and we have to pay more attention to the motor development of children. Moreover their injuries need different evaluation.

Aim of the study

This research was carried out to investigate the correlation of the results of densitometry and the number of fractures in children who were more than 5 years old.

Material and methods

Retrospective study was conducted on 150 patients. The data were collected from patients who were hospitalized in the Department of Paediatric and Metabolic Bone Diseases of Medical University of Lodz from January 2018 to February 2019. Patient's gender, age, medical diagnosis were recorded. Biochemical parameters such as vitamin D concentration and alkaline phosphatase activity were also analysed.

Results

In the study group, the radius was the most frequently broken bone by children (24,2%, n = 36). It was followed by the ulna (19,5%, n = 29), femur and tibia (11,4% each, n = 17) and (6%, n = 9). However, taking into consideration the total number of fractures, the highest number of fractures - 21,3% (n = 74), concerned the radius, then the femur (15,3%, n = 53), the ulna (15%, n = 52), the tibia (11. 2%, n = 39), the humerus and arrow (3,2%, n = 11). Among children with previous bone fractures Z-Score TB parameter was statistically significantly lower ($p = 0,03$). What is more, the occurrence of osteogenesis imprefecta was correlated with lower values of Z-score TB and Z-Score S ($p < 0,001$). However, what is interesting, in this group of patients the level of vitamin D was statistically higher than in other children ($p = 0,004$).

Conclusions

The research had shown that there is a correlation between number of fractures and the densitometry. Congenital bone fragility is highly associated with the low bone mineral density. Nevertheless, the level of vitamin D is higher among patients who suffered from this disease which could be caused by regular monitoring of level of this vitamin, as well as supplementation.

Vaccination – parents' knowledge in relation to overall views and their vaccination plan.

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Introduction

Vaccination becomes more and more popular discussion topic among parents and mass media lately. Percentage of children who are unvaccinated and number of myths around this topic are incessantly increasing. Is this tendency to perpetuate false information coming from better access to knowledge which is easy to find in mass media these days or maybe it is caused by doctors who don't educate parents in sufficient way?

Aim of the study

The aim of the study was to assess parents' knowledge about the vaccinations, side effects and plans about vaccinating their children.

Material and methods

A questionnaire survey was conducted among randomly selected parents of 62 children aged 0,5 to 14 years. Surveys were anonymous, consisted of 27 questions, both single and multiple choice. The study was conducted in the Department of Pediatric and Metabolic Bone Diseases and 3 nurseries, 1 outpatient clinics.

Results

In the study group 96,8% (n = 60) of children were vaccinated. Most parents evaluate their knowledge about vaccination as very high (54,1%, n = 33) or high (27,9%, n = 17). For them, the most common source of information about vaccination was a doctor (n = 52), then it was the Internet (n = 47), which 3 out of 4 respondents used. However, parents who receive information about vaccinations from the Internet are less convinced of the safety of vaccinations ($p = 0,01$). According to their opinion vaccine adverse events occur among children more often compared to those parents who do not search the Internet for information about this. What is more, receiving information from a doctor claims that vaccine adverse events are less frequent than those who do not use this source ($p = 0,007$). Generally, only 24% of parents are convinced of the safety of vaccinations. What is more, the parents of younger children have more doubts ($p = 0,026$, $R = 0,28$) and more often believe in dangerous consequences of vaccinating a child, such as autism ($p = 0,028$, $R = -0,28$). What is interesting, statistically it is more often claimed by parents who assess their knowledge about vaccination as better ($p = 0,016$).

Conclusions

The majority of parents 96,8% are determinated to vaccinate their children. People treat their knowledge about vaccination, gained mostly from the Internet or from the doctor, as very reliable and wide. What is worrying, however, is a fact that parents who receive information from the Internet are less confident about safety of the vaccination. It is necessary to make parents aware of the importance of vaccination, especially the younger ones, who have more doubts.

Herpes zoster in children

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Introduction

Herpes zoster (HZ) is an infectious disease caused by reactivation of latent varicella-zoster virus infection. It manifests with vesicular eruption in an affected dermatome. It is usually a disease of adult/elderly persons but may also occur in children. The main risk factor for HZ is immunodeficiency.

Aim of the study

The aim of the study was to compare clinical manifestation of HZ in immunocompetent and immunocompromised children.

Material and methods

Medical charts of all children with HZ diagnosed in Department of Children`s Infectious Diseases (Pediatric Ward of Infectious Diseases Hospital in Warsaw) between 1.06.2013 and 31.08.2017 were analyzed. There were 101 immunocompetent patients (Group A) and 32 immunocompromised (Group B). Age, history of varicella, time interval between varicella and HZ, underlying diseases, immunosuppressive therapy, dermatome involvement and HZ complications were studied in both groups.

Results

The median age in Group A and Group B was 9 years 5 months. Group B consisted mainly of patients with oncologic disorders (21/32). The mean time interval between varicella and HZ was similar: 4 years 10 months in the Group A and 4 years 11 months in the Group B. In two children from the Group B recurrent HZ was reported. In both groups thoracic dermatomes were affected the most frequently (59,4% and 44%, p=0,12). There were not statistically significant differences between involvement of cervical, lumbar dermatomes and of regions nerved by trigeminal nerve in both groups, but dermatomes S1-S2 were affected in 5 patients from the Group B and in no patient from the Group A ($p<0,005$). In both groups there were single cases of herpes zoster duplex (with involvement of noncontiguous dermatomes). Complications occured in 27/101 (27%) patients from the Group A and in 8/32 (25%) from the Group B. In both groups bacterial infections (including sepsis) and disseminated HZ were diagnosed but neurologic complications were observed only in the Group A.

Conclusions

Herpes zoster occurs in both immunocompetent and immunocompromised children. Clinical manifestations usually are similar. Serious complications, although uncommon, affect not only immunocompromised patiens but also otherwise healthy children.

Shorter-course versus longer-course antibiotic treatment for osteoarticular infections (OAI) in children: a retrospective study

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Introduction

Osteoarticular infections (OAI) in children including osteomyelitis (OM) and septic arthritis (SA) require prompt diagnosis and treatment. Most frequent pathogens of OAI include S. aureus, S. pneumoniae, S. pyogenes and K. kingae. Treatment of acute OAI is usually initiated empirically and then tailored to the susceptibility pattern of the isolated etiologic agent. In a community where MRSA prevalence is low, first generation cephalosporin or anti staphylococcal penicillin can be used, otherwise vancomycin is the right choice. We mostly used flucloxacillin as empiric intravenous antibiotic.

Intravenous therapy is associated with higher costs increased length of hospitalisation and antibiotic associated complications. Consequently, there is a general trend towards shortening the intravenous period. The question in which patients and when to switch to an early oral treatment without compromising the cure rate is thus yet to be answered.

Aim of the study

The goal of this study was to compare the difference between outcomes in children who responded well to empiric antibiotics and were treated with short-course intra venous antimicrobial therapy (SCT≤7 days) and non-responders with long-course intra venous therapy (LCT≥ 8 days).

Material and methods

We retrospectively analyzed OAI cases in children between >1 month and <18 years, hospitalized between 2006 and 2018. The criteria for OAI diagnosis were positive MR findings after symptoms suggestive of AOI. Children with osteosynthetic material were excluded from the study. The decision to switch to oral treatment was based on the clinical improvement of the patient and decrease in CRP. If after 3-5 days clinical status remained unchanged, CRP dropped insufficiently and the MR showed collection, surgical treatment was suggested. Data were reported as median and IQR or absolute numbers and percentages. Nonparametric, two-tailed Mann-Whitney U test and Chi-square tests were used when appropriate. The primary outcome measure was treatment failure for any reason, the secondary outcome was the need of subsequent surgical intervention.

Results

257 Patients were included in the study. The mean age of the patients was 54 months (20-132). 115 (44.7%) patients received SCT and 142 (55,3%) received LCT. The median duration of intravenous antimicrobial therapy was 5 days (5-7) for SCT and 14 days (9-19.25) for LCT. The median length of the oral treatment was 21 in SCT group (17-24) and LCT group (16.25-28). There were 8 (14,38%) secondary surgical interventions in the SCT group and 67(47,18%) in the LCT group ($p<.05$). There was only one recurrent arthritis in SCT group.

Conclusion

The study suggests that in children in which clinical symptoms and CRP decreases soon after starting the intravenous antimicrobial therapy, SCT can be safely used in most cases. Children that did not respond well to the initial treatment were treated with LCT and need surgery more frequently.

PHARMACY

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Venlafaxine affects expression of POLG, ENDOG and EXOG in peripheral blood in the chronic mild stress model of depression

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Introduction

Currently, mood disorders are commonly found problems around the world. Interest in the role of the mitochondrial DNA (mtDNA) in depression has definitely increased over the last years. The studies show that depression is associated with acceleration of apoptosis, reduction in ATP levels, decreased activity of DNA damage repair and large amount of double-strand breaks related to oxidative stress. Importantly, the impairment of mitochondria is related to all of this processes.

Aim of the study

The objective of the study was to investigate changes of peripheral expression level of genes associated with mtDNA repair, replication and degradation i.e. POLG, ENDO and EXOG in chronic mild stress (CMS) model of depression and after treatment with venlafaxine belonging to serotonin-norepinephrine reuptake inhibitor (SNRI) class of antidepressant.

Material and methods

The study was performed in vivo. 24 Wistar rats were divided into 4 groups (n=6), including: controls, CMS rats, CMS rats administered with saline (1mL/kg, IP) and CMS rats treated with venlafaxine (10 mg/kg, IP). After 7 weeks of the stress regime, the animals were sacrificed by decapitation. Then, RNA was isolated from their peripheral blood mononuclear cells (PBMCs) and genes expression was established using TaqMan probes and 2-ΔCt method with 18S rRNA as a reference gene. Statistical analysis was performed by one-way analysis of variance (one-way ANOVA) and Tukey's post-hoc test.

Results

Administration of venlafaxine significantly increased expression of the three examined genes. In the case of POLG and ENDOG there are one-order magnitude differences. Statistical significance of obtained results is $p < 0.001$ for POLG and ENDOG, and $p = 0.003$ for EXOG in relation to control groups.

Conclusions

The results indicate that venlafaxine may affectt expression of POLG, ENDOG and EXOG genes in depression, what suggests connection between its antidepressant action and mtDNA.

The spent hops (Humulus Lupulus L.) extract as new pharmacological target in the treatment of inflammatory response

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Introduction

Activated macrophages play an important role in inflammation, both in acute and chronic inflammation. They secrete many compounds which are responsible for this condition - cytokines or enzymes involved in this process. The production of these substances is enhanced by increasing the amount and activity of transcription factors involved in the expression of these genes. The activity of individual compounds is observed in the course of many inflammatory diseases among others chronic or autoimmune diseases. The Humulus Lupulus L. which contains a lot of polyphenols, has been described to possess anti-inflammatory effect. The studies show the effectiveness of polyphenolic compounds in reducing inflammation and in inhibiting the formation of inflammtory mediators.

Aim of the study

The aim of the present study was to investigate the impact of spent hops extract (SHE) on the expression of inflammatory condition mediators. The hypothesis of this study was assumption that the compounds contained in the examined extract reduce the expression of inflammatory mediators at the level of mRNA and protein.

Materials and methods

The murine RAW 264.7 macrophages were cultured at 37°C in an atmosphere of 5% CO2 plus air with supplemented medium. The LPS was used to the induction of inflammatory condition. In addition, one of corticosteroid -budesonide- was used as positive control. To assess the effect of extract on the cell viability, the MTT test was used. Based on the results of this test, the concentrations range of extract was determined (5-25 μg/ml). After incubation with or without SHE, LPS and budesonide, RNA and protein were isolated. cDNA was synthesized from the RNA. The obtained cDNA was used to assess the following genes expression: IL-1β, IL-6, TNF-α, Ptgs2, NOS2, NF-κB1 using RT-qPCR. Western Blot analysis revealed protein expressions of: IL-1β, TNF-α, COX-2, iNOS, NF-κB, p-NF-κB, IκB-α, p-IκB-α. Expression of IL-6 protein was measured by ELISA.

Results

The spent hops extract decreased mRNA expression of IL-1β, IL-6, TNF-α, Ptgs2, NF-κB genes and protein expression of IL-1β, IL-6, TNF-α, COX-2, iNOS, NF-κB, p-NF-κB, p-IκB-α in varying degrees. However, it increased mRNA expression of NOS2 gene and protein expression of IκB-α diversely.

Conclusions

The spent hops extract has a wide spectrum activity. The inhibition of pro-inflammatory cytokines, pro-inflammatory enzymes, transcription factors production cause that it can be used as a means of suppressing the inflammatory reaction thus the spent hops extract may be a new pharmacological target in the treatment of inflammatory reaction.

Novel Dual ENKephalinase Inhibitor (DENKI®) PL265 exerts potent anti-inflammatory activity in the mouse model of colitis.

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Introduction

Inflammatory bowel disease (IBD), represented by Crohn's disease and ulcerative colitis are chronic, recurrent gastrointestinal disorders. Recent studies suggest that leukotrienes (LTs), including LTB4 are important mediators in IBD and that the LTA4 hydrolase (LTA4 Hyd) regulates the level of LTB4. LTA4 Hyd inhibitors can be thus considered as potential treatment for IBD. On the other hand, it was evidenced that increased enkephalins (ENKs) degradation aggravates inflammation score and promotes inflammatory pain in IBD patients.

Aim of the study

The objective of the study was to validate the anti-inflammatory properties of a newly designed Dual ENKephalinase Inhibitor (DENKI®), PL265 targeting ENKephalinases and LTA4 Hyd in the mouse model of colitis.

Materials and methods

The therapeutic activity of PL265 was evaluated using mouse model of experimental colitis induced by DSS. DSS (2.5%) was administered in drinking water for 5 days. PL265 was injected intraperitoneally (i.p.) once daily at the dose of 1, 3 and 5 mg/kg for 4 days, starting on Day 3. In addition, PL265 was administered orally at the doses of 25 and 50 mg/kg. Body weight, macroscopic score, ulcer score, colon length and weight, as well as myeloperoxidase (MPO) activity were recorded. Expression of pro-inflammatory markers were measured by western blot.

Results

At the dose of 5 mg/kg, i.p., PL265 improved macroscopic score and selected inflammation parameters. Moreover, it stabilized body weight of animals. Other doses and routes of administration failed to alleviate inflammation.

Conclusion

Our results show that Dual ENKephalinase Inhibitors (DENKI®), such as PL265, have the potential to become valuable anti-inflammatory therapeutic for IBD treatment.

Susceptibility of Myerozyma guilliermondii (syn. Candida guilliermondii) to azoles in the context of drug cross-resistance with methotrexate

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Introduction

Prevalence of fungemia caused by Myerozyma guilliermondii (syn. Candida guilliermondii) in oncological patients, especially with hematologic malignancies, is growing gradually. M. guilliermondii is twice more common etiological agent of fungemia in haematological patients in comparison to Candida albicans. Decreased susceptibility to azoles and echinocandins was detected in cases of M. guilliermondii infections, however, the mechanism of mentioned susceptibility is complex and not fully understood. Patients treated with methotrexate, which is a common drug in oncological treatment, have a higher risk of infection with fluconazole-resistant M. guilliermondii.

Aim of the study

The aim of the study was to determine the possibility of cross-resistance of M. guilliermondii between azoles and methotrexate.

Materials and Methods

In the study 15 strains of M. quilliermondii (1 – standard strain ATCC6260 and 14 – obtained from the collection of Chair of Biology and Medical Microbiology, MU of Lodz) were tested. For all strains MIC (minimium inhibitory concentration) for fluconazole (FCZ), voriconazole (VCZ) and methotrexate (MTX) was carried out by the EUCAST microdilution method (acc. CLSI recommendation, 2016). Next, all strains were exposed twice to serial concentrations of methotrexate. After stimulation the second susceptibility testing to FCZ and VCZ was performed. Difference between susceptibility before and after methotrexate stimulation was analysed. The statistical analysis with STATISTICA 13.1 software was performed.

Results

The median of MIC for 15 strains before stimulation was: 9.33 μg/dL (IQR: 63.33) for FCZ; 3.5 μg/dL (IQR: 6.65) for VCZ; 15.00 μg/dL (IQR: 38.44) for MTX. The median of MIC for 15 strains after stimulation was: 64.00 μg/dL (IQR: 0.00) for FCZ; 3.17 μg/dL (IQR: 4.61) for VCZ; 45.00 μg/dL (IQR: 0.00) for MTX. Wilcoxon signed-rank test showed the significant increase in the median of MIC after MTX stimulation (for FCZ - 54.67 μg/dL, $p<0.001$ and for MTX - 30.00 μg/dL, $p=0.001$).

Conclusions

M. guilliermondii strains, that were originally sensitive to fluconazole, have become resistant to fluconazole after methotrexate stimulation, so possibility of cross-resistance was proved. In case of voriconazole cross-resistance was not observed.

Free Fatty Acid receptors agonists affect colonic epithelial ion transport in mice colon

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Introduction

The family of Free Fatty Acid Receptors (FFARs), specific G protein-coupled receptors consist of four members: FFAR1-4, where each responds to different chain length fatty acids (FAs). It was reported that ligands of those receptors may reduce inflammatory states, thus FFARs have become a potential new target in inflammatory bowel disease (IBD). IBD is a heterogeneous disorder characterized by chronic, relapsing, inflammation in the gastrointestinal tract, consisting of ulcerative colitis (UC) and Crohn's disease (CD).Neither CD nor UC are fatal diseases but both are very debilitating with a wide range of symptoms. One of them is secretory diarrhea, which occurs when secretion of water and electrolytes into the intestinal lumen exceeds its absorption. The movement of fluid between the intestinal lumen and blood is driven by the active transport of ions, thus restoration of this process in IBD patients could be beneficial as the chronicity of symptoms leads to decrease in patient's quality of life.

Aim of the study

The aim of this study was to evaluate the effects of FFAR1- 4 agonists on epithelial ion transport in isolated mouse colon stimulated by Forskolin (FSK) and Veratridine (VER) among groups comprising healthy control and 3% Dextran Sulfate Sodium (DSS)-treated mice.

Materials and methods

Male c57 mice were randomly divided into control group and group treated with 3% DSS in drinking water. Epithelial ion transport was examined using Ussing Chambers. Changes in ions flux were determined on the basis of short-circuit current (ΔIsc) in isolated mouse colon exposed to FFAR1-4 and stimulated with FSK or VER.

Results

ΔIsc values were reduced in inflamed tissues as compared to controls in all colon samples challenged with FSK. Stimulation of healthy tissue with FFAR1 and FFAR2 agonists caused significant ($p<0,05$) reduction of ΔIsc induced by FSK. On the other hand only FFAR3 agonist caused significant ΔIsc decrease in inflamed colon tissue treated with FSK. FFAR1 and FFAR2 agonists lowered, but FFAR3 and FFAR4 agonists increased ion transport in control tissues challenged with VER. Stimulation of DSS-treated mouse colon tissue with FFAR1, 2 and 4 agonists diminish ΔIsc changes caused by VER.

Conclusions

FFAR agonists differentially affect the ion transport in healthy and inflamed colon tissue. The varying effects depend not only on the receptor but also on the stimulator of ion flux (FOR or VER), as some ligands activate and the other inhibit the transport. These differences may be explained by the activation of various intracellular pathways by FFAR agonists. As the pathways are still not completely investigated, we will examine it in the future studies. To summarize, we suggest that it is possible to develop a diet enriched with specific FFAR ligands which could ameliorate symptoms of IBD associated with disrupted transport across intestinal epithelium.

The effects of simvastatin on the integrity and inflammatory properties of human endothelial cells induced by 25-hydroxycholesterol.

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Introduction

HMG-CoA reductase inhibitors (statins) are effective and widely used drugs in patients with hypercholesterolemia. The vascular endothelium forms a barrier that controls flow of solutes and proteins and the entry of leukocytes into tissue. The impairment of endothelial barrier by oxysterols shown in in vitro studies may be one of the key factors of atherogenesis.

Aim of the study

The aim of our study was to assess the effects of simvastatin on barrier functions and inflammatory status on human vascular endothelial cells pre-stimulated with 25-hydroxycholesterol.

Material and methods

Human umbilical vein endothelial cells (HUVECs) were pre-induced with 25-hydroxycholesterol (1μg/ml) for 4 hours and following induction, with simvastatin (10μ/ml) for 24 hours. HUVEC integrity was measured in the Real-time Cell Electric Impedance Sensing system (RTCA-DP). mRNA expression of VEGF, monocyte chemoattractant protein-1 (MCP-1), ICAM-1, IL-1β and IL-33 was analyzed by real-time PCR..

Results

Pre-inducted with 25-hydroxycholesterol caused the decrease of endothelial cells integrity observed in RTCA-DP system. Additionally 25-hydroxycholesterol caused increase of VEGF, ICAM-1, MCP-1, IL-1β and IL-33 mRNA expression in HUVEC as compared to the unstimulated control ($p<0.05$). Simvastatin caused the increase of endothelial integrity observed in RTCA-DP system as compared to the 25-hydroxycholesterol control. In HUVEC inducted with simvastatin we observed decrease of VEGF, ICAM-1, MCP-1, IL-1β and IL-33 mRNA expression as compared to the 25-hydroxycholesterol control ($p<0.05$).

Conclusions

25-hydroxycholesterol destabilize the endothelial barrier and initiate inflammatory processes, thus supporting atherogenesis. Simvastatin increase endothelial cells integrity destroyed by 25-hydroxycholesterol. Additionally simvastatin inhibits inflammatory process initiated by 25-hydroxycholesterol in endothelium.

Innovative antineoplastic, therapeutic strategy with use of small-molecule PERK inhibitors against colorectal cancer

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Introduction

Under Endoplasmic Reticulum stress conditions, mainly induced by hypoxia, the Unfolded Protein Response signaling pathway with its main downstream, PERK, become activated. The activation induces in turn phosphorylation of Eukaryotic Initiation Factor 2 alpha (eIF2α) and many other proteins maintaining cellular proteostasis and redox balance. However, upon chronic hypoxia, antioxidant defense fails due to Reactive Oxygen Species overload, which ultimately triggers execution of apoptosis. This effect is highly desirable as regards cancer cells to develop new treatment strategies, with PERK being a perfect target for this purpose.

Aim of study

The primary objective of the present study was to evaluate the effectiveness of the selected small-molecule PERK inhibitor.

Materials and methods

The effectiveness of the selected PERK inhibitor was assessed via the measurement of the p-eIF2α level using the Western blot technique. The human colon adenocarcinoma HT-29 cells were exposed to the inhibitor at a concentration range of 6μM to 50μM for 1h, and subsequently treated with 500nM thapsigargin (Th), as an ER stress inducer, for 2h. Cells pre-treated only with Th at 500nM for 2h served as a positive control, whereas untreated cells-as a negative control.

The cytotoxicity analysis of the tested PERK inhibitor was defined via the release of lactate dehydrogenase (LDH) into the culture medium and evaluated by means of Pierce LDH Cytotoxicity Assay Kit. The experiment was conducted on HT-29 cell line and on the normal human colon epithelial CCD 841 CoN cell line at concentrations of the inhibitor rising from 0,75μM to 100μM, incubated for 16, 24 and 48h, respectively. Cells treated with the media containing 1μl DMSO constituted a positive control.

Results

The examination carried out by the Western blot technique demonstrated significantly reduced phosphorylation of eIF2α at concentrations of 25μM and 50μM. Substantial cytotoxic activity of the selected PERK inhibitor against HT-29 cells was achieved at concentrations of 50μM and higher in both dose- and time-dependent manner without impairing CCD 841 CoN cells viability concurrently, regardless of all concentrations and incubation times used.

Conclusion

Since chemoresistance in many types of cancer constitute a grave problem nowadays, it becomes essential to design new, effective drug, with maximized therapeutic effect and minimized side effects. As proven above, we may assume that small-molecule PERK inhibitors seem to be a powerful weapon against tumor cells and a promising objective in targeted cancer therapy based on oxidative stress-dependent, apoptotic mechanism.

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Assessment of the public's knowledge about the development of an innovative drugs

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Introduction

Pharmaceutical companies outlays on the development of innovative drugs are high and are accompanied by long-term research programs.

The aim of the study

The aim of the study was to assess public awareness concerning the time, model and cost of launching medicines on the market.

Materials and methods

The study was conducted using a specially constructed questionnaire (single- and multiple-choice questions) addressed to patients. Respondents answered questions about the pricing of medicines, as well as their views on the pricing of generic drugs. Participants of the study were asked to respond to issues related to placing an innovative drug on the market (duration of clinical trials, a percentage of substances passing through all stages of the clinical trials, costs of placing the medicine on the market). The questionnaire allowed to collect information about age, education, expenditure on medicinal products and the places where respondents buy them.

Results

1015 questionnaires were included in the study. Pharmaceutical companies (93.4%) followed by the National Health Fund (54.9%) and the government (41.3%) were indicated as responsible for the price of the drug. According to the respondents, the price of the drug includes costs of clinical trials (75.4%), costs of advertising (67.8%), benefits of pharmaceutical companies (44.5%) and costs of legal patent protection (43.9%). 77. 4% of respondents believe that the time of launching an innovative drug to the market is shorter than 10 years (including 39.7% - shorter than 4 years). What is more, according to 72.9% of the respondents, the cost of this process is lower than 500 million USD.

Conclusions

The results of the study shows that respondents were aware of the role of health care decision-makers in regulating the prices of medicines. Respondents were not able to give the correct answers about the time and costs spent on the research and development of an innovative drug, which may cause a lack of understanding costs of treatment and medical products. Increased public awareness can contribute to the acceptance of treatment costs and compliance with medical recommendations.

Curcumin mediated malinfant melanoma treatment - preliminary in vitro studies

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Curcumin is a flavonoid antioxidative compound, well-known of its proapoptotic properties. It has been proved that curcumin presents significant anti-cancer effect against melanoma cells, affecting many targets duch as MAPKS, p21, BCl2. However, the greatest obstacle in the effective administration of curcumin is its low bioavailability. It proves that, searching for new methods enhancing maximal effectiveness of curcumin is necessary.

The aim of the project was to find the most effective treatment against amelanotic and malignant melanoma. It was achieved by increasing the bioavailibility and enhancing the anticancer properties of curcumin with electroporation and photodynamic therapy (PDT).
In our project electroporation and photodynamic therapy with blue light were investigated, as a techniques inducing anti-melanoma effect of curcumin.

For the purpose of an experiment, amelanotic melanoma (cell line C32) and human malignant melanoma (cell line A375) were used as research samples and human fibroblasts from primary culture were used as a control cells. The cells were treated with curcumin at concentrations of 5, 10, 15, 25, 50, 200μM for 24, 48 hours. The cells were irradiated with blue light (20 J/cm2) for 5 minutes and treated with electroporation (EP) alone and in combination with curcumin. EP was carried by ESOPE parameter (1200 mV/cm, 100 μs by 8 pulses). The efficacy of applied methods was analyzed with viability assay (MTT).
We observed dual effect of curcumin, related to applied concentrations. In very low doses (5 μM), curcumin acts as antioxidant protecting cells from the impact of pulsed electromagnetic field (PEF). Irradiation with curcumin can increase a number of apoptotic and necrotic cells in comparison to incubation with curcumin without electroporation.
Our study demonstrated that PEF as well as PDT provoked additive reaction with curcumin and inhibited the proliferation of C32 and A375 cells.

The results suggest that curcumin may be a potential alternative to cytostatics used in adjuvant therapy. The photocytotoxic effect initiated by irradiation confirmed the potential of this drug in photodynamic approach. However, further research and more detailed pharmacokinetics is necessary to apply a lower concentration of curcumin, maintaining the effectiveness of the applied therapy.

PhD

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Quantification of vitamin B12 and folic acid concentration in serum of patients over 60 years old suffering from mild neurocognitive disorders

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Introduction

Vitamin B12 and folic acid play a fundamental role in the functioning of the central nervous system and in the conversion of homocysteine to methionine , necessary for nucleotide synthesis and genomic and non-genomic methylation. Folic acid and vitamin B12 may play a role in preventing disorders of the CNS, dementia and neurocognitive disorders (NCD) in the elderly.

Aim of the study

Comparing levels of vitamin B12 and folic acid in serum of patients with mild NCD after 60 years old.

Materials and methods

The study was conducted at The Clinic and Department of Geriatrics, Ludwik Rydygier Collegium Medicum In Bydgoszcz, Nicolaus Copernicus University. The duration of the study: September 2015 – February 2018. The study involved 130 participants, including 31 people assigned to the group without NCD and 99 to the group with mild NCD. Recruitment for both groups took place on the basis of specific inclusion and exclusion criteria. The first inclusion criterion for both groups of patients was admission to the Geriatrics Clinic for the Overall Geriatric Assessment. The next requirement was the age of those who were 60 or older. Exclusion criteria from the study were the following factors: active mental illness, diagnosed deep NCD according to DSM-5 (Diagnostic and Statistical Manual of Mental Disorders Fifth Edition), use of drugs that slow down the central nervous system; total blindness or uncorrected vision defects, complete deafness or uncorrected hearing impairments, significant reliance in everyday life and less than 6 years of formal education. The level of significance was $p<0.05$.

Results

The mean ages were 74.64 years old for non NCD and 78.34 years old for mild NCD. The difference was statistically significant ($p=0.027$). Mean level of vitamin B12 was 314,29 pg/ml for non-NCD group and for mild NCD was 264,27pg/ml. The difference was statistically significant ($p=0.025$). Mean level of folic acid was 7,32 ng/ml for non-NCD group and for mild NCD was 6,79 ng/ml. The difference is not statistically significant ($p=0.4141$). The correlation of the vitamin B12 level to the folic acid level is 0.36 and is statistically significant ($p <0.001$).

Conclusion

Vitamin B12 levels In the patients' serum suffering from mild NCD is significantly lower than in patients' serum without NCD despite normal ranges of reference. Folic acid level has been proven to be similar in patients with and whitout mild NCD. There is also correlation between level of vitamin B12 and level of folic acid. It is suggested to conduct more numerous research in order to verify the reference values of vitamin B12 in this age group. Lower values of this vitamin within the normal reference range may indicate the beginning of mild NCD. The implementation of vitamin B12 supplementation in older people seems to be correct because it may delay the occurrence of neurocognitive function disorders.

Analysis of the credibility of neuropsychological screening tests in the detection of mild neurocognitive disorders in the elderly

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Introduction

Screening tests are a key step in diagnosis of dementia and should therefore be highly sensitive to the detection of mild NCD. Currently, the Mini Mental State Examination (MMSE) is the most commonly used screening method in clinical practice. However, many researchers consider MMSE insufficiently precise in detecting early cognitive impairment. On the other hand, the Montreal Cognitive Assessment (MoCA) is a newer and less well – known screening tool, which according to the authors is devoid of the limitations of MMSE.

Purpose

The aim of the study was to analyze the reliability of the Polish version of MoCA 7.2 vs Polish version of MMSE in the detecting of mild NCD among people over 60 years of age.

Material and methods

The study was conducted at The Clinic and Department of Geriatrics, Ludwik Rydygier Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University.Duration of the study: September 2014 – March 2017. The study involved 281 participants, 91 were assigned to the group without NCD and 190 to the group with mild NCD. Recruitment for both groups took place on the basis of specific inclusion and exclusion criteria. The identification of mild NCDs was based on DSM – 5 diagnostic criteria. Based on the participant's overall assessment, the therapeutic team determined the diagnosis of mild NCD or without NCD. Then, an independent researcher conducted the MoCA 7.2 test to the participants without knowing the diagnosis of the therapeutic team. The final stage of the study is a detailed analysis of the disease history of all participants.

Results

The mean MoCA 7.2 and MMSE scores showed a statistically significant difference between the groups with and without mild NCD ($p < 0.001$). In the analysis of the ROC curve of the MoCA 7.2 results, the area under the curve (AUC) was 0.925 ($p < 0.001$). The optimal cut – off point for mild NCD was 23/24 points with sensitivity and specificity 83.2% and 79.1%. The recommended cut – off 25/26 point had a sensitivity of 98.7% and specificity of 64.8%. In the ROC curve analysis of MMSE results, the area under the curve (AUC) was 0.847 ($p < 0.001$). The optimal cut – off point for mild NCD was 27/28 points. with sensitivity and specificity of 75.8% and 66.7%. Recommended cut – off 26/27 point achieved sensitivity and specificity at 43.4% and 64.8%, respectively. The difference between AUC MoCA 7.2 and MMSE was 0.078 ($p = 0.036$).

Conclusions

MoCA 7.2 with more sensitivity detects mil NCD than MMSE. It is proposed
to use the cut – off point for MoCA 23/24 points, which is characterized by a higher sensitivity than the recommended cut – off point of 25/26 points. In turn, for the MMSE, the recommended cut - off point is 27/28, which gave more diagnostic accuracy than the recommended 27/26 point. Therefore, MoCA 7.2 can be used by primary health services and in geriatric practice
as a screening tool for detecting early cognitive disorders.

Biodentine – is it HARD to manage?

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Introduction

Over the past two decades we observe a growing interest in a group of dental materials named bioceramics. They are used for covering defects of hard tissues of a tooth because of their significant composition and good sealing ability. Biodentine (Septodont, France), a relatively new tricalcium silicate cement, is claimed to be able to fully replace crown as well as root dentine whenever damaged – it is commonly used in perforation closure procedures in endodontics. However, the treatment outcome depends on proper cement management. Once placed, it needs time to "mature" so that it can withstand the mastication forces and resist all factors during treatment continuation. Therefore, from the clinicians' perspective the setting time and proper handling of the material play a key role in the success of endodontic therapy.

Aim of the study

The aim of the study was to analyze the clinicians' opinion on Biodentine handling instructions and on the material management during their daily practice. On the basis of the obtained data the following objective was to evaluate the binding and hardening time of the Biodentine cement in order to prepare a specific protocol for its usage during endodontic treatment.

Materials and methods

A survey was conducted and opinions of 174 clinicians on Biodentine management during endodontic procedures were analyzed. Subsequently, the Vicat consistency test was performed in order to verify the setting time of the cement and confront it with the information given by the manufacturer.

Results

43% of respondents using Biodentine in their daily practice assessed the setting time as long or definitively too long. As much as one fifth of surveyed dentists continues dental procedures without waiting until the material sets. The results of Vicat consistency test show two phases of cement binding process. The first one, dynamic, lasts until the 14th minute after mixing of the material. The second one lasts over two hours and can be described as "maturation" of Biodentine.

Conclusions

Complains of many clinicians about long setting time of the tricalcium silicate cement are justifiable. The hardening time given by the manufacturer can be related with the first phase of binding process assessed in Vicat apparatus. It is long in reference with the duration of the dental appointment. That is why some dentists divide the treatment with Biodentine into two separate visits, which is advisable because of the existence of the second binding phase. After 15 minutes Biodentine is not yet ready to fully withstand the forces implied by the continuation of the endodontic treatment. The change in clinicians' approach is therefore needed.

The influence of Cilostazol on cerebral and peripheral hemodynamics in patients with generalized atherosclerosis

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Introduction

The problem of generalized atherosclerosis is one of the most complex and insufficiently explored now a day`s. When at the same time atherosclerotic damage of coronary, cerebral and peripheral arteries, it is not clear how to improve blood-flow volume (BFV) to the brain arteries or arteries of the lower extremities without increasing myocardial ischemia.

Aim of the study

To provide optimal improvement of blood supply to the brain and peripheral arteries while maintaining myocardial function without increasing the frequency of myocardial ischemia episodes.

Material and methods

We conducted a progressive observational study in an internal medicine department. Men 63,4+8,6 years old subjects with a history of ischemic stroke, stable ischemic heart disease Class I-II NYHA and peripheral artery disease were included in this analysis. The patients were divided into 2 groups: I - (n=16) were given acetylsalicylic acid (ASA) orally (75 mg X 1 daily) for 1 month, group II (n=16) were given Cilostazol (C) orally (50 mg X 2) for 1 month. Electrocardiographic (ECG) recording with 24-hour Holter monitor was used to detect episodes of ischemia. Ultrasound of internal carotid artery (ICA) and a.dorsalis pedis were performed to identify BFV.

Results

In patients with generalized atherosclerosis BFV in the ICA on the side of the injury was 18.8% less, compared to the control group (n=12) and it was 215.2 + 8.3 ml / min, and on the intact side - 258.3 + 9.4. BFV on a.dorsalis pedis was 29.2% less compared to the control group, and it was 56.4 + 7.5 ml / min. The number of episodes of myocardial ischemia in the form of ST-segment depression during the day was 6.4 + 0.4.

In group I, under the influence of ASA, the BFV in the ICA on the affected side increased by 9.7% and it was 236.3+ 11.5 ml / min ($p > 0.05$), on the intact side no significant changes were observed 265.6 + 10.2 ml / min. The BFV on a.dorsalis pedis increased by 14% and it was 64.5 + 5.7 ml / min ($p < 0.1$). The number of ischemic episodes decreased to 4,2 + 0.1, ($p > 0.05$).

In group II, patients under the influence of C, the BFV in the ICA on the affected side statistically significant increased by 12% and it was 241.2 + 10.1 ml / min, ($p < 0.05$), on the intact side 272.1 + 8.3 ml / min. The BFV on a.dorsalis pedis also statistically significant increased by 16.7% and it was 65.3 + 4.8, ($p<0.05$). The number of ischemic episodes statistically significant decreased to 2.2 + 0.2, ($p<0.05$).

Conclusions

The improvement of blood supply to the brain, peripheral arteries were observed in patients with generalized atherosclerosis, under the influence of Cilostazol, while saving myocardial functions with the help of reducing the frequency of manifestations of myocardial ischemia.

Initial choice of non-invasive ventilation mode in patients with COPD exacerbation

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Introduction

Noninvasive ventilatory support is a widely accepted practice for COPD exacerbation with acute respiratory failure with good known results, but limited data available regarding choice of initial mode of ventilatory support in those patient

Aims and objectives

To compare outcomes of ICU treatment of patients with COPD exacerbation regarding to initial choice of noninvasive ventilatory support

Methods

We conducted a prospective randomised open-lable clinical study in mixed ICU from 08.2017 to 10.2018. We included adult patients with acute respiratory failure most likely related to exacerbation of COPD with PaCO2>50 mmHg OR pH <7,2, awake and collaborative, able to secure airways. We randomised patients into CPAP/PSV group (initial settings: PEEP 5 cm H2O, PSV 10 cm H2O with further adjustment) or BiLevel group (Plow 5 ch H2O, Phigh 15 cm H20, f=16\minute with further adjustment). We assesed mortality, intubation rate, arterial blood gas dynamics.

Results

58 patients were included into trial (28 in CPAP group, 30 in BiLevel group). Groups not varied significanly in age, gender and initial PaCO2 level. 1 patients died in CPAP group and 2 in BiLevel group p=0,408). 8 (28,57%) patients in CPAP and 10 (33,3%) in BiLevel group were intubated (p=0,371). In subgroup of patients with initial repsiratory rate <12 (16 in CPAP group and 18 in BiLevel group) intubation rates were 56,25% and 27,78 respectively (p=0,00384)

Conclusion

No significant difference in mortality and intubation rate was found. In subgroup analysis, patients with low initial respiratory rate (<12) may benefit from initial BiLevel ventilation.

Application of Ventricular Activation Time maps as an early diagnosis method of intraventricular conduction disorders in children with chronic kidney disease treated conservatively

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Introduction

Children with chronic kidney disease (CKD) are exposed to significantly higher risk of developing organ complications in compare with population of healthy children. Cardiovascular disease accounts for majority of deaths in this group. Clinical observations indicate importance of predicting course of the disease and arranging adequate treatment. Body surface potential mapping (BSPM) is a non-invasive method that allows early detection of alternations in the spread of impulse within the human heart. Specifically ventricular activation time (VAT) map enable to precisely localize the area of disturbed conduction. This method is proven to be noticeably more sensitive than standard 12-lead ECG.

Aim of study

Intent of the study was analysis of changes in intraventricular conduction based on the maps of electric potential distribution on the heart surface in children with CKD treated conservatively.

Material and methods

Recruited groups of 22 children with CKD treated conservatively and 29 healthy children were examined. Both groups underwent the necessary biochemical tests, classic ECG and transthoracic echocardiogram. For every patient 87 electrocardiographic records with use of the Japanese FUKUDA DENSHI 7100 apparatus were registered. VAT isochron maps reflecting the spread patterns of intraventricular excitation were created for children with CKD and control group composed of healthy subjects.

Results

Statistically significant differences in VAT maps distribution between study and control group were revealed. Abnormalities specific to left anterior fascicular block (LAFB) occurred in patients with CKD. LAFB was diagnosed in 18 of 22 patients in group with kidney disease. Changes were found mainly in the front and back parts of the chest and were not detected by standard ECG record.

Conclusions

In the examined group of patients disturbance of VAT was caused by prolonged course of CKD. The BSPM method and analysis of isochron maps allowed very early diagnostic of cardiac conduction system disorders and administration of appropriate therapeutic treatment.

Assessment of ventricular conduction disorders in patients with left anterior fascicle block and bifascicular block.

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Introduction

Ventricular part of the heart's conduction system consists of the bundle of His that splits into right and left branches, which in turn end with respective Purkinje fibres. Left branch divides into two or three smaller fascicles on its initial section. Significant reduction of impulse conduction velocity or its complete interruption within anterior fascicle is called left anterior fascicle block (LAFB). It is often accompanied by right bundle branch block (RBBB) as both these structures are supplied in blood by one artery. Making a diagnosis of LAFB and differentiating it from incomplete left bundle branch block (ILBBB) is usually a clinical problem. Body surface potential mapping (BSPM) is a highly accurate method for evaluation of electrical conduction in the heart. Ventricular activation time maps (VAT) obtained thanks to this technique allow us to precisely diagnose described abnormalities.

Aim of the study

The aim of our research is to illustrate disorders of electrical conduction within the ventricular part of the heart's conduction system in patients with sole LAFB and LAFB combined with RBBB.

Material and methods

The study included the group of 30 patients, 14 of them with LAFB and 16 with bifascicular block (LAFB and RBBB) and 30 healthy people in the control group. 12-lead ECG, basic biochemistry tests, cardiac ultrasound and chest X-ray were performed in all patients. Electrocardiograms were recorded with Japanese Fukuda Denshi HPM-7100 system with 87 electrodes in the cylindrical setting. A computer program written in the Department of Pathophysiology at Wroclaw Medical University was used, for the purpose of processing these records and creating maps of isochrons.

Results

In 12 out of 14 patients with LAFB course of stimulus conduction was the same. For other 2 there were differences in its initial phase. There was no significant variation of isochrons patterns in the group of patients with bifascicular block. Comparison of isochron maps obtained fromboth these groups with the control group revealed statistically relevant differences.

Conclusions

Maps of isochrones received from multielectrode electrocardiograms illustrate in a highly precise way changes in the course of the stimulus propagation and values of ventricular activation times in patients with LAFB and LAFB combined with RBBB. Body surface potential mappingcan be used for diagnosing and classification of these disorders when 12-lead ECG does not provide sufficient information.

Evaluation of regenerative potential of patients with IgA nephropathy

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Introduction

IgA nephropathy (IgAN) is characterized by mesangial deposition of IgA complexes in the glomerulus and is recognized as the most frequent form of primary glomerulonephritis worldwide. IgAN is associated with renal degradation due to irreversible alternations causing glomerulosclerosis and interstitial fibrosis. Despite currently available therapies, progression to end-stage renal disease affects around 50% of patients. Therefore, there is a substantial need for better understanding of renal regenerative processes in the course of the IgAN

Aim of the study

In this study, we aimed to assess the frequencies of circulating stem and progenitor cells and distinct monocyte subsets in IgAN patients.

Peripheral blood was collected from 26 IgAN patients recruited from the Department of the Nephrology Medical University of Bialystok and 17 age-matched healthy donors. Frequencies of circulating VSELs, HSCs, EPCs, and monocytes were analyzed by using flow cytometry. Next, plasma levels of soluble form of CD163 (sCD163), stromal-derived factor-1 (SDF-1), angiopoietin 1 (Ang-1) and angiopoietin 2 (Ang-2) were determined by using ELISA.

We observed elevated numbers of VSELs in the IgA nephropathy patients when compared to healthy donors. Surprisingly we found no differences in circulating HSCs and EPCs numbers. Moreover, we observed elevated numbers of intermediate (CD14++CD16+) monocytes, while no differences in classical (CD14++CD16-) and non-classical (CD14+CD16++) monocytes were observed. Moreover, we found no differences in the plasma levels of all analyzed chemotactic factors for VSELs and proangiogenic intermediate monocytes. Importantly, however, we observed elevated levels of sCD163 in IgAN patients when compared to healthy donors.

Conclusions

We demonstrated here that kidney degeneration observed in the course of IgA nephropathy activate regenerative mechanisms associated with selective mobilization of VSELs and induction of monocyte maturation towards cells with immune regulatory activities. Our data contribute to a better understanding of the role of regulatory and regenerative mechanisms in IgAN.

Acknowledgments:

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Overweight among children after antineoplastic treatment – general or diagnosis-dependent side effect?

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Introduction

Overweight and obesity are well-known side effects of anti-cancer therapy in children. Steroids and limitation of physical activity are listed among many complex causes of these complications.

Purpose

The aim of the study was to estimate prevalence of overweight among patients after completed antineoplastic treatment at the Department of Pediatrics, Oncology and Hematology, Medical University of Białystok.

Material and methods

Study group consisted of 137 cancer survivors - children and young adults (male: 80; female: 57) between 4 and 26.5 year of age (mean age 14.08) treated for neoplastic diseases. The group of survivors was divided into 3 smaller groups regarding diagnosis: patients treated for acute leukemias (n=75), lymphomas (n=19) and solid tumors (n=43). All mentioned groups were compared with the control group consisting of 73 participants (mean age 12.43), including cancer survivors' healthy siblings and children hospitalized with other than neoplasm diagnosis. Measurements were carried out with stadiometer and InBody370 analyzer, using bioimpedance method. Following parameters were assessed: body mass index (BMI), waist-hip ratio (WHR) and percentage of body fat (PBF). To determine statistical significance Mann-Whitney U Test was applied at significance level of 0.05.

Results

The study revealed that in the group of acute leukemias survivors there was a statistically significant increase in all measured parameters comparing with the control group. Increased BMI was observed in 37.33% (16.44% in control group, p=0.02088), elevated WHR in 34.67% (12.33% in control group, p=0.02034) and PBF in 66.67% (30.14% in control group, p=0.0002). The comparison between groups of lymphomas or solid tumors and control group did not show significant increase in measured parameters; group of lymphomas – increase in BMI (21.05%, p=0.50926), WHR (26.32%, p=0.57548) and PBF (26.32%, p=0.75656); group of solid tumors – increase in BMI (14%, p=0.81034), WHR (20.93%, p=0.37346) and PBF (34.88%, p=0.95216). Study showed also that in the whole group of survivors there was statistically significant increase in WHR (29.2%, p=0.0491) and PBF (51.09%, p=0.02382) comparing with control group, despite the lack of difference in BMI increase (27.74%,p=0.13362).

Conslusions

The results of the study confirmed more frequent prevalence of overweight among childhood cancer survivors. The problem of fat deposition was highlighted in examined group of acute leukemias survivors. Nonetheless, this tendency was not emphasized in the group of lymphomas and solid tumors survivors. Measured parameters may be considered as markers of abdominal obesity in children after anti-cancer treatment. Analysis should be continued to investigate if overweight varies depending on time that passed from the treatment cessation. Early identification of patients at the highest risk of overweight may lead to prevent long-term complications of this condition.

Influence of hypoxemia on changes of HIF-1alpha expression among obstructive sleep apnea patients

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Introduction

Obstructive sleep apnea (OSA) is a chronic condition that is characterised by recurrent pauses in breathing during sleep, caused by collapse of upper airway. One of typical complications of OSA is recurrent hypoxia. The main factor responsible for oxygen metabolism homeostasis is hypoxia inducible factor (HIF). Subunit HIF-1alpha is oxygen sensitive, in normoxia it is subject to degradation, while it stabilizes in hypoxic environment.

Aim

The aim of the study was the investigation of HIF-1alpha serum protein level and mRNA HIF-1alpha expression in OSA patients and healthy control group including assessment of the effect of one night CPAP (continuous positive air pressure) therapy. Additionally, diagnostic value of HIF-1alpha serum protein level in OSA diagnosis was assessed.

Materials and Methods

Eighty-four individuals were enrolled in the study. The study was divided into 2 parts: cross-sectional (n=84) and observational (n=16). In cross-sectional part, all patients underwent polysomnography (PSG) examination and based on the results were divided into two groups: OSA group (n=60) and control group (n=24). Peripheral blood was collected in the evening before and in the morning after the PSG. Sixteen patients, who qualified for CPAP therapy, were included in observational study, in which they underwent one night CPAP treatment. Similarly, blood samples were collected as in cross-sectional part of the study. HIF-1alpha serum protein level was measured using ELISA, while HIF-1alpha mRNA expression was assessed by real-time PCR.

Results

In cross sectional part of the study a median of HIF-1alpha serum protein concentration was significantly higher in OSA patients compared to control group, both in the evening (1490,1 vs. 727 pg/ml; p<0,001), and in the morning (1368,9 vs. 702,1 pg/ml; p<0,001) blood samples. There was no difference between evening and morning HIF-1alpha serum protein level. No differences were observed in HIF-1alpha mRNA expression between OSA group and control group, both in the evening (3,16 vs. 2,00 pg/ml; p=0,381), and in the morning (2,21 vs. 2,78 pg/ml; p=0,414) blood samples. There was no difference between evening and morning HIF-1alpha mRNA expression.

Evening and morning HIF-1alpha serum protein level correlated with severity of the disorder (respectively r=0,375, p<0,001and r=0,362, p<0,001). Additionally, evening and morning HIF-1alpha serum protein level correlated with number of desaturation during sleep (respectively r=0,384, p<0,001and r=0,433, p<0,001) and with minimal saturation during PSG examination (respectively r=-0,297, p=0,006 and r=-0,250, p=0,022).

Area under the curve for morning HIF-1alpha serum protein level, as a diagnostic factor for OSA was 0,841 (p<0,001). Based on Youden index cut off point for morning HIF-1alpha serum

protein levelwas set at 1055,6 pg/ml, and had following predictive parameters: sensitivity 80%, specificity 83%, PPV 92% and NPV 63%.

In observational part of the study, no differences were observed between evening and morning HIF-1alpha serum protein level (986,6 vs.1151,8 pg/ml; p=0,352), and between evening and morning HIF-1alpha mRNA expression (3,35vs. 4,20 pg/ml; p=0,733) following one night CPAP treatment.

Conclusions

Differences in HIF-1alpha serum protein level between OSA and control group were observed, but were not present in HIF-1alpha mRNA expression. Furthermore, there was a positive correlation between OSA severity and HIF-1alpha serum protein level, but not HIF-1alpha mRNA expression. HIF-1alpha serum protein level might be a potential diagnostic marker in OSA diagnosis. One night CPAP treatment does not influence neither HIF-1alpha serum protein level, nor HIF-1alpha mRNA expression.

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Pharmacokinetics of sugammadex doses of 0,5 mg/kg given for reversal of rocuronium-induced blockade in pediatric patients

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Introduction

Reversal agents are used to terminating the action of muscle relaxants. Sugammadex, a modified γ-cyclodextrin, is the first selective relaxant binding agent. It does not interact with cholinergic mechanisms to elicit reversal. Instead, it is a selective relaxant binding agent and acts by forming a 1:1 complex with steroidal nondepolarizing neuromuscular blockers in the plasma, lowering the effective concentration available at the receptor.

Aim of the study

Sugammadex rapidly reverses moderate and profound rocuronium- or vecuronium-induced neuromuscular blockade at doses of 4 mg/kg and 2 mg/kg, respectively. There is no data about its effectiveness at a dose of 0,5 mg/kg in children. This study evaluated the pharmacokinetics of sugammadex in subjects at a dose of 0,5 mg/kg.

Material and methods

Ten patients (aged 3 - 9) undergoing elective surgery procedures with a standardized sevoflurane-fentanil-rocuronium (rocuronium dose 0,6 mg/kg) anesthetic technique received sugammadex at doses of 0,5 mg/kg and 2 mg/kg (control group) for reversal of neuromuscular blockade. During the operation, blood samples were collected at the time-determined points after the rocuronium intubation dose - 2 and 15 minutes after rocuronium administration, just before sugammadex and 2, 5, 15, 60 minutes and 6 hours after sugammadex. The concentration of sugammadex was determined by HPLC-MS/MS. The analytical procedure was validated, and all steps of the validation confirmed that the applied analytical procedure was suitable for the intended purpose. Pharmacokinetic calculations were performed in Kinetica 5.1. We also measured the time from sugammadex administration to the full restoration of muscle function.

Results

Pharmacokinetic data were obtained from 10 subjects. Mean sugammadex AUC in subjects was about 4 times lower than in the control group. Lower clearance values were observed in patients received sugammadex dose of 0,5 mg/kg. Mean Cmax was about 4 times lower in a group that received a dose of 0,5 mg/kg. Mean time needed to full restoration of muscle function was over 10 minutes in the study group.

Conclusions

The findings indicate sugammadex 0,5 mg/kg is not effective for the reversal of rocuronium-induced neuromuscular blockade in pediatric patients.

PSYCHIATRY AND PSYCHOLOGY

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The use of rTMS in treatment of patients with Alzheimer's disease.

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Introduction

Alzheimer' s disease (AD) belongs to progressive neurodegenerative disorders and is the most common cause of dementia in the elderly population. Currently about 47.5 million people worldwide suffer from AD, only in Poland there are 300 000 patients.Medications used in AD were introduced in the 1990s, however, despite their use, patients experience progression of the disease leading to a complete lack of autonomy and death. Therefore, a continuous need to investigate novel therapeutic options exists. In the last few years, studies on the effectiveness of repetitive transcranial magnetic stimulation (rTMS) in the treatment of AD were conducted. rTMS systems generate a strong magnetic field which penetrates through skull bones into the cerebral cortex andstimulates neurons with their synapses. Recent studies related to rTMS use in AD have promising results.

Aim of the study

Preliminary analysis and assessment of the effectiveness and safety of rTMS in the treatment of patients with a diagnosis of dementia due to Alzheimer's disease.

Material and methods:

The group of 15 patients with a diagnosis of AD (median age 75 years, 8 women- 53,5% and 7 men-46,5%) were evaluated using ADAS-Cog, MMSE, NPI, EQ scales before and after the rTMS treatment. Conditions of the procedure: frequency 5Hz, sequences 10sec. 1800 impulses per session. Every patient underwent 20 sessions in the period of 4 weeks. Exclusion criteria: Epilepsy or a history of epileptic seizures, pacemaker, metal implants of CNS.

Results

Following the rTMS procedure, three clinical scores changed over time, showing a statistically significant improvement (MMSE score: 14 vs 18 points, before and after therapy, respectively, p =0,009; ADAS-Cog: 48 vs 45 points; p=0,045; NPI: 32 vs 9 points, p=0,0007).

Conclusions

According to present findings, rTMS therapy has a positive impact on cognitive functions of patients with AD, however, the most significant effects are noticed in behavioral functioning (assessed with NPI). Current findings indicate that rTMS has potential to be effective and even breakthrough therapy for AD patients. Of note, further studies with more considerable number of participants and the use of sham (placebo) procedure are needed.

The experience of pain in opioid dependent patients in methadone maintenance treatment.

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Introduction

Chronic pain affects 45-61% patients undergoing methadone maintenance treatment, which main aim is to decrease occurring withdrawal symptoms. Approximately 2.500 patients participate in this program in Poland, making up about 15% of all opioid-dependent individuals. Chronic pain is said to affect accurate treatment and suicidal behaviors and to be connected with history of violence in childhood.

Aim of the study

The main aim of this study was to evaluate the incidence of pain among methadone maintenance treatment patients and the relationship between its presence and patients' mental and somatic health as well as their social and professional functioning.

Material and methods:

The study was conducted on a group of 237 methadone maintenance treatment patients. They were given a survey containing: Brief Pain Inventory (BPI), Short Form (36) Health Survey (SF36), Suicidal Intent Scale (SIS), Beck's Scale for Suicidal Ideation (BSS), Michigan Alcohol Screening Test (MAST), Barratt Impulsiveness Scale (BIS-11), as well as questions about suicidal attempts, legal issues, and socioeconomic status. Chi-square and Mann-Whitney U tests were applied to investigate statistical significant differences between those suffering and free form the pain according to BPI ($p \leq 0.05$).

Results

54.9% of the patients stated being in pain, even though only 25.8% suffered from somatic disorders. What is more, 70.9% of them have not taken any medications (including analgesics). We reported statistically significant correlation between being in pain and worse physical functioning ($p=0.0001$), role limitations due to physical health ($p<0.0001$) and due to emotional problems ($p=0.042$) according to SF36. We also found that patients in pain achieved higher results in BSS ($p=0.005$) and SIS ($p=0.0445$). They also were more likely to have attempted suicide ($p=0.003$) and to develop alcohol addiction ($p=0.051$). They more frequently experienced violence to the point of fear for their life before turning 18 ($p<0.001$). On the contrary, there was no correlation between experiencing pain and age, sex, education, impulsiveness, social status and legal status.

Conclusions

Our results meet those of other authors especially considering child abuse, poorer quality of life and inadequate analgesia experienced by patients with pain. This implies an increased need for routine assessment and accurate treatment of pain. The positive correlation of pain and violence experienced at youth implies a necessity for taking action against domestic violence.

Glycemic control correlation with Problem areas in diabetes (PAID) scale and psychosocial factors in adolescent (11 – 18 years) patients with type 1 or 2 diabetes mellitus.

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Introduction

According to Latvian Disease Prophylaxis and Control center there were registered 91 571 patients with diabetes mellitus(DM) in 2017. 682 out of these patients were less than 19 years old. Problem areas in diabetes (PAID) is a 20 item self-report questionnaire that assesses a range of emotional problems related to having type 1 or type 2 diabetes. Previous research has shown that the PAID is a clinically relevant and psychometrically sound instrument (Welch, Weinger, Anderson, Polonsky (2003)). Diabetes specific stressors were found to be associated with less adequate self-care and impaired glycemic control (Peyrot, Rubin, Lauritzen, Snoek, Matthews, Skovlund (2005)).

Aim of the study

Evaluate the association of PAID score with HbA1c(%), Hypoglycemia (times/last week) for adolescents (11 – 18 years old) with type 1 or 2 diabetes mellitus. Evaluate the relation of HbA1c(%) with social factors (number of siblings, times of school change, etc.)

Material and methods:

This is a cross-sectional study including 49 adolescent patients (11-18 years old), diagnosed with type 1 or type 2 diabetes mellitus(DM), in a single university hospital (2018-2019). Patients were given anonymous PAID questionnaire that was translatet in Latvian and Russian language. To evaluate glycemic control of participants and collect information of social factors anonymous questionnaire of 12 additional questions was designed. Descriptive statistical analysis and Spearman rank correlation was used to evaluate the results.

Results

There were 48 patients diagnosed type 1DM and 1 with type 2DM. The mean age 13.98 ± 2.17 (mean ± SD). Diabetes duration 4.93±4.03 years, 53.1% female and 46.9% male. Glycemic control HbA1c% 11.07 % ± 4.72, Hypoglycemia (times/last week) 2.51 ± 1.70. PAID score was 21.9 ± 13.7. Association between PAID score and HbA1c(%) was not found (rs= - 0.111; p=0.447). Relation between PAID score and Hypoglycemia (times/last week) was found (rs= 0.338; p= 0.047). Association between HbA1c(%) and the number of siblings was found (rs= 0.285; p= 0.048). None of the siblings have been diagnosed with DM. Relation of HbA1c(%) and the number of times patient has changed schools was found (rs= 0.408; p= 0.004).

Conclusions

Relation between PAID score and HbA1c(%) levels wasn't found. Association between hypoglycaemia times per last week and PAID score was found indicating that patients who had more hypoglycaemia episodes during last week scored higher points in PAID scale. Relation of HbA1c(%) and the number of times patient has changed schools was found showing that patients who had changed schools more times had higher levels of HbA1c(%). Association of HbA1c(%) and the number of siblings was found indicating that patients with more siblings who have not been diagnosed with DM had higher levels of HbA1c(%)

Can we use facial emotion recognition tests to detect mental illness?

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Introduction

Ability to recognize mimic expression is important to socialize with other people. Due to studies almost two-third of communication among human is by nonverbal components and facial emotion recognition (FER) is one of the main part. Almost two-third of communication is represented by nonverbal components and emotions are a key factor. Ability to understand body language is important to socialize with other people. Facial emotion recognition (FER) is an automatic process essential for proper interpersonal communication.

Aim of the study

The aim of our study was to examine the ability of psychiatric patients to recognize facial emotions. We compared differences between FER of patients with different mental disorders.

Material and methods:

We examined 47 psychiatric patients (hospitalized 22.03.2018-24.11.2018) from open and locked wards in hospital in Katowice-Ochojec. We included all patients who gave informed consent. We used Emotional Intelligence Scale-Faces (SIE-T) test. Overall score was counted by a competent psychologist.

Results

Psychiatric patients in comparison to normal population have worse ability to recognize mimic expression. Difference is statistically significant with $p < 0.001$.

Conclusions

The abnormalities of FER could be used during examination to detect higher risk of mental disorders or as a screening test to detect disease on early stage. However, the thorough studies should be carried out.

Eating disorders and alcohol addiction. Connections and Implications

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Introduction

Nearly half of the individuals with eating disorders abuse alcohol or other substances, in comparison with approximately 10% of the general population, however reasons for this comorbidity are not fully established.

Aim of the study

This study aims to address the prevalence and etiology of this comorbidity in women.

Material and methods:

An anonymous two-part questioner was answered by 86 female patients treated in Vilnius University Eating Disorder Centre. First part of the questioner was based on Michigan Alcohol Screening Test and was aimed to diagnose alcohol dependency and its implication on patient's physical, psychological health and socioeconomic status. Second part of the questioner was based on numerous literature and research articles and was aimed to understand the reason behind their substance abuse. Results were analysed using IBM SPSS.

Results

21% of patients reported excessive alcohol use, which undermined their health: 16% of women felt anxious about alcohol use, 9% were previously hospitalized due to its toxic effect, 12% reported abstinence symptoms, only 2% looked for professional help. Regarding socioeconomic implications: 14% have abandoned their duties at work, school or family, 16% reported having difficulties in interpersonal relationships, 21% had a large conflict in the past year, 5% had financial struggles due to alcohol use.

Analysis of the motives behind alcohol abuse disclosed, that 72% of patients had been using alcohol for the following reasons: to reduce the pathological hunger sensation (32%), to reduce anxiety after eating (37%), to relax before eating (14%), to ease vomiting (14%), to hide the reason for vomiting from others (7%), to substitute food with alcohol (19%). 44% of the patients reported to reduce their daily calorie intake before alcohol consumption.

Conclusions

Based on this questioner 17 patients could be suspected of alcohol addiction and the overall comorbidity of eating disorders and alcohol abuse reaches 21%. Most of the patients (72%) have used alcohol to reduce anxiety or pathological hunger, or to induce vomiting. Some of these patients reduce their calorie intake before using alcohol, which complicates the treatment and it's outcomes.

Usage patterns of Instagram and it's relations with anxiety to experience negative judgement of physical appearance

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Introduction

Nowadays increased usage of Instagram among young adults is often said to reinforce the apprehension about body image, which is an important risk factor for eating disorder development. However there's a lack of researches focusing on how the peculiarities of usage of Instagram are related to the fear of experiencing negative judgement of one's physical appearance.

Objective

To compare usage features of Instagram among young adults and to find it's relations with anxiety to experience negative judgement of one's physical appearance.

Methods

101 young adults (age M = 17,89, SD = 0,53), 43 female and 58 male participants took part in the study. Participants filled Instagram Intensity Scale (Cronbach α = 0,915), Passive and Active Use Instagram Questionnaire (Cronbach α = 0,922 for active use scale, Cronbach α = 0,859 for passive use scale) and Fear of Negative Appearance Evaluation Scale (Cronbach α = 0,912). Nonparametric tests (Mann-Whitney U test and Spearman correlation) were applied.

Results

Comparing with male participants, female participants have been found to have greater engagement in Instagram activities (mean rank 66,21 vs. 39,72, U=593,0, Z=-4,519, p<0,001). They have spent more time on Instagram (mean rank 69,78 vs. 37,08, U=439,0, Z=-5,692, p<0,001). The active usage of this application by female participants has been more intense (mean rank 66,76 vs. 39,32, U=569,5, Z=4,684, p<0,001) as well as the passive usage (mean rank 64,62 vs. 40,91, U=661,5, Z=-4,049, p<0,001). Females have had greater number of followers on Instagram than males (mean rank 70,17 vs. 36,78, U=422,5, Z=-5,692, p<0,001). Higher level of fear to experience negative judgement of one's appearance have been related to greater engagement in Instagram (rs = 0,242, p < 0,05) and with active (rs=0,241, p<0,05) usage as well as passive usage of the application (rs=0,276, p<0,01). Meanwhile statistically significant relation between the level of anxiety and time spent on Instagram and the number followers have not been found.

Conclusion

The data suggested that the engagement of young females tend to be greater in Instagram activities compared to males. Obligation in Instagram usage was related with anxiety to experience negative judgement of one's physical appearance. Nevertheless more in depth research to provide casual relations is needed

Correlation between selected factors and emotional intelligence

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Introduction

Internet addiction is characterized by excessive or poorly controlled preoccupations, urges or behaviours regarding computer use and internet access that lead to impairment or distress. Excessive use of Internet have been positively correlated with phenomenons such as depression symptoms and social phobia. Emotional intelligence (EI) is the ability to understand and recognise our and other people's emotional states, the capability of individuals to discern between different feelings and label them appropriately, use them to guide thinking and behaviour as well as manage and adjust emotions to adapt to environments.

Aim of the study

The purpose of the study was to find correlation between emotional intelligence and the way the Internet is used by high school students.

Material and methods:

1450 high school students from Katowice, at the aged from 18 to 21 years old took part in an anonymous survey consisting of Internet Addiction Test, The Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF) and authorial test giving information about amount of time spend by student on specific Internet activity.

Results

There is statistically significant correlation between TEIQue-SF and Internet Addiction Test score ($P < 0.0001$, $r = -0.3308$), time spend on the Internet on the day of school education ($p < 0.0001$, $r = -0.162$).

Conclusions

Internet Addiction symptoms and higher amount of hours spend on the Internet were positively correlated with lower EI test results

Perspectives of adolescent patients and medical students on student involvement in the care of patients of the pediatric psychiatry ward

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Introduction

Involvement in patient care is a core component of the education of future health care professionals. The pediatric psychiatry ward setting may be especially challenging in this regard, both for the patients and the students who interview patients and take their medical history during classes.

Aim of the study

We aimed to explore the patients' and students' perspectives on student involvement in the care of patients of the pediatric psychiatry ward.

Material and methods:

We surveyed 19 patients of the pediatric psychiatry ward and 117 medical students (years III-VI) of the Medical University of Lodz. Both questionnaires included statements about student involvement, attitudes towards it and the details of student-patient interactions. We also inquired if the students planned on specializing in psychiatry. Finally, we asked both groups to provide suggestions for what, in their opinion, would make their interactions more comfortable.

Results

Among the surveyed patients there were 14 females and 5 males with mean age 15.0±12.3 years. Most patients agreed to participate in classes for the following reasons: they wanted to help students(63,2%), they were curious (52,6%), their doctor asked them to (52,6%). Most (73.7%) stated that they felt comfortable while talking to students and were provided with adequate privacy during the talk (78,9%). Over half (57.9%) felt that the talk had a positive impact on their well-being. Interestingly, patients who reported that a doctor was present while they talked to students also felt more comfortable during the meeting ($p=0.038$), felt that the meeting had a positive impact on their well-being ($p=0.019$) and stated that if they were to be hospitalized once more, they would prefer a ward where clinical classes take place ($p=0.001$). Among the surveyed students, 91 (63 female, 28 male) interviewed patients of the pediatric psychiatry ward during classes; 24 were from year III, 39 from year IV, 27 from year V and 1 from year VI. 29 (24.8%) students reported that a doctor or a nurse was present when they talked to patients; 18 (15.4%) that they talked to the patient alone and 44 (37.6%) that it was different every time. Those who interviewed the patient alone were also less likely to prefer the doctor's presence during the conversation ($p<0.001$). Only 3 students reported the presence of other patients during the medical interview; those students were less likely to feel comfortable during the talk ($p=0.046$). Four students (3.4%) stated they were going to specialize in psychiatry; 40 (34.2%) were considering it, while 47 (40.2%) were not. Students who were considering psychiatry as a specialization felt more comfortable when talking to patients ($p=0.017$) and had a more positive perception of the patients ($p<0.001$).

Conclusions

The general attitude of the patients towards participation in clinical classes is positive. The presence of a doctor during the interview appears to be a positive factor for patient comfort.

PUBLIC HEALTH

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Colonoscopy as an important diagnostic test among the younger and older generation

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Introduction

Colonoscopy is an endoscopic examination used in the diagnosis and treatment of colorectal diseases: polyps, inflammatory diseases and malignancies. Detection of the above in preclinical phase increases chances of cure.

Aim of the study

The aim of study was to assess correlation between age, gender, level of education, positive family history, attitude towards colonoscopy and frequency of colonoscopy in patients with colorectal symptoms.

Material and methods:

An anonymous online survey consisting of 5 demographic and 10 closed questions related to colonoscopy was created and distributed through social media. 230 answers were collected. Statistical analysis was carried out using Statistica. Chi-square test was used to compare the relation between quality variables. When Shapiro-Wilk test showed an abnormal distribution of data, Kruskall-Wallis and Mann-Whitney tests were used. The results were statistically significant when $p<0.05$.

Results

Mean age of respondents was 25 years. 54.5% of women feared pain during colonoscopy, while 53.7% of men had no objections. Statistically significant higher age was found in people for whom conversation with a doctor about colonoscopy was not embarrassing ($p<0.01$) and in people who have had already undergone this examination ($p<0.001$). Undergoing colonoscopy was influenced by education ($p<0.001$) and the incidence of cancer in the family ($p<0.001$): 38.7% with higher education, 16.4% with negative and 41.46% with positive family history were performing colonoscopy. The most common cause of colonoscopy in young people was diarrhoea of unknown ethiology and constipation. 16.67% of respondents declared inflammatory bowel disease.

Conclusions

Colonoscopy is an important diagnostic test in younger and older people because of the range of diseases that can be diagnosed and treated simultaneously. Doctors should place emphasis on informing patients about the examination, how to prepare for it and how it will proceed due to fear of pain, especially among women

What high school students and university students of Rzeszow think about vaccinations - differences and similarities.

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Introduction

The discussion about the validity of vaccinations is getting louder and louder. Once, vaccinations saved lives, and today they have become the subject of much controversy. Therefore, it is necessary to analyze the causes of social phenomena that have occurred recently.

Aim of the study

The aim of the study was to check if they exist and what the differences in the opinions and attitudes of high school students and university students about vaccination result from.

Material and methods:

Cross-sectional research was carried out among 2343 high school students and university students of Rzeszów. The research tool was a voluntary and anonymous proprietary questionnaire containing 21 single-choice questions. The questionnaire checked knowledge and attitudes related to vaccinations.

Results

Results from 1973 respondents were received, which accounts for 84.12% of the total number of questionnaires distributed. Among the respondents, 46.59% were high school students, and 53.41% were university students. 71.80% of high school students are considered to be proponents of vaccination, compared to university students, of which 58.46% support vaccination. 8.07% more high school students than university students think that they should undergo obligatory and recommended vaccinations. In the last year, 70,91% of high school students and 47,99% of university students have been vaccinated. University Students significantly more often do not cling to the flu (77.38%), compared to high school students (68.43%). 18.10% of university students think that extra tack is unnecessary, while high school students have the same sentence of 7.35%.

The rest of results are under development.

Conclusions

Differences in opinions and knowledge about vaccination between high school students and university students are noticeable. They can result from the influence of parents, the media and information acquired during the course of teaching. This may be reflected in decisions made in the future.

Attitudes towards HPV vaccines in rural area in Poland

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Introduction

Despite documented effectiveness and safety of Human papilloma virus (HPV) vaccines, HPV vaccination rates in Poland remain relatively low.

Aim of the study

The aim of the study was to determine what types of beliefs and concerns are associated with HPV vaccines among population living in rural areas and searching for possibilities of increasing HPV vaccine coverage.

Material and methods:

It was a cross-sectional survey study performed by means of paper questionnaires distributed to mothers and female teachers during parents' gathering in a primary school in a rural area in Holy Cross Province. Altogether 170 surveys were collected.

Results

Mean age of surveyed women was 38 (between 19-63 years old). 10% of respondents had a history of abnormal Pap smear result, 2.3% were vaccinated against HPV, 7% were recommended by a physician to get vaccinated. 5% of surveyed women vaccinated their children against HPV. 10% were recommended by a physician to vaccinate their child. 83% of respondents believed that vaccination is an effective protection against HPV caused diseases. 43% answered that HPV vaccine leads to sexual promiscuousness among adolescents. 96% stated that HPV vaccine should be fully funded by state and in such condition – 86% would have vaccinated their daughter and 87% would have vaccinated their son. Most common reasons for not vaccinating were: no physician's recommendation (58%), unawareness of such possibility (44%), and price (26%).

Conclusions

Main barriers associated with low vaccination rate were unawareness of such possibility and high price. Increase in HPV vaccine coverage could be achieved by educating parents and organizing funding sources.

The use of Herbal Preparation and it effect on the pregnant woman

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Introduction

Herbal medicine, also called botanical medicine or phytomedicine, refers to using a plant's seeds, berries, roots, leaves, barks or flowers for medicinal purposes. Also plant derived materials or preparations perceived to have therapeutic benefits; they often contain raw or processed ingredients formone or more plants. The use of herb is common, particularly in areas where access to modern healthcare is not accessible or affordable.

Aim of the study

The main objective of the study is to determine perspectives of pregnant women on the use and efficacy of herbal preparation on their health and well-being of their pregnancy.

Material and methods:

Data was collected from fifty (50) respondents using a non-probability sampling technique, specifically; convenient sampling was used to select clients who accepted to participate in the study. Questionnaires with open and closed ended questions were also used. The questionnaire was made up of two sections as A and B

Section A focused on personal information and B was on perspectives of pregnant women on the use and efficacy of herbal preparation on their health and the well-being of their pregnancy. Some of the candidate completed the questionnaires themselves using english. The questionnaires were translated in the local dialect (Ga and Twi) to some candidates who could not read and write.

Results

From the field work, it's shows majority 76% of the respondents were between 21-40 years of age. It's very sad to note that as educated as they were, most of the respondent had very minimal knowledge about the dangers involved in herbal preparations. The risk of herbal use during pregnancy could result in dire consequences. About 35% did not know herbal preparation was dangerous whiles 33% knew about how dangerous herbal preparations could be to both mother and fetus. Only 4 of the respondents used herbal preparation because they could not afford conventional medicine and to them herbal preparation is (believed) to be more effective. 42% of the respondents indicated strong tendencies for use of herbal preparation when pregnant.

Conclusions

Certified herbalist association members must be trained through various workshops so that, they can refer pregnant women to hospitals in case an adverse reaction occurs and give them notes covering the specific herb used, time of serving the drug and duration of the drug used by the pregnant woman.

Analysis and assesment of children suffering from IBD's parents health and lifestyle knowledge.

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Introduction

Irritable bowel disease (IBD) is a group of digestive tract inflammatory diseases, which is more and more often diagnosed in children. Proper lifestyle and nutrition are key for maintaining their rapid growth and maturing.

Aim of the study

Polish parents of children suffering from IBD lifestyle knowledge, pro-health behaviour and knowledge sources assesment.

Material and methods:

32 parents took part in the study, 25 were qualified. Qualification citeria were the child's age (up to 20) and diagnosed and IBD (Crohn's disease or colitis ulcerosa). The study was conducted using an original questtionaire based on the current lifestyle guidelines (nutritional for people with IBD and phisical activity guidelines for children).

Results

56% of children were underweight or malnourished. Their diet was based on cooked vegetables and fruits (96%), refined grain products (groats, pasta, rice) (92%), wheat bread (88%), lean dairy (84%) and lean meat (88%), especially poultry. Most commont dietary mistakes were increased consumption of chocolate and sweets (84%), salt (80%) and fat meat products (60%). Most popular methods of cooking were boiling (55%), fat-free braising (14%) and roasting and baking (10%). 80% children did not smoke or consume alcohol. 60% did not use any special medical diet. Others used low-fibre (8%), lactose-free (8%), gluten free and vegetarian. 44% of parents declared lack, or could not determine the physical activity of their children. What should be alarming, 64% of parents based their knowledge on the information found online (groups, information gained from other people on chats), while 56% followed the doctor's advice or read popular science articles. Only 20% took advantage of nutritional consultations led by qualified dietitians. Most parents rated their lifestyle knowledge as 'good' or 'rather good' (48% and 36% respectively).

Conclusions

Parents' knowledge is unsatisfactory and its supplementation in some key aspects is advised. Further education is required, especially led by qualified medical professionals, highlighting the key role of the dietitian who should be present in every therapeutical team. More studies on the topic should be performed, as it is uncovered both in Poland and abroad.

Effects of the dance training program on cognitive abilities and physical functions in healthy older women.

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Introduction

Lack of physical activity as getting older is associated with deterioration of cognitive abilities and physical functions and higher fall risk. Serotonin (Ser) is one of the factors associated with various cognitive and emotional processes. Impairments in brain serotonin transmission observed in senescence may contribute to the development of depression and cognitive impairments in elderly. Several types of physical activities such as tai-chi or sensimotor training are considered as an effective in improving functional mobility, cognitive abilities and preventing fall risk in elderly. What is more, it has been previously shown that exercise could have the same effects as anti-depressant drugs - selective serotonin reuptake inhibitors (SSRI), which decrease plasma, serum and whole blood Ser concentration and improve cognitive abilities.

Aim of the study

The aim of our study was to demonstrate that 12 weeks of exercise would have a beneficial effect on cognitive abilities and the risk of falls. Moreover, the study determined the effect of dance training program on plasma serotonin concentration as a circulating marker of cognitive abilities.

Material and methods:

20 older women participated in the study. Participants were randomly divided into two groups: dance training group (DG; n=10) and control group (CG; n=10). The DG performed dance training combined with resistance exercises three times a week, for 12 weeks. Each training session lasted for 50 min. The CG did not perform any training intervention. Blood samples collection, functional tests (6 minute walk test; 6MWT and time up and go test; TUG) and cognitive test were performed before and after 12 weeks of training. Ser plasma concentration was determined by immunoenzymatic method.

Results

In the DG significant improvement in the distance performed during 6MWT and in walking speed was observed. Moreover, in this group, we noted improvement in TUG test time. In CG 6MWT distance and walking speed reminded unchanged while TUG test time has deteriorated. The 12 weeks of dance training program resulted in a significant reduction of omitted responses number, increased number of correct responses and total reactions. No significant changes were observed in the CG. Improvement in cognitive abilities and physical functions was associated with changes in Ser. We found a significant decrease in Ser plasma concentration in the DG when compared to the CG. Moreover, the negative correlation between Ser and the number of total reactions and positive correlation between TUG test time and Ser was observed.

Conclusions

Dance training programs might be considered as slowing down the progression of age-related cognitive decline and as a falls prevention method. Furthermore, dance-based exercise protocols

could be an effective new strategy of successful aging which is characterized by maintenance of physical and cognitive functions.

Impact of smog exposure on spirometry results in young males

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Introduction

Smog is a phenomenon that negatively impacts the respiratory system.

Aim of the study

The aim of the study was to determine whether exposure to smog, physical activity and lifestyle affects spirometry results and nitric oxide levels in exhaled air (FeNO).

Material and methods:

A questionnaire was distributed to 42 males aged 18-27 years (22.9±2.1). They were asked about how often they do sport, their preferred means of transport, time spent outside buildings, place of residence (distance to busy roads) and symptoms related to air pollution. After completion of the survey the same group was subjected to spirometry and FeNO tests.

Results

Smog was reported by all participants as an ongoing problem in their place of residence. However, the analysis has shown that while neither place of residence nor time spent inside/outside buildings were related to worsened spirometry results in the studied group, there was a link between living within a 100m radius of a busy road and increased FeNO values (p=.04). No correlation was found between doing sport and symptoms caused by smog. People exercising regularly declared to have better stamina (p=.002) and displayed higher values of certain spirometry results in comparison to people not doing sport (FEV1 104.5% vs 98.3%, p=.02, PEF 10.3l/s vs 9.3l/s, p=.02). The analysis of preferred means of transport has revealed that those commuting by bike had increased FeNO values in comparison to those choosing other means (36.7 vs 29.4 ppb, p=.04) .

Conclusions

Lifestyle-related smog exposure probably does not significantly impact spirometry results or FeNO values in young males. However, certain differences were found between people using different means of transport and living closer to busy roads.

Regular sport practices impact on nutritional habits and type of diet

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Introduction

The latest statistics of the Central Statistical Office in Poland show that the percentage of people practicing sport has increased, one fifth of whom is doing sport regularly. The sport-related health awareness has increased. An interest in a quality aspect of everyday diet and it self-regulation has also risen in recent years. Polish Public Opinion Research Centre statistics show increase in percentage of consumers checking ingredients of food products regularly and buying healthy and eco-labelled products.

Aim of the study

The aim of the study is to evaluate the influence of type, character and frequency of sport practicing on one's diet - its characteristic and change. Furthermore, characteristics of sources of knowledge about diet and healthy nutrition were made.

Material and methods:

It was a questionnaire-based cross-sectional study. Specially designed questionnaires were anonymous and demographic data, characteristic of sports, followed diet and nutrition awareness have been checked. Two questions checking knowledge about nutrition and hydration were added. A total of 175 people were surveyed (61% women, 39% men) 91.4% of which were undergraduate or with higher education. Median age was 23 (SD ± 4.8). Most of them (70.8%) lived in a big town, practised sport regularly (84%) mainly in recreational and semi-professional form, doing it themselves or/and in a sport section/club.

Results

84.6% of responders spent on sport 0.5-2 hours minimum, with main frequency 1-3 times a week. The most popular sports were: cycling, gym and fitness/ crossfit activities. 65.7% of participants declare sufficient knowledge about proper nutrition rules, but only 35.4% apply them in their life. Press, radio/TV, and internet were the main source of their knowledge. The majority of responders do not follow special diet, however if they do, it is a vegetarian one (30.5%). When asked, what had changed in their diet after beginning regular sport activity, most popular where: increased water intake with decreased intake of sweet beverages, increased fresh vegetable consumption, increased calories input, limited simple sugars intake. Frequency and size of meals had increased in 56.6% and 46.3% of cases. For 31.4% of responders their diet helps them largely in their sport practice while the same percentage claims not to notice that impact at all.

Conclusions

Young graduates, living in big cities and doing sport regularly declare to have a sufficient knowledge about healthy nutrition, however only one third use it on a daily basis. The source of their knowledge is the media and not the advice of specialists in the field of nutrition. For the majority of people practising sport regularly provoked good nutrition habits. Most of people notice diet's positive impact on their sport results.

The impact of regular sport practices on dietary supplements usage

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Introduction

The Central Statistical Office show that the percentage of people regularly practicing sport in Poland has increased. Dietary supplement usage is also gaining popularity. Vitamins, minerals or immune-boosting supplements were taken by more than half of Poles in 2016. Despite the fact that ¼ of people surveyed admitted taking at least one of these not as recommended, 60% of them claim to notice only their positive effect.

Aim of the study

The aim of the study is to evaluate the influence of type, character and frequency of sport practicing on taking dietary supplements and to estimate main motivations. Furthermore, characteristics of sources of knowledge about supplements were made.

Material and methods:

It was a questionnaire-based cross-sectional study. 175 students (107 sportswomen and 68 sportsmen) were surveyed voluntarily and anonymously with an originally printed questionnaire. Demographic data, characteristic of sports, supplements taken, its side effects and awareness of both were gathered. Moreover, a question checking knowledge about supplements was added. Median age was 23 (SD ± 4.8). The majority of them lived in a big town (71%) and practiced sport regularly (84%) mainly in recreational and semi-professional form, doing it themselves or/and in a sport section/club.

Results

69% of responders spent on sport 1.5-2.5 or more than 3 hours maximum, with main frequency 1-3 times a week. Cycling, gym and fitness were the most popular sports. Only 18.3% of responders declare to have sufficient knowledge about supplements and 21.7% apply it in their life largely. Press, radio/TV and internet were the most popular source of knowledge, however the majority of people do not use any source to learn about supplements.

36.6% of all respondents use dietary supplements, mostly: vitamins/minerals (92.2% of users), protein powders (53.1%) and amino acids (42.2%). The need to supplement the diet and improving sport results were the strongest motivations for them. 23.4% of supplements users see no effects of supplements on their sport practice, while 20.3% says that supplementation is crucial for their sport life. 87.1% of supplements consumers didn't want to stop taking them, however 48,3% had done it at least once - usually because of no effects noticed (13.3%) or sport cessation (10%). 73.2% of people surveyed claim to know side effects of supplements usage and only 11.1% noticed them.

Conclusions

Taking dietary supplements is not very common amongst young people living in big cities and doing sport regularly. They also don't have sufficient knowledge about supplements and don't seek for any source of it. Supplements users don't find them very helpful in their sport practice, however if they find, the main reason for taking them is to improve their sport results.

Prevention of malignant testicular tumors among young men from selected high schools

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Introduction

Testicular tumors belong to a relatively rare group of oncological diseases, whose incidence (especially germ cell tumors) has increased over the course of the last century due to unclear reasons in most cases. In the last ten years, their incidence has increased by approximately 1,2% per year, although the rate of growth is slowing. These tumors have the highest prevalence in the U.S. and Europe, and is uncommon in Asia and Africa. The fact that they affect young men at productive age (between the ages of 15 and 40) and are highly treatable and usually curable makes them a socially significant issue.

Aim of the study

This study aims to find out the awareness and current knowledge of students from selected Czech secondary schools on the prevention of testicular cancer. It also examines the importance of the project MOT FOR MEN in the promotion of preventative medical checkups.

Material and methods:

This study investigates the knowledge and awareness of 150 students from four selected high schools (grammar schools) on the prevention of testicular tumors. All individuals in this research conducted in May 2018 were randomly approached male students aged between 15 and 19. Data for this research were collected with the help of questionnaires due to personal information of respondents and to ensure maximum anonymity.

Results

Among male students aged between 15 to 19 from selected secondary schools the most well-known types of cancer are those which affect organs as breasts (98.7%), lungs (94.7%) and skin (94.0%). Regarding the prevention of this disease, only 36% of respondents think that testicular tumors belong to the most easily detectable tumors, unlike breast tumors (56.0%) and skin cancer (50.7%). Surprisingly, 93% of respondents heard about testicular tumors at least once, but only about 1/3 performed a testicular self-examination (22% due to prevention).

A large group of respondents (41%) don't think that their age group (15-40 years old) is at risk of testicular tumors. Erroneously, the majority responded that testicular tumors mostly affect men older than 40 years old, when in fact their incidence is higher at working-aged young men.

Furthermore, the research reveals that more than half of respondents don't know what the symptoms (57%) and consequences (67%) of testicular cancer are. Testicular tumors turn to be a socially important problem when this research shows that more than half of the respondents (53%) were never on a preventative examination with a general practitioner.

Conclusions

This study has shown that more than 50% of the randomly selected students have never performed a testicular self-examination and generally underestimate testicular cancer prevention. Moreover, the results show that 71% of the respondents who remember an informational campaign on the prevention of testicular tumors, such MOT for men, were at a preventative check-up with a general practitioner.

The use of narcotic drugs and other psychotropic substances among students and their opinion on its influence on health

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Introduction

This study was aimed at determining the prevalence, pattern and factors associated with use of psychoactive substances among students. Furthermore, we investigated student's opinion on influence of narcotics on their health.

Aim of the study

The study was based on questionnaire consisted of 42 questions regarding demographics, socioeconomics, type and frequency of used substances, opinion on their influence of number of health problems and symptoms, self-awareness, decision about quitting. We received data from 689 respondents, who filled questionnaire online. The study group consisted of 418 (60,6%) males and 271 (39,4%) female. The mean age was 22,7 (SD: 2,3; min: 18; max:35) years old.

Material and methods:

The study was based on questionnaire consisted of 42 questions regarding demographics, socioeconomics, type and frequency of used substances, opinion on their influence of number of health problems and symptoms, self-awareness, decision about quitting. We received data from 689 respondents, who filled questionnaire online. The study group consisted of 418 (60,6%) males and 271 (39,4%) female. The mean age was 22,7 (SD: 2,3; min: 18; max:35) years old.

Results

Majority of student in the study live in a rented plat (317; 46%) and receive money from their parents (483; 70,1%), however 291 of them (42%) earn additional money at part-time jobs. Among respondents 256 (37,15%) never tried any narcotic drugs, 161(23,4%) tried few times in their lives, while 136 (19,7%) use them on regular basis (at least one in the month). Cannabis (marijuana) was most frequently (246; 56,8%) declared as first drug they ever tried. Students use narcotics mostly for recreation (241), some of them because of stress. Furthermore, half of students (346) tried cannabis at least once in their lives. 528 respondents (76,6%) think that narcotics influence negatively on their concentration and ability to learn, while 431 (62,5%) think that narcotics may disrupt sleep. 446 respondents believe that in some cases narcotics may cause depression or other psychotic disorders.

Conclusions

More than half of students tried narcotic substances at least once in their lives, in most cases cannabis. Although students are aware of negative possible side effects of narcotics, many of them decide to continue to use them and only a few stated that have problems with addiction.

Analysis of factors affecting waiting time for visit to cardiologist in Poland

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Introduction

This study was aimed to analyze factors that affects waiting time and number of patients waiting for a n ambulatory visit to a cardiologist and compare different provinces (voivodeships) in Poland.

Aim of the study

We collected data regarding 1063 cardiology ambulatory clinics for adults from all 16 provinces in Poland based on online NFZ service accessed in March 2019. We excluded 18 of them due to incomplete data, which resulted in 1045 clinics assessed in statistical analysis. Collected data included name and address of the clinic, state, number of patients in the waiting list, average waiting time, time to first available appointment. We compared data from different provinces including number of inhabitants and number of active specialists in field of cardiology in each province. **Material and methods:**

B

Results

Based on collected data 119024 patients are currently waiting for the visit to cardiologist. The average waiting time is 110,9 (±92) days. Shortest average waiting time was in woj. Lubelskie – 57,5 days and the longest in woj. Opolskie 196,9 days – the difference was statistically significant ($p<0.001$). The longest waiting time for first available appointment was 1167 days in Iława (woj. Warmińsko-Mazurskie) and 1089 days in Kędzierzyn-Koźle (woj. Opolskie). Onaverage there are 2,8 ambulatory cardiology clinics per 100 000 inhabitants, and the differences between regions is small (SD=0,27).

Conclusions

There are significant differences in availability of ambulatory cardiology healthcare in different provinces in Poland. In some regions and cities patients have to wait even up to 3 years for the visit, therefore actions aiming to reduce the waiting lines should be taken.

Self-care practices among type-2 diabetes patients

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Introduction

Diabetes mellitus is a metabolic disorder that is defined by chronic hyperglycaemia related to impairments in insulin release and insulin actions. Patients with type 2 diabetes mellitus need to perform life-long self-care practices to prevent diabetes-specific complications such as nephropathy, neuropathy, retinopathy, skin lesions, hypertension and cardiovascular disease. Self-care practices include adherence to diet advice, physical activity, taking medications, weight loss, glucose self-control. Recent studies show that there is a poor adherence to self-care practice among diabetes patients globally.

Aim of the study

Aim of this study was to assess the self-care behaviors among adults with type two diabetes mellitus.

Material and methods:

The study involved 120 patients (72-female, 48 male). Data on self-care practice were collected using a 15-item questionnaire which consisted of five domains of self-care behavior such as nutrition, physical activity, health care, medication and self-monitoring of blood glucose. The maximum possible score was 45. The scores from the questionnaire were compared in terms of demographic data.

Results

The overall level of self-care practice among type 2 diabetes patients was 23,75 (SD=4,48). The highest level of self-care behavior was nutrition (mean score 5,54) and self-monitoring of blood glucose (mean score 5,45). Physical activity management reached the lowest score in the questionnaire (mean score 3,5). Statistical analysis showed significant dependency between sex and level of self-care (p=0,013), women achieved better score than men. Self-care practices score was associated significantly with education, patients with higher education obtained higher score (p =0,03).

Conclusions

The study findings showed that diabetic patients had moderate level of self-care practice. The educating programs for diabetic patients play crucial role in creating self-care behaviors, therefore enhancement of knowledge about the prevention of diabetes complications should help improve daily self-care practice.

Assessment of knowledge and attitude relating to Hashimoto thyroiditis among Polish women

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Introduction

Hypothyroidism is a clinical syndrome that results from decreased thyroid hormones production and secretion, most commonly due to a disorder of thyroid gland. Hashimoto thyroiditis is an autoimmune disorder due to lymphocytic infiltration of thyroid gland and it is the leading cause of hypothyroidism.

Aim of the study

Aim of the study was to evaluate the level of knowledge about symptoms, ethology and treatment of Hashimoto thyroiditis among young women in Poland.

Material and methods:

The study involved 180 women aged ≥ 18 years (mean 28,4 ± 4,2). Data were collected using a questionnaire which consisted of 4 demographic questions and 10 measuring knowledge of Hashimoto thyroiditis – etiology, epidemiology, treatment and symptoms. Based on the number of correct answers responses were scored between 0-10. The survey was disseminated through social media and discussion groups for women.

Results

The mean score describing the knowledge of Hashimoto thyroiditis was 4,47. Statistical analysis showed that inhabitants of cities achieved significantly better scores, than those who live in the countryside ($p < 0,01$). Participants with higher education obtained significantly better scores, then less educated participants ($p < 0,05$). Worryingly 34,4% of participants consider gluten free diet as a main treatment of Hashimoto thyroiditis.

Conclusions

The study showed that the level of knowledge about Hashimoto thyroiditis is insufficient. The educational status and place of residence affect the women's knowingness. There is a need to spread the information about first choice treatment and clarify the role of the diet in Hashimoto thyroiditis therapy.

Patterns of multimorbidity and polypharmacotherapy in Rheumatoid Arthritis patients

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Introduction

Rheumatoid arthritis (RA) is a chronic, inflammatory, autoimmune disease that affects 1% of the global population. It is the most common connective tissue disease, associated with great socio-economic burden. RA patients suffer not only from arthritis, the disease affects many organs and is characterized by upheld systemic inflammation. Multiplicity and diversity of RA symptoms as well as patient's multimorbidity is one of the greatest challenges in disease management.

Aim of the study

The purpose of the study was to analyse patterns of multimorbidity among RA patients of the Rheumatology Department of the Medical University of Lodz, with particular emphasis on disease advancement, markers of systemic inflammation and drug interactions.

Material and methods:

A retrospective analysis of clinical data obtained from the Rheumatology Department of the Medical University of Lodz was performed. Descriptive statistical analysis, Spearman's rank correlation coefficient and market basket analysis were performed in Statistica 13.1 StatSoft. Drug interactions were analysed with the use of Medscape Drug Interaction Checker.

Results

103 patients with the principal diagnosis of RA were included in the study. The mean duration of the disease was 8.85 years. The median number of diseases co-occurring to RA was 3, and 48.54% of patients suffered from more than 3 diseases. The most common diseases co-occurring to RA were: hypertension, osteoarthritis, dyslipidaemia, hypothyroidism and osteoporosis (52.43%, 32.04%, 29.12%, 19.42% and 19/42% respectively). There was no statistically significant correlation between the time from RA diagnosis and the number of coexisting diseases. There was a statistically significant correlation between the patient's age and the number of coexisting diseases ($rs= 0.3889$, $p<0.05$). There was a non-significant positive correlation between the number of comorbidities and ESR ($rs= 0.18855$, $p= 0.06438$.). The average number of taken medications was 6.87 +/-4.35.

Conclusions

Multimorbidity is an important issue in the management of Rheumatoid Arthritis, especially in elderly population. It is associated with worse response to anti-rheumatic treatment, extraarticular symptoms, polypharmacotherapy and the threat of drug interactions.

RADIOLOGY

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Are apparent diffusion coefficient and T2 signal intensity measurements associated with post-operative Gleason score in patient with prostate cancer?

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Introduction

Prostate cancer is the second most common malignancy among men in Poland. The majority of prostate cancers occur in the seventh and eighth decade of life. The purpose of the medical management is to identify patients, who should be treated because of life threatening cancer disease and avoid a treatment of clinically insignificant prostate cancer.

The Gleason score (GS) is a pathological scale of grading of the prostate cancer. This method represents the sum of the dominant and subdominant histological pattern, usually in terms of the occupied space. The obtained points are summed up with the range from 6 to 10.

Magnetic resonance imaging is a useful tool in a diagnosis, localization and staging of the prostate cancer and facilitates targeted biopsy and focal treatment. Combination of T2-weighted imaging and diffusion-weighted imaging is used in assessment of suspected or confirmed prostate cancer and it remains the mainstay for preoperative prostate cancer staging.

Aim of the study

The aim of the study was to determine the relationship between the apparent diffusion coefficient (ADC), T2-weighted signal intensity (T2SI) and post-operative Gleason scores (GS).

Material and methods

The retrospective study involved 42 males aged from 53 to 82 years (the mean age 65 years), with single focus of cancer in the peripheral zone of the prostate gland. All measurements were carried out with MR 1.5 T Signa Hdx GE medical system GE workstation 4.4, using ReadyView program. Two researchers simultaneously measured and calculated the mean ADC values in three areas within prostate cancer, followed by a single measurement of the minimal ADC (min ADC) corresponding to the darkest spot within prostate cancer. In the following order, the mean T2SI was measured and calculated at three areas within the prostate cancer. The Gleason score was obtained from post prostatectomy tissue assessment and correlated with previously taken measurements. The following results were obtained: GS 6 n=4; GS 7A n=11; GS 7B n=13; GS 8 n=1; GS 8A n=2; GS 8B n=1; GS 9A n=7; GS 9B n=3.

Results

We found a slight negative correlation between min ADC and total GS (r=-0.13) and low negative correlations between the first part of GS and min ADC, mean ADC and mean T2SI (r=-0.27, -0.24 and -0.26 respectively) but without statistical significance ($p>0.05$).

Conclusions

The minimal ADC, mean ADC and mean T2SI measured in prostate cancer of peripheral zone with 1.5T MR are poorly correlated with Gleason score tumour grading.

Future of breast imaging: prognostic significance of intensity of enhancement on Contrast-Enhanced Spectral Mammography (CESM)

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Introduction

Epidemiologists state that more than 12 % of women born in Poland will be diagnosed with breast cancer within the next 3 decades, or within their remaining lifetime. Thanks to the screening mammography, which allows detecting lesions on early stages, the mortality reduces. Mammography can be a standard for breast cancer screening, however both sensitivity and specificity of this imaging are likely to be affected by factors such as a dense tissue. Contrast-Enhanced Spectral Mammography (CESM) as a new method may bring a solution to this problem. CESM is seemed to evaluate suspicious focal lesions that other imagining tools failed to diagnose.

Aim of the study

The aim of the study was to investigate sensitivity and specificity of CESM as a diagnostic tool in examining breasts focal lesions considering population of young women.

Material and Methods

Our research took 104 patients, from 34 to 54 years old (mean age: 45,82 ± 5,07). Discussed patients went through CESM in the University Clinical Center, Medical University of Silesia in Katowice in 2014-2019. Biopsy was performed in order to examine the level of malignancy of the pictured lesions. Sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were calculated.

Results

In total, 114 lesions were included in this study. Histological evaluation revealed 60 (52.63%) benign (mean dimension: 17.22 ± 12.38), 3 (2.63%) high risk and 51 (44.74%) malignant lesions (mean dimension: 27.11 ± 21.69), of which 9 (7.89%) were ductal carcinomas in situ (DCIS) and 34 (29.82%) were invasive lesions. 68.42% lesions were enhanced. There was a statistical significance ($p<0.0001$) between the enhancement on CESM and the level of malignancy. Diagnostic performances of CESM were: sensitivity 98.15%, specificity 58.33%, PPV 67.95% and NPV 97.22%.

Conclusions

CESM has a high sensitivity but low specificity. It has a high diagnostic accuracy for evaluating breast cancer and can be considered as a useful test for initial assessment of breast lesions. CESM is a new technology with an evolving role in breast imaging, a useful screening tool in patients at risk of breast cancer who are not currently well-served by conventional mammography.

Obstetric ultrasound examination differs from fetal ECHO

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Introduction

Ultrasonography (US) is the basic diagnostic examination carried out during pregnancy. According to the gestational age, the standards of its conduction differ from each other. However, independently of the moment when the examination is being ran, one of its aim is to confirm well-being or reveal the defects or abnormalities of fetus. That is why, in case of suspicion or diagnosis of congenital heart defect, the obstetrician is supposed to refer the pregnant patient to the referential centre, where fetal echocardiography is performed. This examination gives the unique information, not only about fetal heart structure and function, but also about whole fetal condition, what enables optimal healthcare and parents counselling.

Case report

36-years-old primigravida in her 12th week of pregnancy was examined by the obstetrician, who diagnosed the tricuspid regurgitation. At 20th week of pregnancy another US examination was conducted. The doctor developed the suspicion of pulmonary atresia. At 22nd week of gestation, the patient was referred to the Department of Prenatal Cardiology at Polish Mother`s Memorial Hospital Research Institute in Łódź, in order to carry out fetal genetic US and echocardiography. ECHO revealed pulmonary stenosis, hypoplasia of right ventricular outflow tract , narrow right and left pulmonary arteries and massive tricuspid valve regurgitation.

Patient was kept under observation and examined by the prenatal cardiologist five times during gestation. At 30th week of gestation steroids were administered. Deteriorating state of the fetus and signs of congestive heart failure (ascites, cardiomegaly, progression of TR) induced the Fetal Heart Team (prenatal cardiologist, obstetrician, neonatologist, pediatric cardiologist, heart surgeon) to carry out an attempt of treatment with digoxin in order to prolonged the pregnancy and improve fetus condition. The other option which was discussed with pregnant woman was premature delivery. The measurable effects were noticed and the state of the fetus improved. At 38th week of pregnancy, at the referential centre, took place a planned labor.

Conclusion

Fetal echocardiography differs from screening obstetrics ultrasound. It enables the specialists to estimate with more detailes fetal condition, with special attention of cardiovascular system. Attempt of pregnancy modification using transplacental therapy can be monitored during gestation with fetal ECHO and save prolongation of pregnancy duration is possible.

Association of Signal Intensity Increase in Nucleus Dentatus and Globus Pallidus on Unenhanced T1-weighted MR Images with Repeated Gadobutrol Administrations: A Retrospective study

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Introduction

In the past 5 years many publications described association between signal hyperintensity in the adult and children brain structures such as globus pallidus and dentate nucleus on unenhanced T1-weighted images and previous administrations of gadolinium-based contrast agents (GBCAs). These studies raised new concerns on the safety of GBCAs.

Aim of the study

The aim of the study was to investigate the effect of multiple Gadobutrol (macrocyclic GBCA) administrations on signal intensity in the nucleus dentatus and globus pallidus on unenhanced T1-weighted magnetic resonance (MR) images on patients, who received 6 or more Gadobutrol administrations.

Material and Methods

A group of 18 adult patients (out of 563 analyzed cases) with brain tumors (n=17) and autoimmune encephalitis (n=1), who underwent 6 - 9 consecutive enhanced MRI examinations in period between 2015. and 2019., were included in this retrospective study. All patients received the same macrocyclic GBCA (gadobutrol) administrations. The mean SIs of the nucleus dentatus, pons, globus pallidus, and thalamus were measured on unenhanced T1-weighted images. The nucleus dentatus-to-pons SI ratio was calculated by dividing the SI in the dentate nucleus by that in the pons, and the globus pallidus-to-thalamus SI ratio was calculated by dividing the SI in the globus pallidus by that in the thalamus.

Results

Patients underwent a mean of 6.83 +/-1.04 gadobutrol administrations (mean accumulated dose 67.92 +/-16.96). The mean nucleus dentatus-to-pons SI ratio did not show a significant increase from the first (1.093 ±0.035) to the last (1.097 ±0.031) MRI examination (p=0.08). The mean globus pallidus-to-thalamus SI ratio also did not show a significant increase from the first (1.027 ±0.492) to the last (1.029 ±0.459) examination (p=0.69).

Conclusion

Repeated administrations of the macrocyclic GBCA (gadobutrol) was not associated with hyperintensity in the nucleus dentatus and the globus pallidus on unenhanced T1-weighted images.

A case of complicated cervico-thoracic trauma of the spine. Advantages of using O-arm® Intra-operative Imaging System.

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Introduction

Owing to unpredictable nature of spinal trauma and possible severe complications, various surgical approaches, procedures and instruments need to be used. Due to small visual field of operation and high degree of precision necessary,proper navigation tools are required. O-arm imaging system allows for improved navigation in the presented case.

Case report

A 40-year old male patient was admitted to hospital due to the fall brought on by epileptic seizure. Despite history of epilepsy, the patient decided to discontinue taking medication. As a result of the fall , the patient sustained trauma of the spine in the form of C7/Th1 dislocation and multiple fractures in the posterior column region of C5-C7. Moreover, patient presented with paresis and muscle weakness of upper limbs (R>L) . Due to the character of the trauma, surgical intervention was carried out - reposition of dislocation, discectomy of C7/Th1, PEEK disc spondylodesis and C7-Th1 stabilization with titanium plate . After the surgery the patient suffered from destabilisation of the operated spinal level: recurrence of C7/Th1 dislocation , spinal cord compression. Neurological status without change.During the second operation, plates, screws and PEEK disc were removed. Furthermore, in addition to laminectomy (C5-C7) and intervertebral joints removal (C7-Th1), full reposition of dislocation, spondylodesis with autogenic bone in PEEK bucket and stabilization were performed. O-arm navigation and Mayfield cranial fixture device were used throughout surgery. Operation lasted 10 hours.The patient lost 700 ml of blood. Neurological status post-operation – no deterioration. Patient transferred to STOCER facility for further rehabilitation.

Conclusion

Mayfield cranial fixture device allowed to achieve a full reposition of dislocation by traction, which was essential step during operation.

The O-arm navigation system improved workflow efficiency by providing real-time multidimensional images optimized for spinal procedures.

O-arm navigation enabled the surgeon to control the reposition of dislocation in real-time.

Thanks to the applied methods, despite the long time of surgery (10 hours) and the loss of 700 ml of blood by the patient, his neurological status has not deteriorated and he was successfully transferred for further rehabilitation.

SURGERY AND TRANSPLANTOLOGY

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Analysis of selected clinical parameters and intraoperative fluid management of patients undergoing pancreatoduodenectomy

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Introduction

Pancreatoduodenectomy is a procedure associated with high risk of complications. Adequate intraoperative fluid management is an important element and a requirement for the success of this extensive procedure.

Aim of the study/purpose

Analysis of selected clinical parameters and components of intraoperative fluid management during pancreatodudenectomy.

Material and methods

Selected clinical data (age, sex, BMI, ASA, diseases) and intra-operative fluid supply (administered colloids, crystalloids, catecholamines, blood transfusions) were analyzed in 192 consecutive patients undergoing pancreatoduodenectomy for pancreatic tumor head.

Results

Pancreatoduodenectomy was performed in 105 men and 87 women. The average age of patients was 60 years (22-82 years), mean BMI 25.12 (16-43,16). Norepinephrine was administered to 21 (10.8%) patients (6 from ASA I-II, 15 from ASA III-IV), PRBC transfusions were necessary in 53 (27.4%) patients (26 from ASA I-II, 27 from III-IV) . The average blood loss was 780 ml (100-3600 ml). The average anesthesia time was 6 hours and 32 minutes, crystalloids supply was 3053 ml, and colloidal - 826 ml. Patients who received PRBC were characterized by a mean blood loss of 1258 ml (400-3600 ml). Of the 53 patients who received PRBC, noreadrenaline was used in 9 (17%). In the group of patients up to the age of 50, the average blood loss was 750 ml, over 50 years - 790 ml. With the exception of 1 patient (39 years old), all the others who received norepinephrine were in the> 50+ age group (20 patients).

Conclusions

Most patients requiring norepinephrine are patients with ASA III-IV. Most patients receiving PRBC did not require noradrenaline supply. There was no correlation between the classification of ASA and the need for transfusion of PRBC. There was no statistically significant difference in blood loss in the group of patients ≤ 50 years and > 50 years. Patients above 50 years of age significantly more frequently required catecholamines.

Laparotomic anterior gastropexy as a treatment option for large hiatal hernias in elderly patients with comorbidities

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Introduction

Large esophageal hiatal hernias (type III- IV) with abdominal organ protrusion intrathoracically occur most commonly in elderly patients with comorbidities. Standart crurorrhaphy and fundoplication is not tolerated well in such patients. Anterior gastropexy (AG) can be performed instead of laparoscopic or laparotomic fundoplication to reduce a risk of recurrent protrusion and torsion of the incarcerated organ which can occur after fundoplication. Due to deformity of the stomach associated with long-term herniation, performing fundoplication is often technically difficult.

This study presents the less traumatic surgical method- AG- which can be successfully used in case of large complicated diaphragmatic hernia treatment in elderly people with comorbidities.

Case report

1 st case: In year 2016 80-year-old woman was acutely hospitalised with 2-day history of pain in the upper abdomen, nausea, recurrent vomiting, lack of appetite. Abdominal CT scan with contrast showed the protrusion of the antral part of the stomach and colon transversum to the thoracic cavity. Hiatal hernia (type IV) was diagnosed. Patient comorbidities: gastrostasis, hypokalemia.

2nd case: In year 2017 80-year-old man was acutely hospitalised with pressuring pain in the upper abdomen, nausea. Abdominal CT scan with contrast showed large paraesophageal hiatal hernia (type III) with CT signs of incarceration. Incarcerated paraesophageal hiatal hernia (type III) was diagnosed. Patient comorbidities: abdominal adhesions, umbilical hernia (1 cm), pseudocyst of pancreas, gallstone disease, kidney cysts, osteoporosis, diverticulosis of small intestine, colon transversum, sigmoideum.

3 rd case: In year 2017 91-year-old man was acutely hospitalised with pain in the upper abdomen, nausea, vomiting. Abdominal CT scan with contrast showed the protrusion of a part of the stomach (9,5 x 10 x 14 cm) to the thoracic cavity. Hiatal hernia (type IV) was diagnosed. Patient comorbidities: coronary artery disease, stable angina class II (NYHA), old miocardial infarction (year 2009), primary arterial hypertension, chronic heart failure class II, general atherosclerosis, coronary angioplasty in 2011.

The abdominal CT scan and chest X- ray was performed on all patients to evaluate the characteristics of hernia. Patients underwent laparotomy, abdominal organ reposition and AG. No perioperative complications or postoperative morbidity occurred. 5 days after the surgery patients were discharged from the hospital. One month after the surgical treatment patients were telephoned and asked about the current health complaints regarding the disease- no patient had recurring complaints related to the disease. None of the patients undergoing surgery had a relapse of the disease on follow up.

Conclusions

AG can be successfully used in case of large complicated diaphragmatic hernia (type III- IV) treatment with satisfactory mid-term postoperative results in elderly patients with comorbidities.

Preoperative risk factors for early complications after carotid endarterectomy

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Introduction

Carotid endarterectomy (CEA) is one of leading procedures used in reducing risk of stroke among patients with *carotid atherosclerosis*. Recent studies showed satisfactory risk/benefit ratio of CEA, however for some groups of patients (especially asymptomatic) benefits are not so passable in relation to risk of complication. For this reason preoperative predictors of CEA complication may be useful for proper patient qualification.

Aim

Assessment of the correlation between preoperative factors and early complications frequency in patients scheduled for CEA.

Materials and Methods

The study group comprises 1530 patients who underwent CEA procedure between 2009 and 2018. Preoperative and procedural data was collected retrospectively. Only complications that occurred during hospitalization were recorded. Patients who underwent CABG (n=75) or thrombectomy (n=56) simultaneously were analyzed separately. Major complication included: deaths, strokes, transient ischemic attacks (TIA) and myocardial infarctions.

Results

The mean age of studied population was 70+/-9 years and females constituted 36.5%. Study revealed major complications in 2.2% (31) of patients in group without CABG and thrombectomy, 6.7% (5) in CABG group (p=0.04) and 11.3% (6) in thrombectomy group (p=0.002). Additionally 40.3% of patients required administration of antihypertensive drugs perioperatively.

Cranial nerve injuries were reported in 7.4 % of patients undergoing carotid angioplasty and in 2.4% patients without angioplasty (p=0.0004). Angioplasty was also associated with higher incidence of TIA or stroke in total (3.7 % vs. 1.6%, p=0.044).

A higher percentage of deaths, cardiac arrests, myocardial infarctions and wound infections, was observed in the group with coronary artery disease.

Patients with contralateral occlusion presented with TIA more often than others (2.7% vs. 0.4%, p=0.007). Symptomatic and asymptomatic patients did not differ in the frequency of complications.

Conclusion

The majority of patients underwent CEA without major complications. Intraoperative angioplasty, simultaneous CABG, thrombectomy, coronary artery disease, and contralateral carotid artery occlusion may be a predictive factor for higher incidence of early complications.

Benign lesion of pancreas - is it really an unexpected finding after pancreatectomy?

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Introduction

Suspicion of pancreatic malignancy, which is a devastating disease, should be handled with great attention. In the era of modern imaging modalities, small tumors can be detect earlier but distinguish between benign and malignant pancreatic lesions is still a big diagnostic problem. Improvement in peri-operative care and surgical techniques significantly decreased complication rate after pancreatectomy. Because of this, no histological proof is obligatory (e.g. fine needle biopsy) before introducing surgical treatment of suspicious solid mass of pancreas. Postoperative histopathological examination of specimens after pancreatectomy shows that 5-10% of such tumors are benign.

Aim of the study

The aim of this study is to analyze benign histopathological findings after pancreatic surgery.

Materials and methods

The study was undertaken in a population of patients(PTS) after pancreatic surgery admitted to Department of Transplant and General Surgery of No 1 Barlicki Memorial Hospital in Lodz, Poland between 2012 and 2016. Patients with histopathological confirmation of benign lesion were selected for further analysis.

Results

A retrospective analysis of 269 PTS operated between 2012 and 2016 was performed. Pancreatic surgery comprised open biopsy, modified Puestow procedure, pancreatic resection and Whipple procedure. One hundred and thirty (48.3%) PTS with benign lesions were included to this study. Age of study subjects was ranging between 25 and 86 years with mean value of 60 years; 57(43.8%) were women and 73(56.2%) men. Most frequent postoperative histopathological diagnosis was cyst 54(41.5%) PTS then chronic inflammation, cystadenoma, normal structure of pancreas and pancreatic necrosis, respectively 32(24.6%), 21(16.2%), 13(10%), 10(7.7%).

Conclusion

Pancreatic solid mass suspicious of malignancy, if resectable, requires surgery despite lack of preoperative histopathological confirmation. There is need to rise this issue because further improvement in diagnostic techniques, and early detection of small lesion will result in greater number of problematic cases.

Influence of different clinical and histopathological factors on prognosis in patients with gastrointestinal stromal tumors

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Introduction

Gastrointestinal stromal tumors (GIST) arise in the smooth muscle pacemaker interstitial cell of Cajal, or similar cells. They are the most common mesenchymal tumors of the digestive tract and may occur in each portion of the gastrointestinal tract. The most useful prognostic factors are tumor size, mitotic index and location within the gastrointestinal tract.

The aim of the study

was to assess the chosen prognostic factors (location in the gastrointestinal tract, tumor size and mitotic index) in patients with GIST.

Material and methods

Between 2009 and 2019, 98 patients (50 women and 48 men) with an average age of 63,8 years (range from 38 to 90 years) were operated for GIST in the Department of Gastrointestinal Surgery. Two- and five-year survival rates during observation were analyzed, as well as the location within the gastrointestinal tract, tumor size, mitotic index and BMI. Based on the intraoperative and postoperative investigations, the tumor size and mitotic index were specified in each patient. Correlation between location, mitotic index, tumor size, BMI and survival of patients was assessed. Results were subjected to statistics, where p=0.05 was considered to be significant.

Results

Of the 98 patients included in the study, 70 patients had a primary tumor located in the stomach, 10 patients in the duodenum, 8 patients in other parts of small intestine, 6 patients in pancreas, 2 patients in oesophagus and in 2 cases tumor originated from large intestine. The most frequent (17,35%) mitotic index was 2.

Conclusions

The mitotic index and location in the gastrointestinal tract are essential prognostic factors in analyzed patients with GIST.

Clinical picture and management of pleural empyema: a single-center experience

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Introduction

Pleural empyema is a condition which occurs mainly secondary to other underlying entities. First-line therapies in its management are antibiotics and, in the majority of cases, drainage procedure.

Aim of the study

An assessment of pleural empyema management with regard to demographics, aetiology, and other selected clinical data.

Material and methods

A retrospective chart review of 111 consecutive patients with pleural empyema was performed. All patients were hospitalized in the Wroclaw Thoracic Surgery Center in the years 2014-2018. Collected data concerned demographics, aetiology of pleural empyema, selected laboratory test results and applied treatment with its outcome. Univariate analysis was performed to assess the significance of particular associations.

Results

The patients' mean age was 56.7 years. Men represented the great majority of the group (men-to-women ratio approx. 4:1). The average total time of all hospitalizations due to pleural empyema in one patient was 16.6 days. Empyemas were observed significantly more often in the right pleural cavity (p=0.04). The most frequently preceding or coexisting causes were neoplasms, pneumonia, and pneumothorax. The most commonly used antibiotics were cephalosporins (in 43% of patients) and amoxicillin (in 38%). In 74.8% of hospitalizations prolonged drainage was applied, in 12.6% the drain was removed until discharge. 5.4% of patients died during hospitalization. The less frequent surgical procedures were fenestration (2.7%) and decortication (1.8%). In 2.7% only antibiotic therapy was administered. In the case of neoplasm-associated empyemas the percentage of prolonged drainage was 75.9%, whereas in parapneumonic ones it was significantly lower (52.9%; p=0.049). Median time of prolonged drainage was 6.5 weeks and ranged between 2-56 weeks. In 9 patients the recurrence of empyema after the drain removal was observed. Higher WBC count on discharge was correlated with longer time of prolonged drainage (R 0.3; p=0.04). Patients' age was negatively correlated with CRP level on the admission (R -0.2; p=0.037). There were no significant differences in age, sex, and side of empyema between patients who underwent prolonged drainage and those who were discharged without a drain.

Conclusions

The great majority of patients required prolonged drainage and in over 10% of them the empyema recurred. Pleural empyema is still a life-threatening condition, as 5.4% of patients died during hospitalization.

Surgical treatment of pancreatic metastases of renal cell carcinoma – own experience, one institutional study.

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Introduction

Metastatic renal cell carcinoma (mRCC) is a spread of the primary renal cell carcinoma (RCC) to other organs. Since recent introduction of molecular targeted therapy in renal cancer we can notice improvement in disease free survival (DSF) and overall survival (OS). Due to common usage of imaging examinations, kidney tumors may be identified in an early stage. However, at diagnosis 20-30% of patients have metastases and 40-50% will develop them after nephrectomy. Some authors emphasize the importance of employing cytoreductive treatment for metastatic disease before starting adjuvant therapy, which increases 5 – year survival rate. Natural history of this tumor shows that clinical signs are generally mild until the disease progresses to a more severe state often leading to earlier detection of metastases than main kidney tumors. The majority of cases concern metastases to lungs, lymph nodes, liver and bones, whereas pancreatic metastases are quite uncommon but associated with rather long survival.

Aim of study

The aim of this study is to extend knowledge and understanding of surgical treatment of pancreatic metastases of renal cell carcinoma.

Material and methods

The study was undertaken in a population of patients (PTS) operated because of pancreatic metastases of renal cell carcinoma (pmRCC), admitted to Department of Transplant and General Surgery of No 1 Barlicki Memorial Hospital in Lodz, Poland between 2012 and 2018. Only PTS with histopathological confirmation of RCC were selected for further analysis.

Results

A retrospective analysis of 363 PTS operated between 2012-2018 because of pancreatic lesions was performed. Among them, 7 PTS were diagnosed with a pmRCC. Age of study subjects was ranging between 48 and 84 years with mean value of 71 years; 4 were women. Six of them underwent previous nephrectomy. Mean time from nephrectomy to pancreatic metastasectomy was 11 years. In all specimens histopathological diagnosis of carcinoma clarocellulare was confirmed. Additionally, among all PTS operated in Department of Transplant and General Surgery between 2012 and 2018 3 more mRCC were found, 2 in the retroperitoneal space and 1 in the thyroid gland.

Conclusion

Metastasectomy is a useful tool against RCC and in combination with targeted therapy improves DFS and OS. This study demonstrates importance of further analysis of patients with pmRCC and conducting similar research on larger cohort.

Can directed antimicrobial prophylaxis reduce the risk of infectious complications of prostate biopsy?

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Introduction.

Transrectal prostate biopsy is associated with the risk of infectious complications. Due to increasing resistance of E.coli to fluoroquinolones (FQ), this issue has become an increasing concern.

Purpose.

The aim of this study was to identify local antibiotic sensitivity profile of rectal E. coli strains and to assess the influence of targeted antibiotic prophylaxis on the risk of infectious complications of prostate biopsy.

Materials and methods.

One hundred seventy seven consecutive men who have undergone transrectal prostate biopsy were retrospectively enrolled into this analysis. They were divided into two groups: 1) 91 patients who underwent pre-biopsy rectal culture and were offered a directed antimicrobial prophylaxis for prostate biopsy and 2) 86 patients in whom rectal culture has not been performed and who were offered a standard empirical antibiotic prophylaxis for prostate biopsy. All patients were followed-up after the biopsy with at least one telephone contact. Study end points were the resistance rate of rectal E. coli to FQ in group 1 and the rate of infectious complications in both study groups.

Results.

Among 91 patients in group 1, the presence of E. coli was confirmed by rectal culture in 89.0%, including 8.6% of FQ resistant strains. The rate and description of post-biopsy complications is presented in the table. Due to low number of infectious events and hence underpowered results, comparison of outcomes in the study groups needs caution.

		Group 1 (n=91)	Group 2 (n=86)	P value
Rate of infectious complications		4.4%	5.8%	0.74
Overall rate of complications		8.8%	7.0%	0.79
Rate of hospital readmissions		1.1%	1.2%	1.0
Description of complications (number of patients)	Fever >38.5C	1	3	0.52
	Sepsis	1	1	1.0
	Epididymitis	2	1	0.52
	Rectal bleeding >2 days	7	1	0.03

Conclusions.

The resistance rate of rectal E. coli to FQ in our region remains low, so FQ can still be regarded as first-line prophylactic option for patients undergoing prostate biopsy. To determine the value of directed antimicrobial prophylaxis, further studies with more patients enrolled are needed.

Clinical and morphological aspects of jejunostomy in complex surgical treatment of acute necrotizing pancreatitis

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Introduction

In the patients with acute necrotizing pancreatitis (ANP), the signs of abnormal functioning of the proximal part of the small intestine often develop. Correction of these disorders is an important direction in the treatment of ANP.

Aim of study

To study the morphological changes of the jejunal wall in the ANP to substantiate the feasibility of jejunostomy for correction of disturbances of the function of the proximal parts of the small intestine.

Material and methods

Histological examination of micropreparations of the intestinal wall of 17 patients with ANP was carried out. The intestinal fragments were performed intraoperatively in 12 patients operated on parapancreatic purulent complications. Suspended jejunostomy was formed for Eiselsberg-Witzel technique with a tube (F14) at a distance of 40-50 cm. In 5 non-operated patients, the selection of fragments were performed on autopsy.

Results

Manifested inflammatory-destructive changes of all layers of the jejunal wall were detected in all intraoperative biopsy specimens. Particularly, in the mucous membrane were dominated desquamation of the cover epithelium with focal necrosis, ulcerations and haemorrhages, in lamina propria – significant neutrophil infiltration, in the submucosa – swelling and pronounced fullness of blood capillaries.

The muscular layer was swollen, the distribution of myocytes to shreds of different thicknesses with fragmentation, dystrophic changes. One of the cause of destructive changes can be considered an increasing of intraluminal pressure.

Similar morphological changes are typical for small bowel obstruction, which may be an objective basis for providing intestinal decompression during ANP. To evaluate the decompression effect of jejunostomy, a re-examination of morphological changes in the intestinal wall were performed in 3 operated patients who died due to MODS. Reduced severity of edema and mastocytic infiltration in the submucosa was noted, while no significant changes were observed in the muscle layer. The established positive dynamics indicates on expediency of prolonged decompression by jejunostomy.Jejunostomy was used in the mode of decompression of the intestine during the first 5-7 days of postoperative period. Later it was used in the mode of provision of the main and additional enteral nutrition in terms of up to 47-84 days.

There were no local complications due to jejunostomy.

Conclusions

1. Manifested inflammatory-destructive lesions were found in the wall of the intestine in patients with acute necrotizing pancreatitis.
2. The revealed changes are similar to the morphological features of the intestinal wall at small bowel obstruction, which may be an objective basis for providing of decompression.

3. Jejunostomy provides effective intestinal decompression and is safe for clinical use in patients with acute necrotizing pancreatitis.

Assessment of safety and efficacy of thrombolytic treatment for acute lower extremity ischemia and the limb survival and heemorrhagic complications prognostic factors.

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Introduction:

Thrombolysis is a way of treatment of acute lower limb ischemia. It may be an alternative for surgical treatment. Although several studies have been conducted, a consensus about treatment protocol is not established.

Aim of the study:

To assess safety and efficacy of thrombolytic treatment with use of altepalase with one protocol and the limb survival and hemorrhagic complications prognostic factors.

Material and methods:

Retrospective analysis of 96 consecutive patients treated with catheter-directed, intra-arterial alteplase thrombolysis for acute lower limb ischemia (Rutheford I and IIa) was performed. Clinical data including: angiography results, complications, failure of the therapy, need for surgery, duration of symptoms and laboratory tests were analysed.

Results:

Amputation free rate was 86.5% and the patency rate was 76% overall. Clinical improvement was noticed in 2 cases without restoring angiographic patency. Failure of treatment appeared in group of 13 patients, considering amputations. In the cases with restored patency, additional endovascular interventions were performed in 27.4%, and surgical interventions in 13.7%. In cases with no primary patency restored, surgical interventions were performed in 22.1%.

Major complications including bleeding to central nervous system, and retroperitoneal space were observed in 3 and 1 cases respectively. There is no statistically significant difference in mean APTT and fibrynogen values in patients with and without minor and major bleeding complications. There is also no correlation between incidence of minor and major hemorrhagic complications and anticoagulants or antiplatelets on admission.

In the group of patients with and without amputation there was no statistically significant difference in median dose of alteplsase and median time of treatment. Following factors are not correlated with improvement in amputation free rate: the treated vessels neither native arteries nor bypass grafts, location of the occluded segment: supra vs infrainguinal. The threshold of symptoms duration in terms of clinical success was managed at 72h (sensitivity 100% and specificity 40%) and 48h (sensitivity 100% and specificity 36.7%).

Conclusions:

Thrombolytic therapy is a suitable and efficient solution for patients with acute lower limb ischemia resulting from in situ thrombosis. It may prevent selected patients from surgical intervention, and enable treatment of the group precluded from surgery. It appears to be no correlation between limb salvage and dose of alteplase or time of treatment. When symptoms last over 72h, it might be related with worse prognosis. APTT and fibrynogen values seem to be not appropriate tool for assessment of bleeding risk.

Abstract Book Editors: **Adrianna Owczarek,** Jagienka Szulc, Leon Pawlik, Katarzyna Zapart