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General information

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Clinical and Didactic Centre, Medical University of Lodz
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English

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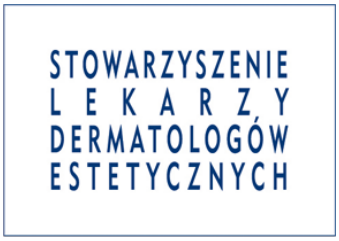

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Invitation

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 Univeristy of Lodz and have a fruitful and productive meeting.

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

Plan of Scientific Sessions

Friday

Time/Room	1.17	1.18	1.19	1.20	1.27	01.11
12:00-12:30	Endocrinology and Diabetology	Internal Medicine	Transplantology		Public Health 1	Psychiatry and Psychology
12:30-13:00						
13:00-14:00						
14:00-15:00						
15:00-16:00	Pharmacy	Dermatology	Technical Medicine and Bioengineering	Basic Science	Surgery 1	Public Health 2
16:00-17:00						
17:00-18:00						

Saturday

Time/Room	1.17	1.18	1.19	1.20	1.27	01.11
8:00-9:00						
9:00-10:00	Cardiology	Orthopedics	Anesthesiology and Emergency Medicine	Gynecology and Obstetrics	Pediatrics	Dentistry
10:00-11:00						
11:00-12:00						
12:00-13:00	Cardiosurgery and Interventional Cardiology	Oncology and Haematology	Opthalmology and Optometry	Otolaryngology	Surgery 2	Neurology
13:00-14:00						
14:00-15:00						
15:00-16:00						
16:00-17:00						
17:00-18:00	Closing Ceremony					

ANESTHESIOLOGY & EMERGENCY MEDICINE

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Evaluation of the use of NMBA during anaesthesia with intraoperative neuromonitoring of recurrent laryngeal nerves during thyroid surgery.

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Introduction

Intraoperative neuromonitoring (IONM) of the recurrent laryngeal nerves (RLN) has gained an widespread acceptance in thyroid surgery. To apply this method it is necessary to modify scheme of general anaesthesia. Administration of neuromuscular blocking agents (NMBA) is one of the most important aspect. However best anaesthetic regimen for surgery with IONM is controversial. Literature provide many schemes of general anaesthesia that allows to perform an IONM.

Aim of study

The aim of our study was to evaluate using of NMBA during anaesthesia with IONM of RLN during thyroid surgery.

Materials and methods

The study involved medical documentation of 72 patients hospitalized at the Department of Anaesthesiology and Intensive Care, Medical University of Bialystok between January and December 2016. All of the patients underwent general anaesthesia for thyroid surgery with IONM. There were 65 women (90,28%) and 7 men (9,27%) with a mean age of 49,34±14,15 years. There were 21 (29,16%) patients in preoperative ASA I score patients, 47 ASA II (65,28%) and 4 ASA III. (5,56%). Nonparametric tests were used for the analysis. Calculations in were made using Statistica 12.5 software.

Results

In 71 cases (98,61%) induction phase of general anaesthesia was performed with the use of NMBA. 60 patients (83.33%) were used depolarizing agent – suxamethonium and non-depolarizing agent - cisatrakurium was used in 10 cases (13,89%). In maintenance phase 45 patient (62,50%) did not receive NMBA, 26 patients (36,11%) proceed with cisatrakurium and in 2 cases (2,78%) rocuronium. 1 patient (1.39%) did not receive muscle relaxant in induction and maintenance phase. Mean time of general anaesthesia was 137,83±43,35 min. with mean operating time 107,83±43,35 min. There were 68 10-points-patients, 4 9-point-patients in postoperative Aldrete Score. In studied group choose of NMBA revealed statistically significant difference ($p<0.05$). There were no significant differences between groups in postoperative score. In all cases IONM of RLN was performed.

Conclusions

Both schemes of anaesthesia, in aspects of using or elimination NMBA during induction and maintenance phase, give good possibility to conduct IONM during thyroid surgery. The postoperative assessment of patients undergoing thyroid surgery with IONM does not depend on applied neuromuscular blocking agents. The use of presented types of NMBA is equally safe.

General anaesthesia during ablation of atrial fibrillation, comparison of propofol and volatile anaesthetics

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Background

Catheter ablation is intervention procedure used to treat AF. Patient must lays still because even small move can disturb mapping process and prolong surgery or make it less effective. It's painfully surgery with local numb only, usage of bigger doses of painkillers can cause breathing depression. When we use general anaesthesia these impediments vanish. Moreover general anaesthesia can be easily prolonged so cardiologist feels more comortable.

Aim of study

Comparison of TIVA and volatile anaesthetics (sevoflurane and isoflurane) during ablation of AF.

Materials and methods

We've chosen and compared 2 groups of patients, inducted with propofol. In first group, called P, there're 96 adults anesthetized with propofol in infusion. In second group, called V , there're 104 adults anesthetized with volatile anaesthetics. There are similarities between these groups: BMI (V28,8vP28,8), age (V57,6vP56,4), percentage of women (V37,5%vP31,3%) $p>0,05$. Inclusion criteria was age>18, CARTO ablation, lack of contraindications and patient agreement to undergo general anaesthesia. Exclusion criteria was age<18, contraindications or lack of patient agreement to undergo general anaesthesia.

Results

Usage of drugs: dormicum V77,9% v P90,6%, paracetamol V46,2% v P 17,7%, metamizole V47,1% v P22,9%, protamine V 87,5% v P67,7%, antiemetics (ondasetron, metoclopramide) V22,1% v P9,4%, norepinephrine V50% v P2%, ephedrine V40,4% v P17,7%, atropine V 52,9% v P19,8%, furosemide V20,2%vP1%. Mean dosage of dormicum V3,5mg v P4,89mg. Time (in h) of anaesthesia V 2:41 v P 3:21 and surgery V 4:07 v P4:44. In one operating room often 2 operations has been done per day. Time (in h) comparison between first and second anaesthesia and surgery: V 2:46 v 2:25 and 4:17 v 3:41, P 3:37 v 2:41 and 5:01 v 4:03. Differences in diuresis V 488,1ml v P 133,2 ml. There's $p<0,05$ for all statistics above. Usage of FNT V77,9% v P86,5%, $p>0,05$.Decrease of RR below 100 mmHg V66,4% v P42,7%, $p<0,001$, below 80 mmHg V15,4% v P13,5%, $p>0,05$. About 3% of patient was defibrillated (adverse event) in P and V both. Comparison of colloids usage V36ml v P52ml and crystalloids V1246ml v P1152ml, $p>0,05$ for both.

Conclusion

Statistically midazolam was used in P than more often than in V and dosage was bigger in P. In P fentanyl was used more often than in V but it wasn't statistically significant. However in V more paracetamol and metamizole was used than in P. Statistically, effects of heparin was inverted with protamine more often in V than in P. Antiemetics were used more often in V than in P. RR decreases below 100 mmHg were more often in V than in P. Usage of atropine, norepinephrine, ephedrine was bigger in V. Volume of used fluid was similar in both groups. Furosemide was used more often in V so diuresis was bigger in V than in P. Time of anaesthesia and surgery was shorter for V than P. In P and V both second anaesthesia and surgery time were shorter. Adverse events were rare in both P and V.

Which predictive scoring system is really matched to our ICU patient?

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Introduction

There are several scoring systems commonly used for outcome prediction in the ICU setting. Their application in a local scenario usually requires validation to ensure appropriate diagnostic accuracy.

Aim of study

To assess whether APACHE II and III, and SAPS II predicts in-hospital and long-term mortality at the university ICU in a 12-month period.

Materials and methods

Appropriate scorings of APACHE II, APACHE III and SAPS II, and their corresponding predicted mortality ratios were calculated based on data retrieved from medical records for 303 consecutive patients admitted to the 10-bed ICU in 2016. In-hospital mortality was recorded. Long-term mortality was calculated based on information taken from PESEL database.

Results

Mean APACHE II, APACHE III and SAPS II were 18±9; 64±35 and 42±20 pts, respectively. Predicted mortality for those scoring systems was 32±24, 26±25 and 37±29%. Observed in-hospital mortality was 35.6%. During a median follow-up of 52 days mortality reached 17.4%. All systems predicted in-hospital mortality: APACHE II (AUC=0.783; 95%CI 0.732-0.828), APACHE III (AUC=0.793; 95%CI 0.743-0.838) and SAPS II (AUC=0.792; 95%CI 0.742-0.836), with the corresponding cut-off points of: 22, 66 and 46. All scorings predicted mortality after ICU discharge: APACHE II (AUC=0.712; 95%CI 0.643-0.775), APACHE III (AUC=0.721; 95%CI 0.653-0.783) and SAPS II (AUC=0.695; 95%CI 0.625-0.759), with the corresponding cut-off points of: 19, 48 and 29.

Conclusion

APACHE III is the most powerful tool in predicting in-hospital as well as long-term mortality in this local ICU.

Intraoperative blood pressure variability under general and total intravenous anaesthesia in patients with hypertension

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Introduction

Patients with hypertension (HT) are more prone to changes in the values of blood pressure (BP) when under anaesthesia.

Aim of study

The aim of the study was to compare the variability of BP in hypertensive patients and patients without HT, under anaesthesia.

Materials and methods

Intraoperative anaesthesia records of 30 patients with HT and 18 patients without HT were analysed. All of the patients underwent neurosurgery in November and December 2016. Patients who were under total intravenous anaesthesia or general anaesthesia during the surgery were included. Exclusion criteria were positions other than supine or prone position, operation on the hypophysis, placement of ventriculoperitoneal shunts or extraventricular drain. BP values recorded during the induction, maintenance and emergence from anaesthesia were compared.

Results

The average difference between the lowest systolic BP during the induction and the lowest systolic BP during the maintenance was 11,7 mmHg in patients with HT and 11,4 mmHg in those without HT; the mean difference in the lowest diastolic BP was 10,8 mmHg and 8,6 mmHg, respectively; the difference was not statistically significant ($p>0,05$). The mean differences between the max. and min. systolic BP values were 43,5 mmHg in HT patients and 30,6 mmHg in patients without HT ($p=0,02$); in case of diastolic BP it was 25,3 mmHg and 16,7 mmHg ($p=0,01$), respectively.

Conclusion

The difference in the change in BP after the induction was higher in patients with HT, however it was not statistically significant. The mean difference between the highest and lowest BP values during maintenance was significantly bigger in patients with HT. The results show a greater difficulty in maintaining stable BP in HT patients.

Fulminant lactic acidosis in young patient with cell metabolism disorder masquerading as polymyositis

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Introduction

Congenital lipid metabolism disorders (such as defects of fatty acids transport into mitochondium or defects of β-oxydation enzymes) as well as mitochondrial disorders are not very uncommon in neonatal and pediatric population, but they are very rare in adults and may manifest in various ways. Therefore they often pose a great diagnostic and therapeutic challenge.

Case Report

18-year-old man was admitted to neurology ward because of 4-week history of fatigability, muscle pain and weakness, heart palpitations and drowsiness. On examination patient presented symmetrical, slight paresis of proximal muscles with tenderness and sinus tachycardia without other abnormalities. Laboratory tests revealed elevated levels of creatine kinase and myoglobine. Electromyography suggested possible inflammation of muscle tissue. Biopsy of biceps brachii showed no abnormalities. Antibodies characteristic for polymyositis levels were also in normal range. Due to clinical symptoms suggesting polymyositis oral glucocorticosteroids were introduced. Tachycardia was treated with beta-blockers, any other cardiac disorders were excluded. On 19thday of hospitalisation patient reported excacerbation of dyspnea and heart palpitations. Angio-Computer Tomography was performed in order to exclude pulmonary embolysm. It showed only small peripheral clot irrelevant for patient's condition. Patient's clinical condition was quickly deteriorating with severe dyspnea, confusion, nausea, and polymorphic cardiac arrythmia. Arterial blood gas analysis revealed severe lactic acidosis with pH value of 6,69 and lactate level of 28 mmol/l. Patient was transported to the Intensive Care Unit. Continous renal replacement therapy, mechanical ventilation and circulatory support were implemented. The next day acidosis has deepend to pH of 6,4. Patient died of cardiac arrest after attempt of resuscitation.

In post mortem examination diagnosis of lipid metabolism disorder or mitochondrial disease was established.

Conclusion

Case of this patient is an example how challenging differential diagnosis can be – patient presented three of four diagnostic criteria for polymyositis. It also shows that introducing the screening for genetical metabolism disorders in newborn infants in 2013 in Poland was a valuable decision. Knowledge of the nature of the disease could have prevented such sudden excacerbation of symptoms. Unfortunately our patient was born before implementation of these screening tests.

Invasive versus noninvasive hemodynamic monitoring- a comparison of available methods

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Introduction

pulmonary artery catheters (pac) are the gold standard for hemodynamic monitoring. The LiDCOrapid System uses pulse contour analysis and calculates the parameters using patients data. This measurement can be performed using only an arterial catheter.

Aim of study

we aimed to verify the relevance and reliability of lidcorapid as a noninvasive method of monitoring hemodynamic parameters in patients during the postoperative period.

Materials and methods

the study covered 50 consecutive patients (36 men/ median age 66 years) admitted to postoperative ward after various cardiac surgery procedures. The hemodynamic parameters were measured simultaneously using both postoperatively inserted PAC and LiDCO. The agreement between methods was assessed based on indexed hemodynamic parameters (CI, SVRI) using the Bland-Altman analysis.

Results

no statistically significant difference was found between pac and lidco measurements ($p>0.05$). There's no fixed trend in deviations between the results. In CI only 52% of samples fitted between the limits of agreement (LoAs). Among that group, 65% of samples were located between bias and upper LoA (results understated by LiDCO by < 1,0l/min/m2), and 35% were the results overstated by LiDCO by < 0,5l/min/m2. In SVRI 56% of samples were found within LoAs, with 54% in range of understated values.

Conclusion

1. The agreement between the two methods is sufficient enough only when applying to values between bias and upper LoA. 2. The deviation in measurements is substantial both at values noticeably below or above norm and not significant for values within normal range, since it doesn't alter the therapeutic treatment.

Comparison of intermittent and continuous renal replacement therapy for patients with acute renal failure in intensive care unit: A Single-center 2-year Experience

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Introduction

The management of patients with acute kidney injury (AKI) is supportive, with renal replacement therapy (RRT) indicated in patients with severe kidney injury. Multiple modalities of RRT are available. These include intermittent hemodialysis; continuous renal replacement therapies and hybrid therapies. Despite these varied techniques, mortality in patients with AKI remains high, exceeding 40 to 50 percent in severely ill patients. [Paul M Palevsky, MD., 2016]

The maintenance of normal serum sodium, potassium, bicarbonate and other electrolyte concentrations is a therapeutic goal of RRT. Thus it is important to determine whether this goal is best achieved with intermittent or continuous RRT. [Shigehiko Uchino et al., 2001]

Aim of study

The aim of the study was to evaluate which type of the renal replacement therapy (intermittent or continuous) is better for serum sodium, potassium and bicarbonate level normalization. As well as to determine intra-hospital mortality of acute kidney injury when one of the RRT method was performed.

Materials and methods

In the retrospective descriptive study medical histories of 67 patients were examined. Those were patients admitted in RECUH stationary "Gaiļezers" intensive care unit with acute kidney injury, who had a necessity for renal replacement therapy in time period from year 2015 until 2016. They were divided into two groups - those who received intermittent hemodialysis (IHD), and those received continuous renal replacement therapy (CRRT; Continuous veno-venous hemodiafiltration or hemodialysis). The levels of sodium, potassium and bicarbonate in blood gas analysis before the therapy and after it were analyzed.

The calculation of APACHE II score was performed and data about changes in biochemical analyzes were also collected.

Results

Consecutive patients with acute renal failure treated with IHD (n=20) and CRRT (n=47) were analysed. Mean age in IHD group (57,1±17,4) vs CRRT (61,3±15,1). Mean APACHE II score by groups IHD:CRRT (23,2±5,3 vs 25,9±5,8;NS). Men and women ratio by groups (13:7 vs 24:23). Before RRT (IHD:CRRT), abnormal (high or low) values were frequently observed for sodium (60% vs 49%; NS) potassium (80% vs 66%; NS) and bicarbonate (75% vs 87,3%; NS). After treatment CRRT compared with IHD was more likely to normalize the levels of sodium (CRRT:IHD 61,7% vs 20%; NS) potassium (CRRT:IHD 34% vs 20% NS) bicarbonate (CRRT:IHD 25% vs 25%; NS). Intra-hospital mortality: total 89%, by groups IHD:CRRT (90% vs 89%).

Conclusion

Both RRT - intermittent and continuous - can be used to normalize abnormal serum sodium, potassium and bicarbonate levels equally, however, there is a tendency that CRRT is more likely to normalize serum sodium and potassium levels comparing with IHD. Intra-hospital mortality remains as high as 89% in this study.

Prognostic value of the Acute Physiology and Chronic Health Evaluation (APACHE) II, Simplified Acute Physiology Score (SAPS) III and Sequential Organ Failure Assessment (SOFA) scales in predicting functional status and quality of life in intensive care unit (ICU) survivors

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Introduction

A notable percentage of patients require medical care after discharge from the ICU. Data on risk factors associated with decreased functional status in ICU survivors is scarce. Commonly used scoring systems were developed to predict in-hospital mortality. Their value in predicting other outcomes is unknown.

Aim of study

To determine usefulness of APACHE II, SAPS III and SOFA scales in predicting long-term outcomes in ICU survivors.

Materials and methods

The study included 258 patients admitted to the university ICU in 2015. APACHE II, SAPS III and SOFA scales were calculated on admission. 62 survivors were contacted by phone and 47 (32F/ 15M; aged 20-80y) agreed to participate. Functional status and quality of life (QoL) were evaluated using Barthel Index (BI), Duke Activity Status Index (DASI) and WHOQOL-BREF questionnaire.

Results

Median APACHE II, SAPS III and SOFA scores were: 6 (IQR 4.25–9.75), 16 (IQR 9.25-24), 2 (IQR 1-4.75) points, respectively. Median BI was 95 (IQR 90-100) and DASI was 9.3 (IQR 4.5-13). QoL scores for the physical (D1), psychological (D2), social (D3) and environmental (D4) domains were 63 (IQR 50–69), 69 (IQR 56–70.5), 75 (IQR 69–81), 75 (IQR 67.5–81), respectively. A statistically significant correlation was found between SAPS III and BI (R=-0.44), DASI (R=-0.48), D3 (R=-0.26) and D4 (R=-0.4). There was also a statistically significant correlation between APACHE II and both BI (R=-0.30) and DASI (R=-0.33). No correlation has been found between SOFA scores and analyzed outcomes.

Conclusion

QoL and functional status after discharge from ICU is acceptable. SAPS III seems more accurate for predicting soft outcomes in ICU survivors.

Use of neuromuscular blocking agents in general anaesthesia to bariatric surgery.

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Introduction

Obesity is often associated with serious perioperative complications, generally in aspects of difficulties in intubations and postoperative respiratory failure. Using of neuromuscular blocking agents (NMBA) during anaesthesia is significant in providing correct anatomy conditions during intubation manouvers and respiratory efficiency after anaesthesia.

Aim of study

The aim of the study was to appraise use of NMBA (types and doses) in patients who underwent general anaesthesia to bariatric surgeries.

Materials and methods

Medical documentation of patients who underwent bariatric surgery under general anaesthesia in Department of Anaesthesiology and Intensive Care, Medical University of Białystok, from January 2016 to December 2016 was studied. After excluding a group of patients with incomplete medical history, the data of 107 patients (female: 76, male: 31) aged from 18 to 67 (mean age: 44,78 SD=11,73) with perioperative score ASA I-III (ASA I: n=25, 23%; ASA II: n=57, 54%; ASA III: n=25, 23%) was analyzed using STATISTICA 12.5.

Results

The characteristic data of patients was: total body weight of 87 to 180kg (mean: 128,11kg SD=21,87), height of 140 to 195cm (mean: 167,04cm SD=11,05), BMI of 30,61 to 69,53kg/m2 (mean: 45,93kg/m2 SD=7,58).

In induction phase of anaesthesia, depolarizing NMBA (suxamethonium) was used in 99 patients (92,5%) in dose of 70 to 200mg (mean dose: 111,21mg SD=24,26), and non-depolarizing NMBA (rocuronium) was used in 8 patients (7,5%) in dose of 50 to 100mg (mean dose: 65mg SD=22,04).

In maintenance phase of anaesthesia, 11 patients did not receive NMBA, cisatracurium (non-depolarizing NMBA) was used in 14 patients (13%) in dose of 8 to 15mg (mean dose: 10,5mg SD=1,74), and rocuronium was used in 82 patients (77%) in dose of 10 to 140mg (mean dose: 68,39mg SD=20,99).

The postoperative score in Aldrete's scale was: 10 points in 100 patients (93,5%), and 9 points in 7 patients (6,5%).

The duration of general anaesthesia was from 40 to 200 minutes (mean time: 120,42min SD=38,62).

Statistically significant use of suxamethonium in induction phase of anaesthesia and use of rocuronium in maintenance phase of anaesthesia was not observed.

The analysis presented significant correlations between dose of rocuronium in maintenance phase of anaesthesia and patient's total body weight (ρ=0,28), height (ρ=0,43) and BMI (ρ=0,26).

Conclusion

Although not statistically significant, the study presented that suxamethonium in induction phase of anaesthesia, and rocuronium used in maintenance phase of anaesthesia are safe and the most popular NMBA. In consideration of using rocuronium and adjusting its dose in maintenance phase of anaesthesia, the anthropometric data of patients (weight, height, BMI) are crucial aspects.

The evaluation of the 6th-year Polish medical students' abilities concerning ultrasound examination

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Introduction

Recently, ultrasound examination has grown to a significant diagnostic procedure. Because of its safety, quickness and possibility to repeat assessment it can be useful in most fields of medicine. Ultrasound examination can be conducted at a patient's bed which is of great significance in case of emergency. These features prompted us to carry out a survey among medical students to obtain their opinion about their learning ultrasonography experience.

Aim of study

The aim of our study was to assess the level of knowledge and skills of ultrasound examination, especially in emergency situations, among students of medicine in their final year in Poland.

Materials and methods

A survey among 6th-year medical students of 9 Polish Medical Universities was performed. The questionnaire contained 26 questions. In the survey there were 24 multiple choice questions (concerning teaching and possibility to conduct ultrasound examination independently; own assessment of their skills) and 2 open questions. For questions concerning opinion we used a Likert scale. In 8 universities a paper survey was performed and in one – online survey.

Results

We gained information from 878 students. Among them 81,4% were taught how to use, perform and interpret ultrasound in IV (54.7%), V (50,3%), VI (37,7%) year. Ultrasound was explained during radiology (79,3%), internal medicine (48,3%), surgery (33,8%) and anesthesiology (9,1%) courses . 78,7% of students performed ultrasound independently, but only 26% carried out an examination focused on life-threatening situations. Ultrasound assessment was performed more than once by 66,2% of surveyed. 74,1% of them consider time spent on emergency ultrasound definitely not sufficient and 40,7% definitely cannot perform such examination independently.

Conclusion

Even though students attended ultrasound activities they do not feel skilled enough to conduct ultrasound assessment, especially in emergency conditions. Therefore we suggest considering increasing the number of classes teaching ultrasound diagnostic or even creating a dedicated course.

BASIC SCIENCE

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Evaluation of follicle-stimulating hormone and luteinizing hormone in vitro impact on primary and metastatic non-small cell lung carcinomas

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Introduction

Pituitary-derived gonadotropins - LH and FSH, were found to promote cell proliferation in hormone-dependent cancers, particulary in studies concentrated on gonadal tumors. More recent data indicate that high gonadotropin levels may influence both gonadal and extragonadal tumorgenesis. Lung cancer, predominantly non-small cell lung cancer (NSCLC) type, is the most common cause of cancer-related deaths in men and women. Considering higher prevalence of lung cancer in women with hormonal imbalances, caused by age or hormone-related therapies, it would be essential to determine directly the influence of LH and FSH sex hormones on primary and metastatic lung cancer cells proliferative status.

Aim of study

Present study was aimed at in vitro evaluation of pituitary-derived sex hormones (LH and FSH) effects on both primary and metastatic non-small cell lung cancer cell lines to establish their role in cancer progression and metastasis.

Materials and methods

The study was conducted on primary (LXF-289) and metastatic (A549) non-small cell lung carcinoma (A549). Cancer cells were incubated in presence or absence of LH or FSH for 72-hours. Following incubation proliferation assessment was based on CFSE staining, and additionally, cell cycle status and viability was established with the use of propidium iodide (PI) and viability dye (7AAD) respectively. Data acquisition was performed on FACS Calibur flow cytometer.

Results

The results of our study revealed that LH and FSH effects significantly differ between primary and metastatic lung carcinomas. We found that primary LXF-289 cancer cells stimulation with LH or FSH had no effect on proliferation of these cells. On the contrary incubation with sex hormones greatly increased proliferation of metastatic A549 cancer cells. Furthermore, these data appears to be consistent with cell cycle analysis results, where reduction of G1-phase cells and concomitant increase in S-phase cancer cells was observed in response to LH or FSH in metastatic A549 cells indicating progression of cell division.

Conclusion

We demonstrated direct influence of pituitary-derived sex hormones - LH and FSH, on proliferation status of metastatic A549 non-small cell lung carcinoma cell line. Observed differences in response to hormones between primary and metastatic cancer cells suggest presumably crucial role of the studied sex hormones in the metastatic process. Subsequent experiments will confirm these results and allow for establishment of novel therapeutic targets that might modulate the observed effects.

The role of selective blockade of TRPV1 and TRPV4 in inflammation and modulation of mast cells activity in the mouse model of colitis

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Introduction

Inflammatory bowel disease (IBD), which consists mainly of Crohn's disease and ulcerative colitis is a group of gastrointestinal tract diseases with an unknown etiology.

Several treatment options are used in IBD therapy; the choice of the treatment depends on disease activity, behavior and extent. Analogs of 5-aminosalicylic acids administered orally or rectally are basic drugs. Glucocorticoids, anti-inflammatory agents or biological therapy are used when remission has not been achieved. In portion of patients none of available therapies is effective and surgical intervention is necessary. Therefore novel pharmacological treatment options are still sought in order to avoid the disabling procedures.

Recently, more attention is concentrated on the impairment of epithelial barrier, which leads to increased intestinal permeability seen in patients with IBD. Hyperactivity of mast cells residing in mucosal and submucosal layers of the intestine may be responsible for this modification in the function of the epithelial barrier. Furthermore, there is a growing interest in the transient receptor potential vanilloid (TRPV) family and its role in gastrointestinal disorders, with two most promising candidates for drug targets: TRPV1 and TRPV4. However, we lack the knowledge on a possible connection between both receptors and the function of mast cells.

Aim of study

We aimed to characterize the connection between the blockade of TRPV1 and TRPV4 receptors and mast cell function in the mouse model of colitis. Also, we wanted to distinguish the principal population of mast cells that may play a role in these interactions using immunohistochemical methods.

Materials and methods

The anti-inflammatory activity of TRPV1 and TRPV4 antagonists, respectively RN-1734 and SB-366791 (both 1 mg/kg, i.p., twice daily) was characterized in the mouse models of colitis induced by 2,4,6-trinitrobenzenesulfonic acid (TNBS). The extent of inflammation was evaluated based on the macroscopic score, microscopic score and quantification of myeloperoxidase (MPO) activity. Evaluation of the infiltration by mast cells was performed using immunohistochemical(IHC) staining of mouse colonic samples.

Results

SB-366791 at the dose of 1 mg/kg (i.p., twice daily) non-significantly reduced macroscopic score and ulcer score; RN-1734 non-significantly reduced ulcer score and MPO activity in the model of colitis induced by TNBS. IHC revealed differences in mast cell infiltration of colonic tissues in control and TNBS-treated mice, as well as upon blockade of the TRPV receptors.

Conclusion

We showed that the inhibition of TRPV1 and TRPV4 attenuates inflammation in the mouse model of colitis by decreasing damage scores. Although we did not achieve significant reduction in all parameters, we believe our research contributes to the field of IBD treatment and pathogenesis. We conclude that TRPV1 and TRPV4 are worth being considered as potential targets in the treatment of IBD.

Expression of the TGF superfamily ligands: BMP4 and BMP7 among patients with asthma in response to the challenge with specific or non-specific trigger

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Introduction

Asthma is a chronic, inflammatory disease of the respiratory tract that leads to the obturation and bronchial hyperreactivity. Chronic inflammation subsequently leads to the brocnchial remodeling. Resident lung fibroblasts and myofibroblasts are the primary source of extracellular matrix proteins which are released under the influence of growth factors such as Transforming Growth Factor (TGF)-β superfamily members, which include Bone Morphogenetic Proteins (BMPs). It was hypothesized that BMP 4 and 7 could modulate airway remodeling by inhibiting TGF-β1, which plays crucial pro-fibrotic role in asthma.

Aim of study

The aim was to evaluate mRNA expression of BMP4 and BMP7 among asthmatic patients to improve knowledge and understanding the pathophysiological mechanisms responsible for the development of the chronic bronchitis and, as a result, fibrosis and remodeling.

Materials and methods

The asthmatic patient group comprised 106 people diagnosed in compliance with GINA guidelines, based on clinical symptoms and lung functional activity. In that group 80 (75.5%) had mild or moderate asthma, and 26 (24.5%) severe. The control group consisted of 48 healthy volunteers. The spirometric examination and provocation challenges were performed in a hospital outpatient clinic, in compliance with ERS and ATS standards. The degree of asthma control was evaluated with the application of the ACT™. Information on drug administration was obtained from the patient's medical history. Venous blood was collected from the participants in test tubes filled with EDTA. RNA was isolated from peripheral blood lymphocytes (PBMCs) and was reversely transcribed. Each sample was analyzed by using qRT-PCR. Calculations of expression were made with 2-ΔΔCTmethod. The statistical analysis was performed with STATISTICA 12.

Results

BMP4 expression was significantly higher in the control group (2-ΔΔCT=0.187±0.089) than patient group (2-ΔΔCT=0.11±0.046) (p=0.04). It correlated with SMAD2 expression (R=0.512, p=0.03). No such correlations were found in regard of BMP7. Moreover, both BMPs expression were not correlated with IL-5 and IL-15 mRNA levels. BMP4 and BMP7 showed no significant correlations with spirometry measurements. No significant relationship was found between BMP4 and 7 expression and degree of asthma severity. Additionally, we did not observe any associations between used anti-asthmatics medications and BMPs mRNA level. BMPs 4 and 7 expression remained at the same level before, 1h and 24h after nasal provocation test and metacholine challenge.

Conclusion

We did not found any meaningful correlations that would indicate the importance of BMPs for the etiopathogenesis and course of asthma, apart from higher BMP4 expression among healthy subjects. Nevertheless, there were some limitations to our study, mainly that mRNA level in PMBCs might not directly translate into protein level in the lungs. Further studies are required to confirm these findings.

Does co-activation of opioid and cannabinoid receptors reduce opioid tolerance development in the gastrointestinal tract? – proof of concept

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Introduction

Peripherally-restricted opioids were proposed as promising therapeutics in diarrhea-predominant irritable bowel syndrome (IBS), as they alleviate abdominal pain and eliminate diarrhea. The development of tolerance to opioids is an important limitation of prolonged therapy with opioids. Recently, it was revealed that tolerance to morphine develops in the ileum, but not in the colon. It was also reported that the co-activation of opioid (OR) and cannabinoid (CB) receptors reduced the development of tolerance related to the analgesic effect of opioids in vivo.

Aim of study

The aim of our study was to validate a new research tool to study the development of tolerance to opioids in the gastrointestinal tract and to characterize the interactions between OR and CB receptors in this process.

Materials and methods

To assess the development of tolerance to opioids, an in vitro opioid-induced withdrawal response (WR) protocol was used. Isolated segments of the mouse ileum were mounted in organ baths and challenged with naloxone (10-6 M) to induce WR which was expressed as a change of smooth muscle tension prior to and immediately after exposure to naloxone. Morphine and WIN 55,212-2, agonists of OR and CB receptors (both 10-6 M), were used to validate this in vitro method.

The interactions between OR and CB receptors in tolerance development were evaluated using mixed agonists: salvinorin A (SA) and its derivative PR-38, which is devoid of action in the central nervous system (both at 10-6M). To determine the involvement of CB receptors, AM251, a CB1 receptor antagonist was used.

The effect of PR-38 on upper GI tract motility, the geometric center of GI tract and gastric emptying, was characterized in mice pretreated chronically with PR-38 (5 mg/kg, i.p., injected every other day for 14 days) and compared with animals treated acutely with PR-38 (5 mg/kg, i.p.).

Results

In the ileum exposed to morphine, naloxone induced a significant WR, while WR was not observed in the tissue exposed to WIN 55,212-2. In the ileum exposed to SA or PR-38, there was no WR. The CB1 antagonist AM251 evoked a significant naloxone-induced WR in the ileum exposed to SA or PR-38. PR-38 produced a significant slowing effect on upper GI transit, reduced gastric emptying and lowered geometric center of GI tract in comparison to control (no difference in PR-38 efficacy between acute and chronic administration).

Conclusion

The co-activation of OR and CB receptors using PR-38 significantly reduced development of tolerance to opioids in the GI tract. Mixed OR/CB agonists may be effective agents in prolonged therapy of GI disorders.

Role of lymphocytic infiltrate in neoplastic process of melanoma

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Introduction

Although the presence of tumour infiltrating lymphocytes (TIL) is a common finding in melanomas, there are still intriguing issues to be explained e.g: what is the strongest trigger of immune response or why and how the tumor is tolerated by immune response. The changes which happen in compound melanocytic nevi which transform to the melanoma, may bring us a closer look at this process.

Aim of study

To examine if the presence of tumor infiltrating lymphocytes (TIL) could indicate neoplastic transformation and which feature is the trigger of this infiltration.

Materials and methods

In total, 29 lesions (18 compound nevi (CN), 11 malignant melanomas (MM)) were examined using standard H&E approach followed by immunohistochemical analysis with CD3 and CD20 staining in CN, and CD4+ and CD8+ in melanomas. There were 3 locations which were taken into account: epidermis, tumor's parenchyma and dermoepidermal junction. The cells which showed the positive staining were counted using MultiScanBase v.18.03 software.

Results

In parenchyma there was significant difference in the number of CD3+ positive cells between compound nevi and melanoma ($p=0.0465$, mean(SEM) amount of CD3+ positive cells in MM was 220, and in CN was 136). In the dermo-epidermal junction area the difference between CD3+ positive cells was statistically insignificant ($p=0,0783$). In the epidermis in nevi as well as in melanomas CD3 positive cells were almost absent. Number of CD20+ positive cells was near to zero in all area of CN.

Conclusion

The preliminary results show a trend towards an important role of CD3 cells in mediating the neoplastic process in melanocytic nevi.

Virulence factors of pyogenic streptococci Streptococcus pyogenes and Streptococcus dysgalactiae subsp. equisimilis conditioning human organism colonization

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Introduction

Streptococcus dysgalactiae subsp. equisimilis (SDSE) is a pyogenic, Lancefield C or G streptococcal pathogen. Until recently, it has been considered as an exclusive animal pathogen. Nowadays, it is responsible for both animal infections in wild animals, pets and livestock and human infections often clinically similar to the ones caused by, solely human pathogen, group A streptococcus (Streptococcus pyogenes).

Aim of study

The main aim of this study was to evaluate if there are features differentiating animal and human SDSE isolates, potentially enabling their animal-to-human transfer, especially in virulence factors involved in the first stages of pathogenesis (adhesion and colonization), described also forStreptococcus pyogenes isolates.

Materials and methods

6 human SDSE strains, as well as 6 S. pyogenes strains isolated from superficial infections (from dermatitis, wounds, bedsores, skin abscesses) were obtained from medical diagnostic laboratory in Łódź. 6 animal SDSE isolates from clinical cases in pets (dogs – from wounds, skin abscesses) were obtained from veterinary diagnostic laboratory in Łódź.

The comprehensive identification of analyzed bacterial strains was conducted, including both phenotypic (MALDI-TOF) and genotypic (RISA, 16S rDNA sequencing) methods. The analysis of virulence factors comprised BLIS (bacteriocin-like inhibitory substances) active against human skin microbiota production, ability to biofilm formation, as well as the detection of 6 virulence genes in genomic DNA conditioning mainly adhesion and colonization. The emm-typing protocol, designed for M protein genotyping was also applied.

Results

The prevalence of virulence factors was various in analyzed groups of strains. The ability for BLIS production, active against Corynebacterium spp. microbiota strains, was positively evaluated only in human SDSE and S. pyogenes isolates. The ability to form biofilm was common in all analyzed strains. The prevalence of virulence genes was similar in human SDSE and S. pyogenes isolates, however the cbp (collagen-binding protein) gene was detected only in S. pyogenes genomes. In animal SDSE isolates emm (M protein) gene was not detected, as well as prtF1/2 (fibronecting-binding proteins) genes, whereas, they were common in strains isolated from humans.

Conclusion

Obtained in this research results clearly indicate that certain virulence factors might be necessary to colonize human organism, whereas they are not crucial in animal infections. The ability to combat human Corynebacterium spp. microbiota and possession of emm, prtF1 and prtF2 genes, detected only in human isolates, might be key factors enabling Streptococcus dysgalactiae subsp. equisimilis to transfer from animals and become human pathogens.

The investigation of the influence of duodeno-jejunal omega switch (DJOS) in combination with diet on glucagon-like peptide-1 and glucose-dependent insulinotropic peptide levels in Sprague-Dawley rats.

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Introduction

GLP-1 and GIP are incretins released from the digestive tract into the circulatory system in response to consumption. GLP-1 stimulates insulin release from pancreatic β-cells and inhibits glucagon secretion from α-cells. GLP-1 is know to improves peripheral insulin sensitivity, ameliorates glucose tolerance and promotes β-cell proliferation. High nutrition diet and bariatric surgery stimulate strong secretion of GLP-1 and GIP.

Aim of study

The aim of this work was to study the effect of the DJOS surgery on the GLP-1 and GIP plasma levels in Sparque–Dawley (SD) rats in diet induced obesity.

Materials and methods

For one month before surgery, seven-week old male SD rats (n= 22) were randomly assigned to two groups-the control group (DK) with was on normal chow diet (n=12) and the second group was fed a high fat diet HFD. In the first stage of the surgery distal to the duodenal bulb transection was conducted and distal part of transected duodenum was stitched. In one-half of the total small intestine length the second incision was performed. Afterwards an isoperistaltic end-to-end anastomosis was performed between duodenal bulb and selected loop. In the preoperative and postoperative period the body weight, GLP-1 and GIP were measured.

Results

Only the CD/HF group ($p < 0,05$) showed statistically significant changes of ΔGIP after SHAM and DJOS surgery. After DJOS surgery ΔGIP was statistically significantly lower in the CD/HF group compared with the HFD/HFD group ($p < 0,05$). After SHAM surgery the ΔGIP value was statistically significantly lower for the CD/CD group compared with the other groups and between the HFD/HFD and CD/HF groups ($p < 0,05$).

Conclusion

Statistically changes of almost all analysed parameters were observed in the CD/HFD groups following both, DJOS and SHAM surgery. It suggests that change of diet crucially affects all these parameters, independently of performed surgery. However, this type of surgery shown to be of fundamental importance for the GLP-1 serum concentration. GLP-1 levels increased following DJOS irrespective to body weight change.

Evaluation of miRNAs: miR-17 and miR-20a expression levels in patients with non-small cell lung cancer (NSCLC) before and after surgical treatment. Research for new biomarkers.

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Introduction

Lung cancer is one of the most common and death-causing carcinomas. Its etiopathogenesis has yet to be precisely recognized. The number of deaths caused by this cancer has grown rapidly over the years (1.26 million in 2000 vs. 1.69 million in 2015). Survival prognosis strongly depends on time of diagnosis, which is usually performed using traditional, time-consuming methods. The current research efforts are mainly focused on discovering molecular biomarkers that would be helpful in fast diagnosing, predicting clinical course and monitoring the disease progress. The results of many recent studies suggest such a role for miRNAs.

Aim of study

The aim of the research was to specify the profile of miRNAs expression: miR-17 and miR-20a among patients with NSCLC before and after surgical treatment to search for potential diagnostic and/or prognostic markers.

Materials and methods

All samples were collected from patients (n=35) with NSCLC (adenocarcinoma, n1=19, and squamous-cell carcinoma, n2=16) clinically verified in histopathological examination. Blood samples were collected before and after surgery. Total mRNA (including miRNA) was isolated from serum egzosomes. Relative genes expression level (RQ value) was measured using qPCR method. Statistical analysis was performed using Statistica Software version 13.1 PL (StatSoft, PL).

Results

Observed RQ values of miR-20a were higher in patients before than after surgical treatment: 2.02 (IQR: 0.85-20.54) vs. 1,14 (IQR: 0.86-10.04), respectively (p=0.044). The opposite relation was noticed formiR-17: 0.5 (IQR: 0.05-1.18) vs. 0.88 (IQR: 0.12-1.16). Expression levels of both miR-20a and miR-17 in samples before surgery varied in NSCLC histopathological types (miR-20a: SC: 1.1374 vs ADC: 5.2951; miR-17: SC: 0.89505 vs ADC: 0.1889). All differences were statistically significant. Moreover, miRNAs' expression level may depend on family history (FH): differences between positive and negative FH were discovered for miR-20a and miR-17 (before surgery, both statistically significant). RQ values of considered microRNAs varied between T1 and T2 stages of cTNM scale.

Conclusion

The observed statistically significant differences in expression levels of miR-20a before and after surgery suggest its role in NSCLC carcinogenesis. The results obtained for miR-17 and miR-20a, i.e., the differences between patients with adenocarcinoma and squamous-cell carcinoma, with negative vs. positive FH, indicate their impact on lung cancer disease prognosis and course. This allows us to consider them as potential diagnostic markers in NSCLC, differentiating also its histopathological subtypes.

The density of neurons in the dorsolateral orbital cortex is not affected in spontaneously hypertensive rats (SHR).

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Introduction

Attention-deficit hyperactivity disorder (ADHD) is a mental disorder which affects children and is characterized by hyperactive, impulsive and inattentive behaviors. In addition, children with ADHD are also characterized by poorly working memory. In human brain, working memory is localized in the dorsolateral part of orbitofrontal cortex (DLO), which is a part of the prefrontal cortex. However, as yet there is no morphological evaluation of this brain region in individuals with ADHD.

Aim of study

Was to compare numerical cell density in the DLO of the spontaneously hypertensive rats (SHR, animal model of ADHD) and Wistar Kyoto rats (WKY, healthy controls).

Materials and methods

Frozen brain sections from male SHR (n=6) and WKY (n=6) rats, which were 4 and 10 weeks old,were processed by immunohistochemistry using neuronal nuclear antigen as a neuronal marker. Stained cells were counted manually in the right and left DLO and the means were compared and evaluated statistically.

Results

show that there are no significant differences in the numerical cell density in DLO between SHR and WKY rats. There are also no significant differences in the neuronal density between right and left DLO in any case studied.

Conclusion

present results indicate that poorly working memory in individuals with ADHD is not caused by neuronal density alterations. However, further studies are required, as the changes in neurochemistry of DLO may be other important factors.

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The impact of high-fatty meal on barrier functions and inflammatory status of human vascular endothelial cells.

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Introduction

The vascular endothelium acts as a semi-selective barrier between the vessel lumen and surrounding tissue, controlling the passage of materials and the transit of white blood cells into and out of the bloodstream. Excessive or prolonged increases in permeability of the endothelial monolayer, as in cases of chronic inflammation due to high lipidemia may be one of the key factors of atherogenesis.

Aim of study

was to assess the effects of serum following fatty meal consumption on barrier functions and inflammatory properties of human vascular endothelial cells.

Material and methods

Human umbilical vein endothelial cells (HUVECs) were induced with serum of five healthy volunteers taken before and 3 hours following the consumption of standardized daily required dose of fatty meal. In sera, cholesterol and triglyceride levels were assessed. HUVEC integrity was measured in the of the Real-time Cell Electric Impedance Sensing system (RTCA-DP). mRNA expression of IL-33,monocyte chemoattractant protein-1(MCP-1), CX3C-chemokine, tight (occludin) and adherens (VE-cadherin) junction proteins was analyzed by real-time PCR. Additionally, viability and apoptosis with use of annexin-V and propidium iodide staining were assessed in flow cytometry.

Results

In all patients, concentration of triglycerides at 3rd hour after a consumption of fatty meal was increased (110±37mg/dl vs 182±64mg/dl). Postprandial serum caused 20% decrease of HEVEC integrity as compared to fasting serum ($p<0.0001$). HUVEC disintegration was accompanied by decreased of occluding mRNA expression($p<0.05$). However fatty meal affected neither VE-cadherin mRNA expression in endothelial cells nor their apoptosis as compared to fasting serum($p>0.05$). Postprandial serum caused 4-fold increase of IL-33 mRNA expression ($p<0.05$), and 2-fold increase of MCP-1protein and CX3C-chemokine($p<0.05$).

Conclusion

Even just one fatty meal may be enough to destabilize the endothelial barrier of young, healthy people and initiate inflammatory processes. High-fat diet may support atherogenesis .

The effect of enterolactone on the development of hepatic insulin resistance in HepG2 cells

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Introduction

Global epidemics of obesity and type 2 diabetes mellitus (T2DM) have spread extensively during the past two decades. It is commonly known that the main factor leading to the development of those two conditions is insulin resistance (IR). Lignans are a group of plant-derived compounds, represented by enterolactone (ENL). Although some phytoestrogens were well identified and widely investigated as a potential cure for hepatic IR and T2DM, there are no studies concerning enterolactone.

Aim of study

The main aim of the study was to determine if enterolactone, in the presence of elevated bioavailability of palmitic acid (PA), modulates IR markers (p-Akt, p-GSK, p-AMPK) and, therefore, affects hepatic IR in HepG2 cells.

Materials and methods

HepG2 cells were cultured for 5 days in Dulbecco's Modified Eagle Medium (DMEM) with 10% fetal bovine serum and 1% penicillin/streptomycin at 37°C in a humidified atmosphere of 5% CO2 in air. Subsequently, selected groups were incubated in the presence or absence of palmitic acid (0.5 mM) and/or enterolactone (50 μM). All measurements were performed after 16h incubation period. 100 nM of insulin (NOVORAPID) was applied to the different groups. Expression of selected insulin signalling pathway proteins was evaluated using the Western blot technique.

Results

The study revealed that incubation with ENL alone for 16h impaired expression of both pAkt and pAMPK, however not pGSK compared to control group in HepG2 cells. Considering the effects in PA+ENL group, there was a visible decrease in total expression of all three insulin signalling pathway proteins. Exposure to PA+ENL resulted in markedly reduced levels of both pAKT and pAMPK in comparison to control group, pGSK level was slightly reduced compared to CG.

Conclusion

To our surprise, enterolactone combined with palmitic acid decreased expression of all three insulin signalling pathway proteins – pAkt, pGSK and pAMPK. It is known that a reduced phosphorylation of AMPK leads to an impaired insulin and glucose tolerance, as well as to reduced phoshoprylation of Akt. Consequently, decreased expression of pAkt and pAMPK after exposure to enterolactone may enhance development of insulin resistance and, therefore, type 2 diabetes mellitus.

Impact of gene knockdown on dendritic cell's development

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Introduction

The dynamic field of dendritic cells' biology gives us ever new opportunities in such domains as immunology and cancer research. Among them, the plasmacytoid dendritic cells remain a considerably faintly understood group.

Aim of study

In the presented work I researched the role of chosen genes in the development and differentiation of classical dendritic cells (cDCs) and plasmacytoid dendritic cells (pDCs), with a strong emphasis on the less known pDCs, in order to better understand their biology.

Materials and methods

In the experiment, immortalized hematopoietic stem and progenitor cells were subjected to transfections with a lenti shRNA virus in order to knockdown researched genes: IRF7, Est1, phf17 and Zfp719. After the transfection differentiation into DCs was induced and after 4-5 days cell counting and flow cytometry were performed.

Results

The flow cytometry results and cell counts showed a strong impact of each of the genes on the survival and ratios of differentiation into cDCs and pDCs, compared to LacZ knockdown control. Normally highly expressed in pDCs, the genes proved to be crucial for their development – with the strongest effect observed for IRF7 knockdown.

Conclusion

These results give new insight into the DCs' biology and show possible footholds for influencing their function. This in turn will prove useful in designing vaccines, fighting infections and paving the way for new immunotherapy possibilities in cancer.

In the search for biomarkers of breast cancer progression – adiponectin taken into consideration

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Introduction

Breast cancer is the leading cancer in Europe and worldwide. Metastasis of breast cancer found mainly in brain, lung and bone is a complex event involving cross-talk of several proteins and is the most common reason of the mortality in the patients. Association of obesity with the risk of breast malignancies is well established fact, thus it is supposed, that adiponectin, a peptide hormone secreted from the adipose tissue, is responsible for breast cancer development as well as its progression and is of prognostic significance. Interestingly, it is reported that serum adiponectin concentration is inversely related to BMI. High adiponectin level is suggested as the factor which may decrease the risk of breast cancer but the exact mechanism, through which adiponectin modulates breast cancer risk remains unknown. Increased adiponectin concentration also plays a preventive role in the pathogenesis of atherosclerosis and diabetes as well as has anti-inflammatory properties. Thus, adiponectin is often considered as a protective hormone. This peptide exhibits insulin-sensitizing activity as well as inhibitory activity on the proliferation of various cell types, including aortic smooth muscle cells, endothelial cells, and several types of cancer cells.

Aim of study

The aim of our study was to measure the plasma level of adiponectin at various stages of disease development in murine model of metastatic breast cancer.

Material and methods

4T1 model of breast cancer was created by inoculation of tumor cells into the mammary fat pad of the immune-competent BALB/c female mice. The protein expression level of adiponectin in plasma collected 1, 2, 4 and 5 weeks after breast cancer cell inoculation was determined by Western blotting. The control groups were consisted of non-cancer mice. All the results were analyzed using One-way ANOVA followed by Newman-Keuls post-hoc test.

Results

Decreased plasma concentration of adiponectin in murine model of metastatic breast cancer with statistically significant differences comparing non-cancer control mice vs. mice 4 and 5 weeks after tumor cells inoculation was observed. We proved that the low concentration of adiponectin is correlated with the stage and malignancy of breast cancer.

Conclusion

In conclusion, lower plasma concentration of adiponectin is associated with an increased risk of breast cancer and particularly with its advanced stage. Thus, adiponectin can be of pathogenetic importance for the development of metastasis as well as may serve as additional prognostic factor. Our study is a great step to establish biomarker panel of breast cancer progression, which is essential for prognosis and treatment options.

The blockade of selected adipokines, FABP4 and leptin affects lower GI motility in mice: an attractive tool in the course of Irritable Bowel Syndrome?

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Introduction

Adipokines produced by white adipose tissue are in the spotlight as factors involved in the development of inflammatory bowel disease, metabolic syndrome or type 2 diabetes. However, their role in functional gastrointestinal (GI) diseases remains unknown. Irritable bowel syndrome (IBS) is the most commonly diagnosed functional GI disorder associated with altered motility, secretion and sensation. Some studies showed changes in the level of selected adipokines, e.g. leptin, in the serum of IBS patients. Moreover, our preliminary studies demonstrated significant changes in the expression of fatty acid binding protein 4 (FABP4) at mRNA level in patients with IBS. Therefore, identification of a relationship between the activity of WAT-derived proteins and the development of symptoms in IBS may help understand the pathophysiology of the disease and design new treatment options.

Aim of study

To investigate whether inhibition of FABP4 with or without simultaneous blockade of leptin receptor may affect lower GI motility in mice.

Materials and methods

Male balb/C mice were randomly allocated to one of four groups in a 2x2 design: 1) control group - injected with saline (i.p., s.c.); 2) treated with FABP4 inhibitor, BMS 309403 (i.p.; 1 mg/kg) and saline (s.c.); 3) treated with BMS 309403 (i.p.) and the leptin receptor antagonist, allo-aca (s.c.; 0.1 mg/kg); 4) treated with saline (i.p.) and allo-aca (s.c.). The experiment lasted for 14 consecutive days; the weight of animals was measured every morning before drug administration. The GI motility was assessed in faecal pellet output tests colonic bead expulsion (in 30 min intervals) test after 7 and 14 days of treatment. The expression of FABP4 and leptin at the mRNA and protein levels were quantified in the mouse serum and colon, using real-time PCR and ELISA, respectively.

Results

Nine mice were allocated to each group, their basal weigh was 22-26g, mean weights did not differ significantly among groups ($p>0.05$). Chronic administration of BMS 309403 (group 2) and BMS 309403 with simultaneous injection of allo-aca (group 3) significantly enhanced lower GI motility in mice after 7, but not 14 days of treatment. The serum protein levels of leptin and FABP4 were significantly elevated only in group 2; mRNA expression of leptin was significantly decreased in group 2, 3 and 4, but not in group 1, whereas mRNA expression of FABP4 was considerably increased in group 4. There were significant changes in animal body weight in group 3 and 4. BMS 309403 administered alone did not affect the weight of animals.

Conclusion

The inhibition of FABP4 has a potential in improving lower GI transit and indicates the involvement of FABP4 in alleviating constipation-related symptoms. The role of leptin receptor antagonist still requires further investigations.

CARDIOLOGY

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Novel speckle tracking technique for functional assessment of the right ventricle - tissue tricuspid annular displacement

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Introduction

Tissue tricuspid annular displacement (TTAD) is a new echocardiographic tool for functional assessment of right ventricle (RV) based on speckle tracking. It allows measurement of the displacement of the tricuspid annulus relative to the apex of RV in the standard apical four chamber (4CH) view.

Aim of study

The aim of this study is investigation if TTAD analysis might be used interchangeably with commonly used echocardiographic RV functional markers.

Methods

In this retrospective study we included 65 patients (44 men, mean age 63,89±14,68 years), who underwent 2D transthoracic echocardiographic examination. Two patients were excluded due to insufficient visualization of RV. Tricuspid annular plane systolic excursion (TAPSE) was measured. Afterward, off-line measurements of RV fractional area change (RV FAC), as well as line measurements of TTAD were obtained in 62 patients; 1 person was excluded due to artifacts affecting the proper analysis.

Results

The feasibility of TTAD is 95,4%. Mean values of RV FAC, the midpoint tricuspid annulus displacement towards the RV apex (TTAD mpt) and the percentage of the midpoint tricuspid annulus displacement (TTAD%) were 40,2±12,9%, 10,3±4,6 mm and 15±6,7%, respectively. The distribution of TAPSE values was not normal, therefore Spearman's rank correlation was performed for TAPSE vs TTAD mpt (rho=0,603, p<0,0001) & TAPSE vs TTAD% (rho=0,637, p<0,0001). Due to normal distribution of RV FAC, correlation coefficient was checked for RV FAC vs TTAD mpt (r=0,4448, p=0,0003) & RV FAC vs TTAD% (r=0,519, p<0,0001). TAPSE also correlated with RV FAC (rho=0,459, p=0,0002). AUC for TTAD mpt and TTAD% for detecting RV dysfunction defined as TAPSE <17 mm were 0,828 (p=0,0001) and 0,834 (p=0,0001) respectively. The threshold value of TTAD mpt of ≤11,5 mm had 100% sensitivity and 52,1% specificity, whereas the threshold for TTAD% of ≤11,9% had 78,6% sensitivity and 72,9% specificity.

Conclusion

TTAD analysis results correlate significantly with well-established RV function parameters such as TAPSE & RV FAC and it is applicable in a similar number of patients.

Arrhythmia as a predominant symptom of inflammatory myopathy.

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Introduction

Inflammatory myopathies (including polymyositis, dermatomyositis, overlapping syndromes) are chronic inflammatory diseases, that apart from causing muscle weakness and skin lesions may also affect internal organs. However, as cardiac manifestations seem to be uncommon, routine examinations, assessing function of the heart, are rarely performed. While in most patients cardiovascular disorders have no clinical implications, in some cases those symptoms are predominant and influence significantly course and pattern of the disease.

Case Report

Case A: 67-y/o female was diagnosed 5 years ago with heart failure, cardiac arrhythmias (sick sinus syndrome, paroxysmal atrial fibrillation, atrial flutter, paroxysmal atrial tachycardia). During hospitalization first symptoms of myopathy appeared, based on clinicalsymptoms and laboratory test results (positive ANA, Mi-2, Ro-52 tests) the diagnosis of polymyositis was posed. Increased CPK and myoglobin levels improved after introduction of glucocorticosteroid and azathioprine therapy. Due to deterioration of arrhythmia (syncope due to pauses >10 sec) she was qualified for peacemaker implantation after achieving remission of polymyositis. During next 4 years heart failure has exacerbated, after additional examinations patient was qualified for ICD/CRT-D/CRT-P replacement. Echocardiography and MRI, performed during first hospitalization, revealed decreased ejection fraction, which has deteriorated over time from 52% to 30%.

Case B: Male, aged 67, developed first symptoms of myopathy, as well as skin lesions on hands and elevated temperature in 2011. Due to concomitant respiratory symptoms – dyspnoea and chronic cough – he was diagnosed with pneumonia and further examinations were not performed. As the respiratory symptoms remained constant he was diagnosed 5 years later with pulmonary fibrosis and bronchiectasis. When patient was admitted to hospital to perform lung biopsy, he was transferred to cardiology ward with suspicion of myocardial infarction. He was diagnosed with atrial flutter and scheduled for elective cardioversion. Echocardiography revealed decreased ejection fraction, valvular lesions, abnormal size of left atrium, while MRI - lesions, that indicated inflammatory aetiology. Moreover, patient presented elevated troponin activity, increased CK and myoglobin levels. Cardiac disorders enabled to raise a suggestion of systemic disease. Polymyositis was confirmed. Currently, therapy has alleviated majority of clinical symptoms (muscle weakness, dysnpnoe, palpitations), but supraventricular arrhythmias are still observed in 24h ECG monitoring.

Conclusion

Cardiac involvement may be the first symptom of polymyositis. Patients with polymyositis may develop subclinical arrhythmias. Although there are no such guidelines, it seems that echocardiography and ECG-Holter monitoring are worth performing in this group of patients.

AF symptoms relationships – establishing correlations

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Introduction

Even though, atrial fibrillation (AF) is often asymptomatic, it can cause frequent symptoms, affect patient's functional status, and impair their quality of life. The European Heart Rhythm Association (EHRA) recently proposed an AF symptom scale based exclusively on patient-reported symptoms and their impact on daily activities.

Aim of study

To investigate the relationship between the EHRA symptom class and Holter parameters: 24-h mean heart rate (HR), maximum and minimum HR, day- and night- time mean HR, 24-h mean SDNN (standard deviation of all RR intervals of sinus rhythm), day- and night-time mean SDNN, 24-h mean rMSSD (square root of mean sum of squared differences between consecutive RR intervals) , day- and night- time mean rMSSD; age and gender.

Material and methods

A total of 26 consecutive patients (mean age 71 ±9 years) with persistent AF treated in the Department of Interventional Cardiology and Cardiac Arrhythmias of the University Clinical Hospital Military Memorial Medical Academy in Lodz were investigated. Symptom severity was evaluated using the EHRA classification system. The symptom severity data were collected by telephone survey.

Results

The majority of AF patients 17 (65%) were symptomatic (EHRA≥2) and 7 (27%) had severe or disabling symptoms (EHRA 3-4). The only factor tested that showed a correlation with EHRA symptom class was night-time mean HR (r=0,47; p=0,02).

Conclusion

Although, the EHRA reflects physicians perspectives of patients health status and may be beneficial tool in the clinical evaluation to guide decisions on therapy, there was no significant correlation between the symptom severity measured by the EHRA class and HR, heart rhythm, gender nor age. Only night-time mean HR was slightly correlated with EHRA symptom class. However, individual differences in presenting symptoms may have a bearing on clinical practice and need further investigation.

Types of left atrial appendage morphology. Is recurrence of atrial fibrillation depends on left atrial appendage morphology?

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Introduction

Left and right atria have structures called appendages. Risk of embolic events is increased in patients with thrombus in left atrial appendage with atrial fibrillation. In left atrial appendage (LAA) thrombus forms definitely more often. Several classifications is using to divide left atrial appendage morphology.

Aim of study

The aim of study was assessment of left atrial appendage morphology in selected population and its affecting of frequency of AF.

Materials and methods

The retrospective study included a group of 112 patients (77M;35W) at the average age of 61 ± 10. Left atrial appendage morphology decay was assessed using Wang and Kimura classification based on CT (cauliflower,chicken wing, windsock, cactus) Affecting LAA morphology of frequency AF recurrence was also assessed.

Results

Cactus morphology in LAA was observed in 36 patients (32%) – 22 men (61%) and 14 women (39%), chicken wing in 33 patients (30%) – 24 men (73%) and 9 women (27%), cauliflower in 28 patients (25%) – 23 men (82%) and 5 women (18%) and windsock in 15 patients (13%) – 8 men (53%) and 7 women (47%), $p>0,05$. AF recurrence was observed in 51 patients (46%) – 34 men (67%) and 17 women (33%).

Conclusion

The most frequent left atrial appendage morphology was cactus and the rarest was windsock morphology. We can not definitely exclude that LAA morphology has influence of atrial fibrillation recurrence.

Apnea-hypopnea index in patients with acute myocardial infarction with and without ST segment elevation

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Introduction

Sleep apnea (SA) is proven to be associated with increased risk of adverse cardiovascular events. Polysomnography is recommended to diagnose SA, however, the apnea/hypopnea index (eAHI) may also be calculated from Holter recordings.

Aim of study

Assessment of eAHI in patients (pts) with acute myocardial infarction with ST segment elevation (STEMI) and without ST elevation (NSTEMI)

Material and methods

Clinical data of 139 pts (48 females, LVEF 40±12%, age 67±24 years, STEMI- 47 pts, NSTEMI- 92 pts) hospitalized for MI were analyzed retrospectively. Holter recordings were performed at fifth day of acute MI. Control group consisted of 50 pts suspected of coronary heart disease without significant lessions in coronary angiography.

eAHI index was calculated from Holter recordings, and eAHI>15 was thought to indicate a high probability of SA.

Results

Both groups with STEMI or NSTEMI had higher prevalence of eAHI>15 than the control group (66% vs. 50% vs 14%, with p15 was found in STEMI pts (p=0.07). eAHI was higher both in STEMI pts - 24,6±17,1 and NSTEMI pts - 19,4±15,8 compared with controls - 8,4±8,3, p<0.001). There were no differences in eAHI in pts with different STEMI location.

Conclusion

Sleep apnea features measured with eAHI were found to be frequent in patients with recent myocardial infarction, especially with ST elevation. Further observation is needed to obtain the clinical relevance of this finding, and to prove that Holter monitoring might be used as a screening tool in diagnosing SA.

Long-term clinical outcome and predictors of major adverse cardiovascular events among patients with selected metabolic disorders

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Introduction

Different glucose abnormalities (GA), in particular diabetes mellitus (DM) and impaired glucose tolerance (IGT), in patients after acute myocardial infarction (AMI) have a significant impact on prognosis. They are associated with a higher risk of death, but the relation between GA and major adverse cardiovascular events (MACE) is less convincing.

Aim of study

The aim of the study was to evaluate the influence of GA on MACE especially on the incidence of hospitalizations due to decompensated heart failure in patients with AMI treated invasively.

Material and methods

Single-center, prospective study encompassed 665 patients with acute myocardial infarction who were treated with percutaneous coronary intervention (PCI) and were discharged to ambulatory care. The study population was divided into four groups with respect to different GA: diabetes mellitus diagnosed before admission (pre-hospDM, n = 177), newly detected diabetes (newDM, n = 95), impaired glucose tolerance (IGT, n = 122), impaired fasting glucose (IFG, n = 45). The control group consisted of patients with normoglycemia (NGR, n = 226). MACE were defined as the occurrence of either: death, myocardial infarction, PCI, coronary artery bypass grafting, hospitalization for decompensated heart failure, stroke. The median follow-up period after AMI was 31 months.

Results

The long-term observation revealed significantly higher risk of MACE in group with pre-hosp DM (50.3%) and newDM (50.5%) than in the control group (38.1%; both $p<0.05$). These differences resulted mainly from higher mortality in the group with pre-hospDM (20.9%) and newDM group (14.7%) compared to the NGR (5.3%; all $p<0.05$) and higher risk of hospitalization for decompensated heart failure in pre-hosp DM group (6.2%) and newDM group (10.5%) compared to NGR group (1.3%; both $p<0.05$). The risk of hospitalization due to decompensated heart failure was also higher in the IGT group (7.4%; $p<0.05$) compared to control group. In the IGT group more patients experienced subsequent myocardial infarction compared to the control group (14.8% vs. 8%, $p<0.05$).

Conclusion

In patients with AMI treated invasively, both diabetes mellitus diagnosed before admission to the hospital and newly detected during in-hospital period, increases the risk of major adverse cardiovascular events during the long-term observation. Both forms of diabetes are associated with higher mortality and the risk of hospitalization for decompensated heart failure compared to patients without glucose abnormalities. Patients with IGT have higher risk of hospitalization due to decompensated heart failure which may result from higher incidence of myocardial infarction in this group.

ECG features of left ventricular hypertrophy in patients with hypertrophic cardiomyopathy (HCM) - the relation with SCD risk.

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Introduction

Hypertrophic cardiomyopathy (HCM) is a disease of the heart muscle which is usually genetically determined. One of the most important parameters characterizing it is increased thickness of the wall of the left ventricle, which cannot be explained solely by improper load. The risk of sudden cardiac death (SCD) is also higher.

Aim of study

Assessment of electrocardiographic criteria for left ventricular hypertrophy (LVH) in patients (pts) with hypertrophic cardiomyopathy(HCM) having different risk of SCD.

Materials and methods

Clinical data of 15 pts (9 females, age 59+/-9 years) with HCM was analyzed retrospectively. Seventeen ECG criteria for LVH were evaluated and compared to echocardiographic results. SCD risk was calculated using web HCM risk calculator and results >4% were regarded as increased.

Results

Among 27 patients with HCM, 15 patients with electrocardiographic QRS duration <110 ms were included into the study. In all cases 17 electrocardiographic indicators of the left ventricular hypertrophy were analyzed. All parameters showed rather low sensitivity (7 - 60%), the highest sensitivity was presented by Romhilt-Estes scale (60%) and SV1 / SV2 + RV5 / RV6> 35 mm (60%) index. In patients with the SCD-Risk score > 4% there were less ECG features of the left ventricular hypertrophy than in patients with a lower risk. The history of both syncope and nsVT was more frequent in patients without LVH criteria in ECG.

Conclusion

According to the results, ECG criteria for LVH are not commonly present in HCM patients and cannot be used to confirm left ventricular hypertrophy. Moreover, the relation between ECG criteria of LVH and SCD risk is unclear. The history of syncope and nsVT seems to be a powerful factor in calculation of the risk of SCD.

Is Postural Orthostatic Tachycardia Syndrome (POTS) causing the fatigue in Marfan Syndrome (MFS)? A case report of POTS coexisting with mixed vasovagal syndrome (VVS) in a patient with MFS, thoracic aortic aneurysm and chronic fatigue syndrome (CFS).

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Introduction

Fatigue occurs in 70% of patients with MFS. POTS remains largely underdiagnosed but when directed studies are conducted POTS is recognized in 40% of patients with CFS. Moreover, in one study POTS occurred in 80% of patients with Ehlers–Danlos' syndrome, a similar to MFS genetic connective tissue disorder. However, to this date fatigue in MFS was usually associated with tall posture and dysfunction of the heart valves and only few reports suggested possible contribution of orthostatic intolerance and autonomic dysfunction.

Aim of study

To report on first case of POTS diagnosed in a patient with MFS and CFS, as well as to provide a possible explanation and to discuss the challenging treatment.

Materials and methods

We present a case of 30-year-old male with MFS, complicated by aortic aneurysms and dissections, coexisting POTS and mixed vasovagal syndrome, as well as hypertension and II°type I atrioventricular block. The patient reports daily orthostatic presyncopes and rapid fatigue. Physical examination recognized typical MFS body with Ghent Systemic Score of 7.

Results

A 15-minute active verticalization test was used to diagnose POTS (heart rate rise of 35/min, with mild blood pressure elevation, progressive fatigue and acrocyanosis) while tilt table testing revealed underlying mixed VVS. In Multidimensional Fatigue Inventory (MFI-20) the patient scored higher in all categories except Mental Fatigue. Psychological analysis showed no signs of depression or anxiety.

Conclusion

This is the first report linking CFS in MFS with POTS. We conclude that patients with MFS should undergo targeted tests for POTS and the vasovagal syndrome especially those presenting with fatigue.

CARDIOSURGERY & INTERVENTIONAL CARDIOLOGY

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Periprocedural complications rate in patients on anticoagulation therapy, who need cardiac electronic device surgery

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Introduction

The number of application of implantable cardiac electronic devices (CIEDs) in a wide spectrum of arrhythmias is constantly growing. It is estimated that more than 40% of patients undergoing CIED surgery receive anticoagulation therapy (ACT) due to coexisting morbidities. There is continues and unfulfilled need for the evaluation of the safe and influence of ACT on the risk of bleeding complications at the time of CIED implantation.

Aim of study

The study was designed to assess the risk of bleeding complications in patients receiving ACT at the time of CIED surgery and the utility of the HAS-BLED scale in the prediction of bleeding events.

Materials and methods

We performed a prospective study in 226 consecutive patients undergoing CIED (pacemakers, cardioverter-defibrillators and cardiac resynchronization therapy devices) implantation. Among all patients included to the study: 127 patients required the use of ACT, and 99 patients was a control group. ACT group was then divided into subgroups depending on the type of ACT receiving during the five days before the CIED implantation: I- vitamin K antagonists (VKA, n = 70), II- new anticoagulants (NOACs, n = 22), III-bridging therapy with low molecular weight heparin (LMWH , n = 15), IV concomitant treatment with antithrombotic agents (APT + ACT, n = 20). The investigation based on routine blood tests taken before and after CIED surgery. Pre-implantation bleeding risk was assessed using HAS-BLED scale. A significant bleeding complication was defined as a bleeding incident requiring pocket exploration, blood transfusion or decrease in hemoglobin concentration more than 1 mmol/L. An irrelevant bleeding complications was defined as pocket hematoma not requiring any intervention, subcutaneous hematoma or ecchymosis.

Results

Bleeding complications were significantly more frequent in the ACT group compared to controls, 62.9% vs. 35.45% (OR 3.0; 95% CI: 1.74 to 5.29; p = 0.0001). The incidence of major bleeding was comparable in the ACT group and control group, 7.1% and 6.06%. Serious bleeding complications were detected in 4.3% in I subgroup, in 4.5% in II subgroup,, in 13,3 % in III subgroup and in 15% in the APT + ACT. The incidence of pocket hematoma did not differ significantly between the group ACT (35.9%) and control (24.25%). The risk of bleeding evaluated before surgery with a HAS-BLED scale correlated with a decrease of hemoglobin concentration in the ACT group (p = 0.026, r = 0.25).

Conclusion

Treatment with ACT does not significantly increase the risk of major bleeding complications after CIED surgery. Results of our study suggest that HAS-BLED scale cannot be recommended in prediction of overall postimplantation bleeding events in patients receiving ACT, but may be helpful in predicting serious bleeding.

Artificial Heart- soon or far in the future? Evaluation of technological progress.

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Introduction

The increase in the number of patients with end-stage heart failure and the progressive demanding for donor heart transplants have been a major stimulus for Total Artificial Heart development. This is a relatively new device, right after VAD, the most important component of Mechanical Circulatory Support (MCS) therapy.TAH - primarily intended as a bridge to heart transplantation, is used even when the VAD has too many contraindications. However, the ultimate goal is to use it as a destination therapy. Fully-implanted TAH, present on the market, is very promising, also because there are no components of the transcutaneous drive unit that promotes infection. Still, there are a lot of troubles with their size, biocompatibility or failure. These, yet not fully refined mechanisms, do not discourage their inventors from further work, because they stand before the revolution on a global scale.

Aim of study

The aim of this study is to assess the technological progress in the development of Total Artificial Heart among with the current developmental and clinical use in patients and to assess such information as survival, complications and causes of death.

Materials and methods

The study included an analysis of a group of patients who had Total Artificial Heart implants.To evaluate,classified the patient cases who were implanted with Carmat TAH, AbioCor TAH (fully implanted with internal controllers) and those with TAH with external controls such as CardioWest TAH, SynCardia TAH. The obtainedresults come from a variety of sources, mainly from scientific articles and publicly available information on the TAH website.

Results

Survival is strictly limited by the type of TAH used. Devices with external controllers are characterized by much higher survivability (survival rate is 70% in 1 year, 50% in 5 years, 45% in 8 years) than TAH with internal controls where it is much smaller. The external drive system is an important source of infection. In addition, the results clearly show that the use of biological materials is associated with a significantly lower number of thromboembolic events.

Conclusion

Work on TAH is still under development, but the results clearly show that improving some of the devices that reduce the incidence of thromboembolic events, the appropriate size and weight of TAH, and its reliability and adaptability to the physiological state of the patient may be the standard for heart failure therapy.

The occurrence of the new onset AF after CTI-ablation procedure – clinical variables influence

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Introduction

The subsequent occurrence of atrial fibrillation (AF) after the ablation procedure for treating cavotricuspid isthmus-dependent atrial flutter (CTI-AFL) is frequently seen in patients without a history of atrial fibrillation before ablation during the clinical follow-up. However, the predictors of this condition are still controversial.

Aim of study

To evaluate the incidence of AF in patients after successful catheter ablation of typical AFL and variables (age, gender, hypertension, heart failure, diabetes mellitus, LV ejection fraction, LV hypertrophy, LA enlargement, RV enlargement, mitral regurgitation) associated with higher incidence of AF during follow-up.

Materials and methods

A total of 28 consecutive patients who underwent CTI ablation of typical documented AFL from January 2011 to August 2016 in the Department of Interventional Cardiology and Cardiac Arrhythmias of the University Clinical Hospital Military Memorial Medical Academy in Lodz were investigated. The assessment whether patients were diagnosed with this condition was based on electronic medical follow-up record. A telephone survey was used to evaluate the symptom severity.

Results

During a mean follow-up of 47±18 months AF occurred in 12 (43 %) of the patients after successful catheter ablation. The half of AF patients were symptomatic (EHRA≥2). The univariate analysis revealed one clinical variable - LVEF < 50 % associated with the occurrence of AF after RF catheter ablation of AFL (p=0,03). The multivariate analysis demonstrated that only LVEF was independently associated with the development of AF.

Conclusion

Although catheter ablation of flutter circuit is effective, a new-onset AF after this procedure occurred in a significant percentage of patients during the follow-up. AF following AFL ablation plays a vital role in the selection of further management of this patient subset. The clinical variable associated with the occurrence of AF after CTI ablation of typical atrial flutter in patients with no AF history before ablation was LVEF <50%.

Recurrence of atrial fibrillation in patients after first- time catheter ablation- affecting factors. EHRA score before and after intervention assessment.

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Introduction

Respected therapeutic method of atrial fibrillation (AF) is catheter ablation even if its effectiveness is less than 100%. Proper selection of patients for this treatment is very important.

Aim of study

The aim of the study was to evaluate first-time catheter ablation treatment efficacy and analysis of the factors affecting the recurrence.

Materials and methods

A study group consists of 102 patients with AF (67 men; 35women). Retrospectively examined the clinical data: age, sex, left atrial appendage morphology, left atrial appendage opening diameter, left atrial appendage magnitude, left atrial diameter, atrial fibrillation type (paroxysmal, persistent), CHAD2-VASc score, comorbidities (arterial hypertension, type 2 diabetes, dyslipidemia) and previously electrical cardioversion on recurrence of AF. Also assessed the type of ablation (RF, cryoablation). After 2,3+/- 1 year, the clinical data were collected based on an interview. An improvement of EHRA score by at least one grade we recognized it as an improvement in clinical condition.

Results

In 48 patients (47%) – 31 men (65%) and 17 women (35%) AF recurrence was observed, $p>0,05$. Left atrial diameter (>4cm) is the only independent factor affecting recurrence of AF,$p<0,001$. There were no effect of the following factors: age, sex, left atrial appendage morphology, left atrial appendage opening diameter, left atrial appendage magnitude, atrial fibrillation type, CHAD2-VASc score, comorbidities (HA, DM type 2, dyslipidemia) and previously electrical cardioversion. Improvement in clinical condition after ablation was in 87 patients (85,3%), no changes before and after intervention in 11 (10,8%) and aggravation in 4 (3,9%).

Conclusion

In approximately half of patients recurrences of AF after first-time catheter ablation appear. In patients with enlarged diameter of left atrium the risk of recurrence of arrhythmia is increasedwhen compared to other patients with normal diameter. Catheter ablation beneficially affects on improvement in the clinical condition of majority of patients.

Alternative method of aortic valve implantation - TAVI - case report.

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Introduction

Aortic stenosis is a decrease of the aortic opening. The result of the narrowing is impediment of left ventricular outflow into aorta. The most common cause of heart defect is degeneration with derivative calcification. Treatment depends on presence and severity of symptoms and operation risk. The operation should be considered in moderate stenosis (AVA 1-1,5 cm2) with other cardiac surgery planned or severe aortic stenosis (AVA <1 cm2) with symptoms such as syncope, coronary disease and heart failure.

TAVI is transcatheter aortic valve implantation – an alternative treatment of aortic stenosis for patients with severe symptomatic restriction of aortic opening, not qualifying to AVR.

Case Report

An 80-year-old patient with severe aortic stenosis, hypertension, hypercholesterolemia, left ventricular hypertrophy, EF 51%, multivessel coronary disease was admitted to the Cardiosurgery Department for TAVI. Patient after amputation of the left lower limb because of arterial thrombosis which caused acute ischemia (2015) and percutaneous implantation of stentgraft to abdominal aorta because of aneurysym (2014).

In October 2016, coronarography was performed in which a multivessel coronary artery disease was diagnosed. Significant changes included left anterior descending artery with a 90% construction and amputation of right coronary artery. Due to changes in LAD, it was decided to perform PCI before TAVI. Implanted DES Orsirio 4.0 x 18 stent with optimal effect.

In TEE there was severe aortic stenosis with moderate regurgitation and widening of ascending aorta. There was found tricuspid aortic valve with massive calcification. AVA 0.8-0.9 cm2, 23mm ring, bulb 39 mm, STJ 35 mm, ascending aorta 46mm, EF 51%. In ECG sinus rhythm, 60/min, LBBB, LAH.

Because of concomitant diseases, the patient was classified by the Heart Team for TAVI. Operation was performed under general anesthesia, with anterograde access. The patient has undergone left ministernotomy in apex view. Punctured ventricle, inserted implant kit. Edwards Lifesciencies SAPIEN 3 26mm valve was expanded in rapid pacing. The procedure was performed without complications, in TEE and angiography small leakage.

The patient was in ICU for 5 days. Extubated in the day of operation. In second postoperative day psychosis occurred. In the control TTE: a small leakage, maximal gradient 20 mmHg, mean gradient 10 mmHg, hypokinesis of inferior and posterior wall, EF 57%. The patient was discharged home after week's hospital stay in generaly satisfactory state.

Conclusion

TAVI is an alternatve treatment for patients with severe, symptomatic aortic stenosis.

This metod is minimally invasive – it can be performed in patients with high risk of complications and death during surgery.

The possibility of anterograde access, surgery can be performed in patients with diseases of peripheral vessels.

Health-related quality of life after transcatheter and surgical aortic valve replacement in patients with severe aortic stenosis

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Introduction

Transcatheter aortic valve implantation (TAVI) and minimally invasive aortic valve replacement (MIAVR: mini-thoracotomy, mini-sternotomy) have become an appealing alternative to conventional surgical (SAVR) treatment of severe aortic stenosis (AS) in high-risk patients. Quality of life (QoL) after above mentioned treatment options have not been widely investigated.

Aim of study

The aim of this study was to evaluate QoL in patients with diagnosed AS and treated with TAVI, SAVR, mini-thoracotomy and mini-sternotomy.

Materials and methods

The study group consisted of 173 patients with symptomatic AS. TAVI group consisted of 39 patients (22.5%), mini-sternotomy was performed in 44 patients (25.5%), mini-thoracotomy in 50 (29%) and SAVR in 40 patients (23%). QoL was assessed perioperatively, 12 and 24 months after aortic valve replacement (AVR) by Minnesota Living with Heart Failure Questionnaire (MLHFQ) and EQ-5D-3L. All patients were operated by the same team of either cardiac surgeons (SAVR, mini-thoracotomy, mini-sternotomy) or interventional cardiologists with cardiac surgeons (TAVI).

Results

Median follow-up was 583.5 (IQR: 298-736) days. Improvement of health status after procedure in comparison with pre-operative period was significantly more often reported after TAVI inperioperative period (90.3%; p=0.004) and 12 months after procedure (100%, p=0.02). Global MLHFQ, physical and emotional dimension score at 30-day from AVR presented significant improvement after TAVI in comparison with surgical methods (respectively for each dimension: 8.3(±8.6), p=0.003; 4.1(±5.9), p=0.01; 1.5(±2.6), p=0.005). Total MLHFQ score was significantly lower (better outcome) in TAVI patients one year after procedure (4.8(±6.8), p=0.004), no differences in somatic and emotional component were found after one year observation. No differences were found in MLHFQ score 24 months after AVR. Data from EQ-D5-3L questionnaire demonstrated significant improvement of QoL at 30-day follow-up after TAVI in comparison with surgical methods (1.2(±1.7), p=0.0008). No differences were found between analyzed groups in EQ-5D-3L questionnaire 12 and 24 months after procedure.

Conclusion

TAVI improves QoL in perioperative and 12 months observation in comparison with mini-thoracotomy, mini-sternotomy and SAVR. Improvement in QoL was obtained in both generic and disease specific questionnaires.

Clinical outcomes in patients after previous sternotomy and undergoing transcatheter aortic valve implantation for treatment of severe aortic stenosis

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Introduction

Transcatheter aortic valve implantation (TAVI) is comparable with surgical aortic valve replacement (SAVR) in terms of mortality in patients with severe aortic stenosis (AS). Previous cardiac surgeryincreases periprocedural risk for treatment of AS. Furthermore, influence of previous sternotomy on clinical outcomes in patients undergoing TAVI is still uncertain.

Aim of study

To assess the influence of previous cardiac surgery with sternotomy on clinical outcomes and quality of life (QoL) after TAVI.

Materials and methods

A total of 148 consecutive patients with symptomatic, severe AS and treated with TAVI were enrolled.Baseline data, procedural and long-term clinical results as well as the frailty and QoL assessment with EQ-5D-3L questionnaire were compared between patients with and without previous cardiac surgery with sternotomy. Median follow-up was 15.8 (IQR:6.4-33.1) months. Clinical endpoints and adverse events were evaluated on the basis of the Valve Academic Research Consortium 2 definitions.

Results

Patients with previous sternotomy represented 23.0% of the study population. A periprocedural risk measured with Logistic Euroscore and STS scale was similar for both groups. Patients with previous cardiac surgery with sternotomy were younger and more often men, with higher rate of previous myocardial infarction [26 (22.8%) vs. 22 (64.7%), p=0.001] and lower median of left ventricle ejection fraction [60.0 (50.0-65.0) vs. 50.0 (42.0-60.0)[%], p=0.004]. Furthermore, no differences in the presence of frailty features was observed. There were no differences in 30-day and 12-month all-cause mortality between groups [sternotomy(-) vs. sternotomy(+): 10 (8.8%) vs. 2 (5.9%); p=0.73, age/gender adjusted OR (95%CI): 0.60 (0.11-3.19); 20 (17.5%) vs. 2 (5.9%); p=0.09, age/gender adjusted OR (95%CI): 0.23 (0.05-1.15)]. However, at the longest available follow-up mortality was higher in patients without previous sternotomy [30 (26.3%) vs. 3 (8.8%); p=0.032, age/gender adjusted OR (95%CI): 0.16 (0.04-0.64)]. The only independent predictors of all-cause death at follow-up were incomplete coronary revascularization [OR (95%CI): 5.45 (2.38-12.52); p=0.001], estimated glomerular filtration rate [OR (95%CI) per 1 ml/min/1.73 m2 increase: 0.96 (0.94-0.98); p=0.001], and previous stroke/transient ischemic attack [OR (95%CI): 2.86 (1.17-7.00); p=0.021]. Similar rates of other complications including bleeding, stroke, myocardial infarction after TAVI were noted. No differences between groups in all components of EQ-5D-3L questionnaire were confirmed at baseline and 12 months of follow-up.

Conclusion

TAVI seems to be a safe and effective technique for the treatment of severe AS in patients with previous cardiac surgery with sternotomy. Higher long-term mortality in patients without previous sternotomy was related probably to some differences in age and baseline risk profile between groups.

Evaluation of clinical outcomes after transcatheter and surgical aortic valve replacement for treatment of severe aortic stenosis

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Introduction

Transcatheter aortic valve implantation (TAVI) and minimally invasive aortic valve replacement (minithoracotomy and ministernotomy) have become an attracitve alternative to conventional surgical treatment (SAVR) of severe aortic stenosis (AS) in high-risk patients.

Aim of study

To evaluate long-term clinical outcomes in patients with symptomatic AS treated with TAVI, surgical aortic valve replacement with full sternotomy (SAVR), minithoracotomy or ministernotomy.

Materials and methods

A total of 173 patients with symptomatic AS were enrolled to the study. Propensity scores were calculated for TAVI and each surgical method separately. Differences in clinical outcomes between patients treated with TAVI and those treated with surgical methods were adjusted for propensity scores using a logistic regression analysis and presented as adjusted odds ratios with 95% confidence intrervals.

Results

A median follow-up of the patients was 583.5 days (interquartile range, 298–736 days). No differences in ejection fraction (EF) were reported between the groups before aortic valve replacement (AVR). One week after AVR, mean EF values were higher in patients after TAVI in comparison with the surgical treatment groups (TAVI, 50.2%±13.1%; minithoracotomy, 44.1% ±13.4%; ministernotomy, 37.8%±12.8%; SAVR, 40.3% ±12.5%; p=0.001). There were no differences in the longest available follow-up mortality between the groups (p=0.8). New-onset atrial fibrillation (NOAF) after TAVI was reported in 7.7% of patients. No differences in NOAF incidence were observed between the groups. Furthermore, after the propensity score match, no differences between TAVI and surgical groups was confirmed (TAVI vs minithoracotomy, p=0.08; TAVI vs ministernotomy,p=0.08; TAVI vs SAVR,p=0.3). Higher risk of new left bundle branch block (LBBB)(7.9%,p=0.01) and new third-degree atrioventricular (AV III) block (10.5%,p=0.01) were reported in patients after TAVI. No differences in the risk of new LBBB were found between TAVI and surgical methods after the propensity score match (TAVI vs minithoracotomy, p=0.08;TAVI vs ministernotomy, p=0.08; TAVI vs SAVR p=0.3). The incidence of new AV III block was higher after the propensity score match in TAVI group as compared with minithoracotomy and ministernotomy (TAVI vs ministernotomy and TAVI vs minithoracotomy:13% vs 0.0%, p=0.02).

Conclusion

Patients undergoing TAVI presented more beneficial long-term clinical outcomes in comparison with surgical groups and do not differ in terms of the longest available follow-up mortality. TAVI seems to have a more favorable effect on LV function and an increase in EF in comparison with the surgical methods.

Direct vs conventional bioresorbable vascular scaffold implantation in acute coronary syndrome. Initial data from a 12 months follow-up.

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Introduction

Current guidelines recommend optimal lesion preparation with adequate predilatation before implantation of a bioresorbable vascular scaffold (BVS). On the other hand such aggressive predilatation might increase the risk of distal embolization and subsequent flow disturbances.

Aim of study

The aim of this study was to compare the clinical and angiographic outcome of direct and conventional BVS implantation in acute coronary syndrome (ACS) in a 12 months follow up.

Materials and methods

93 ACS patients with total number of 114 Absorb Everolimus-eluting bioresorbable scaffolds implanted in a single center in years 2013 - 2015. 32 patients (34%) had ST-elevation MI, 58 (62%) non ST-elevation MI and 3 (3%) unstable angina. Mean age was 61±11years. After a follow up of 27±9 monthstelephonic questionnaires concerning myocardial infarction, repeated coronary angiography, underwent percutaneous or surgical revascularization, stroke and adherence to dual anti-platelet therapy were performed. A p value of <0.05 was considered to be significant.

Results

No significant differences in demography and baseline clinical presentation in the direct and conventional groups. Also no significant differences were detected in the rates of initially prescribed ticagrelor or prasugrel and incidences of switch from ticagrelor or prasugrel to clopidogrel in both groups. We found a trend for a better outcome in the direct group, yet without statistical significance.Device oriented composite end point (DOCE) defined as target lesion myocardial infarction, target lesion revascularization or restenosis occurred in 5 (11%) patients from the conventional group and in 1 (2%) cases from direct group (p=0,203).

Conclusion

Our work showed encouraging results for the direct BVS implantation in ACS patients, although a study with greater sample size is needed.

Predictors contributing for recurrence of ventricular tachycardia in patients undergoing implantable cardioverter-defibrillator or cardiac resynchronization therapy with defibrillator device and ischemic etiology of heart failure after catheter ablation

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Introduction

It is known that adequate implantable cardioverter-defibrillator (ICD) shocks have been associated with increased mortality. Catheter ablation of ventricular tachycardia (VT) is invasive treatment with patients experiencing recurrent arrhythmias. However some data showed that recurrence rates of VT at 6 months post-ablation may be up to 50 %.

Aim of study

The aim of the study was to assess potential predictors of recurrence of VT in patients with ischemic etiology of heart failure (HF) treated with catheter ablation.

Materials and Methods

From among 178 patients who had VT ablation between 2004 and 2016, the group of 113 patients with ischemic HF, ICD or cardiac resynchronization therapy with defibrillator (CRT-D) was selected. The data about basic characteristic, procedural and follow-up was obtained retrospectively.

Results

From among 113 analyzed patients 71,7% had ICD and 26,6% CRT-D, 87,6% were male, the median age was 66 years, and the median left ventricular ejection fraction was 26%. The acute successful of ablation reached 92.9%, the heart scar was observed in 83,2% of patients during ablation. During the median follow-up of 1091 days (25% percentile of 379 days , 75% percentile of 1995 days), in 26,6% of patients VT recurred. Correlation between VT recurrence and the use of Ic group of antiarrhytmic drugs (54,6% of patients treated with Ic drugs vs. 23,7%), type of implanted device (41,4% of patients with CRT-D vs 20,9% with ICD), and arterial hypertension (30,5% of patients with hypertension vs. 8,3% without hypertension) were observed.

Conclusion

The risk of VT recurrence after ablation in patients with ischemic HF reached almost 27% and is higher in patients with CRT-D, arterial hypertension and those treated with Ic group of antiarrhythmic drugs.

Keywords: ventricular tachycardia, ablation, implantable cardioverter-defibrillator, cardiac resynchronization therapy.

Association of A69314G polymorphism of TNAP gene in the patient with acute coronary syndrome with the modified risk factors

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Introduction

Tissue nonspecific alkaline phosphatase (TNAP) – protein, playing significant role in the tissue mineralization.TNAP belongs to the activators of the calcification processes in the atherosclerotic plaque. Complicated plaque rupture of the coronary vessels leads to the organ's ischemia and development of acute coronary syndrome (ACS).

Aim of study

To conduct the analysis of the connection of A69314G of the gene polymorphism TNAP in the sick people with ACS with some modified risk factors.

Materials and methods

The dark blood of the 118 sick people with ACS and of 110 almost healthy people was used. Distinguishing of the A69314G polymorphism was conducted with the help of the method of polymerase chain reaction with the further analysis of the restriction fragments' length.

Results

In the patients with the body mass index (BMI) < 25 kg/m2 the connection between the various genotypes according to the A69314G polymorphism and development of ACS ($\chi2$=0.027; P=0.869) was not revealed. In the individuals with BMI ≥ 25 кг/м2group of control the frequency of the genotypes (A/A, A/G+G/G) comprised 85.9 and 14.1% and in the patients with ACS – 68.0 i 32.0% ($\chi2$=7.558; P=0.006). In homozygotes with the A/A main allele there is no connection between the size of the BMI and development of ACS ($\chi2$=1.413; P=0.235). The number of patients with A/G + G/G genotype and the BMI < 25 and the BMI ≥ 25 kg/m2 in control group was 38.9 and 61.1% and number of patient with ACS – 13.9 and 86.1% ($\chi2$=4.339; P=0.037). During the analysis of the influence of the allele variants with A69314G polymorphism on the BMI, depending on the stage of obesity in the patients with ACS the authentic statistic significance was not revealed ($\chi2$=2.467, P=0.481). In those, who do not smoke, there is no connection of the examined polymorphism with the development of ACS ($\chi2$=1.831; P=0.176). Among the smokers the frequency of genotypes A/A and A/G+G/G in the control group comprised 86.2 and 13.8% and among the patients with ACS – 64.8 and 35.2% ($\chi2$=4.310; P=0.038). Among the individuals with A/A genotype the correlation of the smokers and non-smokers in the control group comprised 72.8 and 27.2%, and in the patients with ACS – 57.3 and 42.7% ($\chi2$=4.616; P=0.032). In the patients with A/G+G/G genotype those who smoke and those who do not smoke in the control group there were 77.8 and 22.2%, and among the patients with ACS – 47.2 and 52.8% ($\chi2$=4.582; P=0.032).

Conclusion

In the patients with the BMI ≥ 25 kg/m2 there is connection of A69314G polymorphism of TNAP gene with the development of ACS. ACS risk in the patients with A/G+G/G genotype is higher than with A/A genotype. In the smokers with A/G+G/G genotype the risk of ACS is higher than in the individuals with A/A genotype."

Impact of the access site on daily changes in platelet count and allied hemoglobin level after TAVI.

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Introduction

Transcatheter aortic valve implantation (TAVI) is an increasingly used technic to treat patients with symptomatic aortic stenosis. Several studies have indicated that a platelet count (PLT) drop as well as a hemoglobin (HGB) decline, are both independent predictors of poor outcome after TAVI. Aortic valve may be implanted from different access sites: transfemoral, transsubclavian, transaxillary, transaortic and transapical.

Aim of study

Our goal was to assess whether the access site has an impact on the pattern and relation between PLT and HGB changes after TAVI.

Materials and methods

Among the consecutive 293 pts (79.9±7.5 years, 68% female, EuroSCORE=22±12%) treated with TAVI (Aug 2009–December 2016), serial changes in PLT and HGB were measured prior to and daily 7days post procedure.

Results

Valves were implanted from transfemoral (85.8%), transsubclavian&axillary (7.9%), transaortic (3.4%) and transapical (3.0%) sites. An early PLT drop was seen on day 1, reaching nadir PLT on day 2-3 post procedure (Δ%PLT1=27±14% and Δ%PLTmax=43±15%, both $p<0.001$, respectively). An early HGB decline was seen on day 1st, reaching nadir HGB level at day 2-3 post procedure (Δ%HGB1=14±9% and Δ%HGBmax=22±13%, both $p<0.001$, respectively). Patterns of an early PLT response and HGB decline were both equal among different access sites (Fig A and B, respectively), with equal Δ%PLTmax but increasing Δ%HGBmax for transfemoral vs transsubclavian&axillary vs transaortic+apical (22±14 vs 24±5 vs 28±20, $p=0.030$ respectively).

Conclusion

An access site has no impact on the platelet count response after TAVI, but a relative hemoglobin decrease is greater for transaortic and transapical access sites.

Inaccuracy of a contemporary high resolution (1024x1024) digital angiography in evaluation of a left main coronary artery stenosis. A case series study documenting the unique role of a high-quality intravascular ultrasound for the left main precise evaluation.

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Introduction

A significant narrowing of a left main coronary artery (LMCA) results in a large ischemic territory and thus impacts patients' mortality. Its identification is commonly carried out with invasive angiography, performed currently with digital angiographs featured with high-resolution detectors (1024x1024 pixels). Despite that, frequently it is hard to establish a diagnosis and thus an intravascular ultrasound (IVUS), characterized with a bigger spatial resolution and tomographic view, is used to verify LMCA anatomy.

Case Report

To present a case series of 4 selected patients (mean age 65.5±7.2 years, 1 ♀) with ambiguous LMCA anatomy recognized with AXIOM SiemensTM 1024x1024 angiograph and defined with visual semi-quantitative assessment as 40-70% DS, in whom high-quality IVUS (GalaxyTM2 & 40 Mhz Atlantis SR Pro transducer) was performed. We give a detailed angiographic and IVUS insight into the anatomy of various configurations of LMCA narrowing (e.g. ostial vs distal lesions), accomplished with volumetric analyses of IVUS and a series of respective angiographic pictures selected from loops taken at 15fps. Further, we performed quantitative coronary analyses presenting data on %DS and minimal lumen cross-sectional areas.

Conclusion

Our study, illustrated with a series of detailed angiographies and complementary IVUS pictures, provides a practical (dynamic and realistic) and unique insight into the most frequent scenarios of LMCA narrowing.

Bilateral internal mammary grafting in diabetic and non-diabetic patients: one center's experience

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Introduction

Coronary artery disease (CAD) is the leading cause of death in patients with diabetic mellitus (DM). Coronary artery bypass (CABG) surgery with arterial conduits is considered optimal as a treatment of CAD for diabetic patients. Studies have demonstrated the long-term benefit of bilateral internal mammary artery (BIMA) use for CABG for this group of patients. Bilateral internal mammary artery grafting is performed to provide full arterial myocardial revascularization with the intention of decreasing postoperative return of angina and the need for reoperation. Unfortunately, this method may reduce sternal blood flow and impair wound healing, and the primary reason for avoiding the use of BIMA is the risk of deep sternal wound infection (DSWI), which occurs significantly more often in diabetic patients.

Aim of study

The aim of the study was to assess frequency of complications – DSWI after coronary bypass grafting (CABG) with use of both internal thoracic arteries in diabetic and non-diabetic patients (in one center).

Materials and methods

This is a retrospective study including all patients who underwent CABG with using LIMA and RIMA graft from January 2014 to December 2016 in the Department of Cardiac Surgery, Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University. The analysis was conducted on data collected from medical records of patients. We analyzed 112 patients: male – 90 (80,4%), female 22 (19,6 %). Their mean age was 61,55 ± 7,8 years. The inclusion criteria were: 1) CABG with bilateral thoracic arteries through the median sternotomy, 2) two surgeons. Patients were divided into two groups as diabetic - 31 (27,7%) and non-diabetic - 81 (72,3%). The following main concomitant diseases were revealed: hypertension (HT) – 86 (76,8%) hyperlipidemia – 67 (59,8%).

Results

Using both internal mammary arteries for coronary artery bypass grafting surgery in our research groups (alike diabetic and non-diabetic) did not bring negative complications as deep sternal wound infection

Conclusion

Deep sternal wound infection in diabetic patients undergoing median sternotomy in coronary artery bypass grafting is very dangerous but a rare complication. In our research – this risk of DSWI in group of diabetic patients is the same as the risk in group of non-diabetic.

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Botulinum toxin application as the alternative and conservative treatment method of pathological, anterior disc displacement in TMJ

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Introduction

Temporomandibular disorders (TMD) is a term called group of dysfunctions, which involve masticatory muscles, temporomandibular joint and other, functionally and morphologically associated tissues, together with central nervous system. They are the major problem in today's dentistry, next to the caries and periodontal diseases and are called „social diseases'' by some general practiotioners. Articular disc displacement (ADD) is one of the most common cause of TMD and it can be the etiological factor of pathological acoustic phenomenons in TMJ. Except for characteristic cracking or popping sounds, the patient can complain about: chronic headaches and pain in the condylar process – articular disc complex, particularly during eating, speaking and yawning or problems with jaw motions. As generally agreed, the main couses of the pathology are: hyperactivity of the upper head of the lateral pterygoid muscle and its anatomic insertion into the articular disc. There are several treatment methods of ADD, but the first-line method should be conservative and the second, if is necessary – surgical. Application of the botulinum toxin belongs under the first group and is rarely selected and underestimated treatment possibility in Poland.

Aim of study

Presentation of alternative treatment method of anterior articular disc displacement using botulinum toxin.

Materials and methods

There are two injection methods of botulinum toxin in the upper head of the lateral pterygoid muscle: intra- or extraoral. In the first one, the needle should be injected between lateral pterygoid plate of the sphenoid and coronoid process of the mandible. In the second one, we inject botox through the mandibular notch – opening restricted by mandibular processes and zygomatic arch. Botox dose, which is generally used for the upper head of the lateral pterygoid muscle, in case of articular disc displacement for Botox product is 30-35U and the concentration of solution is - 5U/0,1ml. Minimum effective dose (MED), accurate toxin application in the place under treatment and 3-month breaks between subsequent injections are factors, which increase effectiveness of botox and reduce probability of occurance unpleasant for patient - postoperative side effects.

Results

Intramuscular injection of botulinum acid affects on the neuromuscular junction, causing muscle paralysis by reducing the secretion of acetylocholine to synaptic gap. It leads to partial or complete reduction of spasmodic activity in the superior head of the lateral pterygoid muscle and then to return the articular disc to its anatomical position in TMJ.

Conclusion

Thanks to the high effectiveness and low number of adverse effects, botox constitutes innovative solution both the patients, who start treatment of their articular disc displacement and the people, who have been treated for a long time, using conventional methods, like the occlusal splint and farmacotherapy, which did not provide clinical results.

PTFE tape - a missed chance?

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Introduction

Polytetrafluoroethylene (PTFE) was invented by accident, however, it was found very useful in many areas, including in medicine. Its potential for dentistry was discovered nearly a quarter century ago by British dentist - Howard Stean. Despite this, numerous, even if somewhat chaotic publications have recently begun to emerge. Was the potential of PTFE overlooked? Or maybe in the face of technological progress in dentistry, we could say that the golden age of PTFE still ahead of us?

Aim of study

The aim of this work was to present the wide spectrum of possibilities that PTFE tape brings to restorative dentistry, endodontics, prosthodontics and implant prosthodontics, taking into account both clinical and ergonomical aspects of work with this material. An additional goal was to compare contemporary ways of PTFE application with those solutions proposed 24 years ago.

Materials and methods

Study was based on mixed methodology: it combined a systematic review of literature from 1993 till 2016 as well as clinical case reviews. Basis for study were publications from web databases and own experience as well as clinical documentation.

Results

Study presents numerous PTFE tape applications in both restorative dentistry and endodontics. Solutions proposed 24 years ago were compared to those, which are mentioned in publications nowadays. Notably, the evolution of dental treatments methods clearly shows, that the development of some techniques means the supersession of others. The potential of polytetrafluoroethylene in dentistry has been noticed by a narrow group of dentists nearly a quarter century ago, however, it has only recently gained more publicity. This fallow period in PTFE publications seems odd in the face of the numerous presented applications of this material in dentistry.

Conclusion

Almost a quarter century ago PTFE could have revolutionized many aspects of clinical work and be used ever since. However, there are many indications that the renaissance of teflon in dentistry is yet to come, which can bring significant benefits to both dentists and their patients.

First Aid in dental trauma – the assessment of publics' knowledge

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Introduction

The knowledge and ability to the deliver First Aid by those who witness dental trauma should increase the successfulness of subsequent medical treatment. Instant and proper First Aid delivered to the tooth after injury is particularly important

Aim of study

The purpose of this study was to assess the general public's knowledge range on providing correct First Aid in cases of oral cavity trauma.

Materials and methods

The questionnaire covered 727 people divided into groups depending on: age, number of children, occupation connected with school education or medicine. Obtained results of age groups, education of respondents, number of children owned, participation in First Aid courses and schemes of dental trauma First Aid treatment procedures, were analyzed.

Results

577 (79.4%) out of 727 people participated in First Aid training courses. However, in only 16.3% of cases (94 people), dental trauma issues were included. Almost one third of questioned people, witnessed dental trauma, half of these people (109 – 46.2%) tried to provide First Aid. The most frequent injury 48.9% (114 cases) was soft tissue trauma. 83 (37%) out of 223 parents were witnesses of hard or soft tissue trauma. Medical and education employees constituted 360 of questioned. 36.4% (131) of these witnessed dental injuries.

Conclusion

Medical first aid courses uncommon involve the schemes of procedures in cases of oral cavity soft and hard tissues injuries. Despite that fact, every other person attempted First Aid course tried to provide first aid in case of oral trauma; however their actions were incorrect in most cases. The knowledge on First Aid procedures should be widely promoted, especially within the medical and education professions, as these groups are most likely to witness teeth injures. In the examined group, parents most often were the witnesses of their children's dental trauma. It appears that specially parents should increase their knowledge and the schemes
of First Aid dental procedures because the success of further treatment depends on proper and rapid reaction.

Oral Cancer: Presentation And Treatment In Bangladesh

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Introduction

Presentation and treatment of oral cancer is of utmost important because a good oral health enables a person to eat, speak as well as to socialize without active discomfort or embarrassment. Oral cancer, the eleventh most dominant cancer in the world, mostly affects the area of lips, tongue, mouth, salivary glands and oropharynx. So in this paper, we will discuss about the effective changes in presentation and treatment of oral cancer in Bangladesh.

Case Report

The research design was longitudinal and we took convenient type samples. We apparently viewed 150 patients diagnosed for oral cancer for various causes in Sylhet MAG Osmani Medical College in the period between july 2015 and June 2016. It was random sampling, the data collection was questionnaire where data collection procedure was face to face. The results reported that 35% were males and 65% were females. The age groups were 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80. Furthermore, oral cancer was greatly notified in 40-50 ages' people. The affected sites were floor of the mouth, hard palate, soft palate, lips, oral cavity, parotid gland, vestibule of mouth, uvula, submandibular gland, tonsil, tonsillar fossa, anterior surface of epiglottis, bronchial cleft, oropharynx. Among all sites, tongue, oral cavity and parotid gland were the greatest affected sites. Successful outcome was gained.

Conclusion

For maintaining oral cancer, the greatest challenge is the lower socio-economic people of Bangladesh. It is the burning question that how we can treat the patients of oral cancer. The aim of this presentation is to convey the importance of presentation and treatment of oral cancer in Bangladesh.

Evaluation of Mandibular Body Fracture Treatment Method Utilizing Digitally Designed Platelet Based on CBCT Image Prior to the Reponation Procedure. Pilot Study

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Introduction

Traumas, especially mandible fractures are frequent conditions that maxillofacial surgeons encounter. Main principle during surgical procedures was stabilization of bone pieces. Modern technologies give us opportunity to approach this problem from different point of view. Utilizing 3D simulation technology surgeons may not only perform osteosynthesis but also restore function and stabile occlusion to the patient.

Aim of study

The aim of the current study was to evaluate clinical utility of individually designed platelet in treating mandibular body fractures based on anatomical mesurements of maxillofacial diameteres.

Materials and methods

Analysis was based on animal specimen (total of 10 sheep skulls). CBCT of the jaws was performed prior to the fracture. Then the researchers applied force at various angles with enough strength to fracture base of the mandible. That procedure required special preparation: due to post mortem concentration we had to cut of masticatory muscles to anable jaws opening. Another CBCT was performed. Relying on its results bone fragments were virtually reponated. Emulated image was saved in .stl format, was sent to 3D printer and provided base for modelling the platelet. 3D printed prosthesis was utilized during the procedure of fracture reponation. After succesful surgical operation controll CBCT's was performer. Pre-fraction CBCT and final one were compared: sagittal, horizontal and vertical dimensions were measured and anatomical conditions were compared.

Results

Comparison of sagittal, horizontal and vertical diameteres shows mostly compatible mesurements. Occlusal conditions seem stabile with no signs of occlusal disturbance and pathology. In spite of sheep skulls are very usefull as anatomical mock-up in pre-clinical reaserch, it is impossible to evaluate function of jaws. We can only predict that correct anatomy and correct static occlusion will remain a base to proper TMJ and bite function.

Conclusion

Results are expected to confirm clinical importance of chosen method and to provide favourable anatomical and occlusal conditions on animal specimen. Furthermore, it might significantly shorten time and facilitate the procedure to an operating surgeon.

Treatment of A Large Arteriovenous Malformation in the Maxillofacial Region. Case Report.

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Introduction

Arteriovenous malformations (AVMs) are congenital vascular anomalies featured by an abnormal fistulous connection between the supplying artery and the draining veins without an intervening capillary bed. These lesions may not be detected at birth and are usually revealed by excessive hemorrhage after trauma, prior tooth extraction and hormonal changes.

Case Report

A 15-year-old, intelectually disabled girl presented to the hospital with spontaneus, moderate bleeding from the periodontal space of the left mandibular second molar. A physical examination showed face asymmetry with enlarged, more prominent zygoma and slight skin erythema. CT angiogram revealed presence of an expanding, highly vascularised, osteolytic lesion of the left mandible which infiltrated masseter muscle and cheek on the left side. The external carotid artery was dilated and the expanded drenaige veins appeared with the nidus in the arterial phase simultaneously. The maxillofacial AVM was then diagnosed and patient was qualified to digital subtraction angiography followed by superselective bilateral embolization of the branches from the maxillary arteries with coils and particles.

During further observation patient was administered periodically for control CT angiography, which showed progression of the extent of the lesion with dilating of draining veins and involvement of the further arteries, such as left ophtalmic and both facial arteries. The primary complaint was recurrent bleeding, therefore a total of seven embolizations was performed with administration of various embolic materials such as Onyx, histoacryl glue, coils and particles.

The last hospitalization was complicated with life-threatening bleeding localized in maxillary artery supply and the decision of the occlusion of infraophtalmic segment of left internal carotid artery was made. It was considered due to fact that patient has undergone embolism of these artery in the childchood and no flow by left anterior cerebral artery and middle cerebral artery was maintained. However the treatment proved to be unsuccessful and surgical ligation of the the bleeding arteries was performed.

Conclusion

Embolization is the treatment of choice in the young patients in whom surgery should be avoided because of the risk of excessive intraoperative bleeding and mutilation of still growing bone structure. However complete embolization is often impossible to achieve, especially when the atreriovenous malformation is large and the feeding arteries inaccessible to catheterisation. The result of partial embolisation and surgical proximal ligation of the feeding arteries is increased angiogenesis leading to recanalisation and reconstitution of AVM manifested in recurrent bleeding.

DERMATOLOGY

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Relationship between depressive disorders, sleep disorders and psoriasis - Evaluation of clinical data.

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Introduction

Psoriasis is a complex, chronic and multifactorial inflammatory disease that involves hyperproliferation of keratinocytes in the epidermis and an increase in the epidermal cell turnover rate. Psoriasis does not affect survival directly , but may have significant detrimental effect on quality of life (QOL). It can interfere with every day activities, may lead to social stigmatization, and generate psychological distress. These effects of psoriasis beyond skin affliction are seldom recognized and often undertreated.

Aim of study

Evaluation of the relationship between psoriasis, quality of sleep and prone to depressive disorders.

Materials and methods

From January 2015 to February 2017, 47 patients who were hospitalized in the Department of Dermatology and Venereology at the Medical University of Lodz, were included in this study. The group consisted of 31(66%) males and 16 females (34%) . Time of the initial diagnosis varied, with the average of 9 years. All patients went through the basic medical interview with emphasis on sleep disorders, rated measures of disease such as Psoriasis Area and Severity Index (PASI) and Body Surface Area (BSA). Furthermore, patients filled questionnaires: Dermatology Quality of Life Index (DLQI) and Beck Depression Inventory (BDI). Clinical data has been gathered and analyzed.

Results

Analysis showed that sleep disorders occurred in 23 patients (48,94%)-males (69,57%) and females(30,43%), with the most common complaint being: waking up at night and difficulty with falling asleep. A significant link was found between depressed mood and psoriasis. Almost 8,5 % (4) of the participants had total BDI score suggestive of moderate depressive symptoms. A severe change in the quality of life (DLQI≥10 points) was found in 29 patients, with similar frequency among females(62.5%) and males(61.29%) .

Conclusion

Patients with psoriasis have an increased risk of psychiatric comorbidities and sleep disorders. A relationship between the severity of psoriatic lesions and the depression seems to exist as found within our study group. A multidisciplinary approach utilizing both dermatologic care and easily available access to psychological intervention may be crucial and should be encouraged in order to achieve optimal management of this disease.

Evaluation of anti-aging effectiveness after treatment of 20% L-ascorbic acid concentrate

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Introduction

Beauty treatment should affect mature skin effectively and it should be able to penetrate through the hydrolipid coating. Micro-needle mesotherapy is a physical method promoting the penetration of active substances. As a result of such treatment, microchannels are formed through which L-ascorbic acid penetrates into the living layers of the epidermis increasing the efficiency of its cellular activity. Pure L-ascorbic acid is a hydrosoluble vitamin that is essential for the skin. Vitamin C has depigmenting as well as antioxidant activity properties. Moreover improves the cutaneous microrelief and therefore it boasts highly effective anti-wrinkle action.

Aim of study

The aim of the study was to assess the effectiveness of pure L-ascorbic acid activity in anti-aging therapy using a micro-needle mesotherapy. In vivo studies will allow for the assessment of the impact of active substances on skin firmness and elasticity, the degree of hydration and the level of skin tone.

Materials and methods

The study was performed on a group of 25 healthy volunteers in accordance with the Declaration of Helsinki of 1964. This study obtained the approval of the Ethics Commissions No. RNN/281/16/KE 2017. Serum containing 20% L-ascorbic acid with hydrate from strawberries was applied, in the amount of 2.5 ml, directly to facial skin before micro-needle mesotherapy. The pH of serum was 3.5-4. This procedure was performed every 10 days, in a series of 4-6 treatments. Tested products were prepared individually prior to treatment. The measurement of the forehead and cheeks skin was done using Cutometer®, Corneometer®, Mexameter®. Photographs were taken using Fotomedicus system. Serum was tested for microbiological purity and stability. During the study all of volunteers were under a dermatologist's care. Statistical analysis was performed using Statistica (StatSoft 12. 0 Poland). A p-value <0.05 was considered as significant for all tests.

Results

Regular treatment with L-ascorbic acid with micro-needle mesotherapy was associated with improvement of skin hydration and elasticity after 4 and 8 weeks of therapy. The application of the product for six weeks resulted in the alignment of skin color, moisture, elasticity and noticeable lightening of the skin. Participants did not report any adverse effects associated with treatments. Highly stable formula of L-ascorbic acid did not become oxidized thereby increasing the spectrum of its activity.

Conclusion

In vivo studies confirmed the effectiveness of pure L-ascorbic acid used with intercellular penetration promoters and the impact of active substance on skin firmness and elasticity, the degree of hydration and skin tone. Micro-needle mesotherapy with pure L-ascorbic acid provided better diffusion of active substances through the skin and higher anti-aging efficiency.

This study was financially supported by Medical University of Lodz; grant No. 502-03/3-066-02/502-34-094.

Patients' knowledge about diet impact on psoriasis.

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Introduction

Psoriasis is a common autoimmune disease affecting 2%-4% of European population. It is recognized to significantly impair quality of life of patients. Many studies described significant positive correlation between clinical manifestation of the disease (PASI) and body mass (measured by WC –waist circumference/BMI). Besides, reduced intake of pro-inflammatory nutrients and adequate consumption of anti-inflammatory foods tend to alleviate the disease symptoms: pruritus, erythema and plaque formation.

Aim of study

The purpose of the study was primarily to assess patients' awareness of daily diet impacts on their skin lesions. Further the study assumed investigation of specific dietary factors influence on the course of the disease. The ultimate objective was to elaborate patients' communication approach in the disease treatment.

Materials and methods

We performed a questionnaire-based, cross-sectional study among patients of Clinic of Dermatology, Venereology and Allergology of Medical University of Gdańsk. The survey included adult volunteers suffering from psoriasis, regardless of its clinical type and with various disease severity levels (defined as PASI – psoriasis area and severity index).

Patients' daily diet needs awareness was assessed by questions on their general knowledge and subsequently, on particular dietary compatible and incompatible habits.

Courses of the disease and specific dietary factors were evaluated from two perspectives. Subjectively, as per their experience patients classified nutrients list positions as alleviating or exacerbating skin condition. Objectively, by comparing quantitative records of an average 1-week diet with patients' BMI, WC and PASI data.

The examined in the study dietary factors included diversified diets: Mediterranean, vegetarian, gluten-free as well as high-calorie and fat-rich.

Results

Surveyed agreed on significant diet impact on psoriasis. However, the majority failed to classify particular compatible and incompatible dietary habits correctly. Records of patients' average 1-week diet did not comply with healthy dietary recommendations. Such lifestyle increased BMI and WC values, as well as PASI data.

Conclusion

Patients suffering from psoriasis are aware of some influence the diet has on the disease course. However, they lack substantial knowledge about recommended diet postulations. To conclude, there is a strong need to educate patients about healthy lifestyle and diet. Such approach improves patient-doctor communication about disease treatment and increases their quality of life

Patterns of musculo-skeletal complaints among patients with psoriasis

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Introduction

Psoriasis is a chronic autoimmune disease of skin, which may affect around 2% of population. One of the forms of this illness is Psoriatic Arthritis (PA).

It is estimated that PA occurs at even 40% psoriatic patients and skin manifestations outpace arthritic symptoms for about 10 years. Prompt diagnosis and implementation of treatment are significant for the achieving of remission and better prognosis.

Aim of study

The aim of the study was to access the occurrence of PA in patients with psoriasis, as well as to investigate the number of patients without diagnosis and treatment for PA, who should be referred to the rheumatologist.

Materials and methods

A screening questionnaire to identify patients with PA among patients with psoriasis was created. The study was based on an online and paper questionnaire distributed to psoriatic patients. The form was filled up by 180 people (61 men, 119 women, average age 38,6±14,4). Respondents were asked about pain complaints, features and duration of arthritis and non-arthritic manifestations, existing diagnosis of joint inflammation, habits and lifestyle.

Results

We started the collection of patients cohort with psoriasis for screening test for PA. 90,56% (163) of respondents suffered from pain complaints of musculoskeletal system and about 70,55% (115) of them reported it during filling up the questionnaire. Among more than 38,89% (70) of all patients fulfilled the criteria of inflammatory arthritis. In 40% people with inflammatory arthritis affected joints were mainly located in a right hand, both wrists and in both knees. The criteria of inflammatory low back pain met 18 (11,04%) patients. In fact, more than 17% (12) of people with inflammatory joints pain and 50% (9) of patients following criteria of inflammatory low back pain did not have diagnosis of any of joints disorders. Moreover 41,67% (75) of surveyed suffered from dactylitis and enthesopathy of Achilles tendon was observed in 42,78% (77) people. 84,44% (152) patients noticed at least one of the symptoms of PA (inflammatory low back pain, arthritis, enthesopathy or dactylitis). 14,44% (26) of surveyed fulfil the requirements CASPAR what enable with a high degree of probability to make a diagnosis of PA.

Conclusion

Created questionnaire could serve as a screening tool for dermatologists to select patients with high probability of psoriatic arthritis who should be referred to rheumatologist.

Subjective evaluation of effectiveness of L-ascorbic acid applied with micro-needle mesotherapy in the treatment of mature skin

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Introduction

Mature skin is characterized by the loss of elasticity, hyperpigmentation and the tendency to become dry and dehydrated. L-ascorbic acid stimulates the synthesis of collagen type I by fibroblasts and the production of ceramides, exerts antioxidant activity, inhibits melanogenesis and helps to maintain proper skin hydration level. Micro-needle mesotherapy involves controlled skin damage by mechanical puncturing with the use of a derma-roller with titanium needles of appropriate length. Skin puncturing results in microdamages, during which the release of the cell growth factors occurs. Growth factors accelerate processes of division, development and differentiation of skin cells and stimulate stem cells and fibroblasts. Moreover, they promote the formation of collagen fibres, elastin, hyaluronic acid and glycosaminoglycans. Growth factors positively influence the quality of intercellular connections and the improvement of microcirculation within the skin. They initiate and accelerate the processes of tissue auto-regeneration.

Aim of study

The aim of the study was the subjective assessment of satisfaction and effectiveness of micro-needle mesotherapy in combination with serum with L-ascorbic acid application.

Materials and methods

Participants (17 volunteers aged 45-70 years) underwent a series of 4 mesotherapy treatments with vitamin C serum, performed every 10 days. The solution of L-ascorbic acid (20% concentration and pH = 3.5) was prepared immediately before application, in the amount of 2.5 ml for each application. Before the treatment, participants filled the questionnaire containing questions about their knowledge about vitamin C and the expected effects of its action on the skin. After a series of treatments, the women performed a subjective assessment of the effectiveness of the procedure and their satisfaction with it.

Results

The results of the survey conducted before the treatments indicated that women expected the improvement of hydration, the brightening of discoloration and the smoothing of wrinkles. Fulfilled questionnaire after the mesotherapy showed the improvement of skin hydration and elasticity, decreased feeling of tension, reduction of fine wrinkles and levelling of skin colour in over 80% of the subjects. 100% of the patients described the procedure as comfortable and declared a willingness to use it in the future.

Conclusion

L-ascorbic acid visibly reduces age-specific skin lesions. In vivo studies have confirmed the effectiveness of serum with vitamin C. Clinical effects indicate delayed aging, improved skin elasticity, colour levelling and brightening of hyperpigmentation. The use of appropriate methods of active substances application contributes to increased efficiency of active ingredients transport into the skin.

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Dermatological disorders in pregnancy

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Introduction

Pregnancy may result in a number of cutaneous changes. During pregnancy, nearly 90% of women note a new skin lesions or approvation of preexisting skin lesions.

Aim of study

To check if dermatological disorders are an important issue during pregnancy and to analyze their treatment

Materials and methods

2438 women up to 4 years from delivery were asked to fulfill a specially prepared questionnaire regarding demographic data, obstetric history and dermatological issues during pregnancy. Statistical analysis was performed in Statistica 12.5 software and was based on 1935 properly filled out questionnaires.

The study group (SG) consisted of 1447 patients with dermatological problems. The control group (CG) consisted of 488 without any skin disorders.

Results

The most common skin disorders were stretch marks (78%), acne (22%) and labial herpes (12%). Gynecologists prescribed dermatological medicaments to only 11.61% (n=168) of women, 26.7% (n=518) answered that were treated in any way.

25.68% of treated women (n=133) admitted that medicines were expensive for them, but 73.17% of treated group (n=379) said that symptoms disappeared after treatment.

In most cases symptoms disappeared right after the delivery (29.2%; n=423) or within the first week postpartum.

14.99% of women (n=217) were consulted by a dermatologist during pregnancy. 48.84% (n=106) of them had only 1 visit, 21.66% (n=47)- 2 visits and 29.5% (n=64)- 3 or more visits.

Symptoms disappeared significantly quicker in the treated group (46.9±61.8 days vs 124.0±29.9 days; $p<0.001$), when gynecologists prescribed a drug (35.4±56.5 days vs 109.8±46.6 days; $p<0.001$) and when dermatologists treated women (69.7±63.8 days vs 107.9±48.4 days $p<0.001$).

Conclusion

Dermatological disorders seem to be a significant problem during pregnancy. Proper care and prescribed treatment leads to quicker regression of symptoms and might influence the general well-being.

Calciphylaxis - a rare entity. Once seen, never forgotten.

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Introduction

Patients with End-Stage Renal Disease (ESRD) undergoing haemodialysis are prone to a number of cutaneous disorders. A high prevalence of dermatologic conditions is expected, because most patients with ESRD have an underlying disease process with cutaneous manifestations. One of the rarest disorders is calciphylaxis (calcific uraemic arteriolopathy – CUA) seen mostly in dialysed patients due to renal insufficiency. This condition is characterised by medial small- and medium–size vessel calcification resulting in ischaemic necrosis of the dermis and subcutaneous tissue. Calciphylaxis is often associated with a secondary hyperparathyroidism. The mortality rate is high because of a possible secondary infection causing cellulitis and bactaeremia.

Case Report

A 63-year-old woman with ESRD attributed to hypertensive nephropathy being on dialysis for 10 years complained of extremely painful ulcers covered with black, necrotic crust located on her breasts, abdomen, hips and thighs. They had been present for 4 months and during this period more of them appeared. Palpation revealed a lot of hard subcutaneous tumours and plaques under calciphylaxic lesions. Thick, bluish and branching lines corresponding to livedo racemosa were visible on the skin surface being an indication of medium–size vessel dysfunction. The deep biopsy showed calcification of the vessel in the fat tissue with lobular panniculitis and confirmed calciphylaxis. CUA should be differentiated from metastatic breast carcinoma, vasculitis, sclerosing panniculitis, vascular occlusive disorders, pyoderma gangrenosum, pancreatic fat necrosis and polyarteritis nodosa. The patient also presented disturbances in Ca/P/parathyroid hormone (PTH) homeostasis. There was an increased level of PTH in the blood due to secondary hyperparathyroidism supposedly in the context of ESRD. Elevated Ca x P promoted calcium crystal growth in arterioles. The patient was referred to a dialysis centre and additionally for an urgent parathyroidectomy. Eventually, she could start taking cinacaltet – a medication reducing level of PTH to avoid the exicision of the gland. Moreover, she was advised to treat the ulcers with an antiseptic dressing containing povidone-iodine and keep them dry if possible.

Conclusion

Calciphylaxis is thought to affect 1 – 4 % of all dialysed patients. This percentage may be higher because of low awareness and unclear clinical image. Emphasis should be put on the interdisciplinary diagnosis and care required for this severe and usually fatal disease.

The frequency and type of adverse allergic symptoms after radiological and MRI examinations among patiants in the Silesian Voivodship.

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Introduction

Hypersensitivity to contrast media used in diagnostic imaging is a medical problem which often appears in literature.

Aim of study

The aim of the study is to assess the prevalence of symptoms of hypersensitivity to contrast media used in radiology and magnetic resonance imaging(MRI).

Materials and methods

A retrospective study was performed with authors' questionnaire aimed to institutions which perform diagnostic imaging. The research was conducted in Silesia and encompassed 19 places performing X-ray and 11 performing MRI examinations. The questions intended to determine the most commonly used contrast media, the frequency of hypersensitivity reactions and type of symptoms.

Results

The most commonly used contrast media in radiology were: Iohexol(Omnipaque) and Iopromide(Ultravist). Immediate-type hypersensitivity reactions occured with the frequency of 1: 10000 radiological procedures in 63% of centres. In 21% of institutions they appeared with the frequency of 1:1000. The most common symptoms were: urticaria (84%), nausea (84%), itch (63%). Delayed-type hypersensitivity reactions have ever appeared among patients in the 26% of centres. 21% of institutions have ever referred patients for hospitalization due to signs of hypersensitivity. The most common complications appeared after abdominal and pelvic CT (67%) and angiography (45%). In 36% of centres performing MRI with contrast media there was no sign of hypersensitivity. In others they occured with the frequency of 1:10000.

Conclusion

Hypersensitivity to contrast media in diagnostic imaging is a rare clinical problem. Complications occur more often after a radiological than MRI examinations. In the majority of cases intensive therapy is not required.

Keywords: Contrast media, immediate-type hypersensitivity, delayed-type hypersensitivity, diagnostic imaging

Potential factors influencing photoprotective behavior among medical students at Jagiellonian University in Krakow.

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Introduction

Exposure to excess UV radiation can lead to permanent skin damage and potential neoplastic changes. Different factors impact the quality of the used protection. Medical students should receive appropriate education so that they can protect themselves and positively influence their future patients.

Aim of study

Construct a scale that quantifies how well medical students care for their skin (in terms of UV exposure) and demonstrate which factors can affect the level of protection applied in this particular population.

Materials and methods

A cross-sectional survey on the medical student population at the Jagiellonian University in Krakow was performed. Skin Care Scale (SCS), created for the purpose of this study, assigned points for the use of proper photoprotective tools and behavior. The scale consisted of 6 questions, graded from 0 to 2 points (with the maximum score of 12 points). We tried to determine if there was a difference in mean SCS score depending of:study program (Polish or English Medicine), education (highschool and above-highschool education), Fitzpatrick skin type, students having their dermatology course (versus students who have not had their course yet) and how long ago the course was completed (5 time intervals).

Results

242 surveys were completed. 159 (66%) respondents were female, 83 (34%) male, with mean age of 23,4 years. 156 (64%) have competed their dermatology course and 86 (36%) have not. 141 (58%) students were in Polish program and 101 (42%) were in School of Medicine in English at Jagiellonian University. Using the Mann Whitney U test we found a significant difference between Polish and English students, with the Polish students having a higher score (mean SCS scores 8,4 and 7,7 respectively). A significant difference was found ($p=0.018$) in SCS score between student group which has completed the dermatology course (higher score) versus the one that has not (adjusted for skin type). We failed to indicate a significant difference in quality of applied protection depending on: level of education (t-test, $p=0.29$) and duration how long ago students have had dermatology course (5 groups, using ANOVA table, $p=0.55$). In addition, only in Fitzpatrick type 2 we found that students who have completed dermatology had significantly higher SCS score than students who have not (the Mann Whitney U test, reject H0).

Conclusion

Having dermatology course is beneficial for students in terms of their own skin protection behavior, regardless of skin type. Additionally, students in Polish program use more skin protection than students in Medical School of English. Education and time passed from having the dermatology course have no impact on students photoprotective behavior.

ENDOCRINOLOGY & DIABETOLOGY

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Two primary squamous cell carcinomas of the thyroid gland

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Introduction

Squamous cell carcinoma (SCC) of the thyroid gland is atypical and very rare cancer. The exceptional character of the cancer is caused presence of squamous cells in the tissue of a thyroid gland. The aim of this paper was to present two clinical cases of SCC with precise analysis of histopathological examination and clinical course in this type of cancer.

Case Report

77-year-old female and 68-year-old male patients were admitted to Our Department due to rapidly enlarging tumor of the thyroid gland with all clinical consequences. They underwent radical thyroidectomy along with lymphadenectomy in the mediastinal field. In both cases, histopathological examination indicated rare cases of SCC. They survived adequately 14 and 7 months from the beginning of the treatment.

Conclusion

SCC is still poorly-known cancer and the most description are based on case report. Our preliminary experience could be helpful in establishing methodology and endpoints for future research of SCC.

Overweight and obesity in children - an analysis of causative factors with regard to the family's lifestyle.

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Introduction

Over the past twenty years, the number of overweight children nearly doubled. According to the study by the Institute of Mother and Child from years 1994-1995, the percentage of school-age children who are overweight and obese was 8.7%. Now it reached around 20% as reported by the study by the Institute of Food and Nutrition from the year 2015. It is an alarming fact, given the consequences that can result from an excessive body weight.

Aim of study

An analysis of causes for overweight and obesity in children.

Materials and methods

A survey of parents of randomly selected group of eighty children aged 2-17. Forty children were from Bialystok, the other forty from Szczecin. None of the children suffered chronic diseases including allergies, took any medications permanently, nor used a special diet.

Results

In the study group of eighty children 23.75% were overweight (⩾85 percentile), of which 42.1% were the obese children (>95 percentile). Boys constituted 68.4%, whereas girls 31.6%. Children from families where at least one parent was overweight amounted to 63.15%. In 52.6% of children, an excessive body weight problem occurred in other family members. Children from families where at least one parent had a secondary or primary education equaled 78.95%. The analysis involved subjects' eating habits which turned out to be improper. The most important being the amount of food consumed by the children-63,15% of them having 5-6 meals a day, not including snacking. Intake of 0.5-1L of water a day was reported by 47.4% of parents, and 42.15% of children. The percentage of physically active children who exercise minimum 30 minutes a day, 3-4 times a week is 73.73%. However, 47.4% of parents do not practice any physical activity, and the other 47.4% exercise 1-2 times a week. A total of 79% of parents do not exercise with children. We inquired about their sources of knowledge about a healthy lifestyle- 84.2% of parents admitted that they do not consult a doctor, and 68.4% think that the information provided by the doctors is insufficient.

Conclusion

1-Nearly every fourth of the examined children was overweight or obese. 2-Excess weight is more common in boys than girls. 3-Majority of the overweight children are from families were overweight/obesity is present. 4-Majority of the overweight children come from parents with primary or secondary education. 5-Most of the overweight children and their parents have abnormalities in both the amount, and the type of food they eat. 6-Both parents and their overweight children drink too little water. 7-Most of the overweight children are physically active minimum 30 minutes a day, 3-4 times a week, while parents exercise too little- not at all or 1-2 times a week. 8-Majority of parents do not exercise with their children. 9-Most parents do not learn about healthy lifestyle from doctors. 10-Most parents believe that the information provided by the doctors about healthy lifestyle is insufficient.

Evaluation of calcium and vitamin D3 intake in the group of polish women

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Introduction

Adequate vitamin D3 and calcium intake are definitely necessary for bone health and calcium–phosphate metabolism as well as for proper function of many organs and tissues.

It is believed that optimal and varied diet will suffice to cover the demand of these elements. Although it is rather easily obtainable to provide required amount of calcium in dairy products, the consumption in many countries is still under general recommendations.

Regrettably only a few types of food are sources of vitamin D3 and, in conjunction with low sun exposure in our latitude, it looks as reaching the essential level without treatment is quite insufficient.

Aim of study

This study investigates whether the patients' daily diet have a sufficient amount of vitamin D3 and calcium to maintain the optimal level of these in serum and discusses a desirability for vitamin D3 supplementation.

Materials and methods

The study group consisted of 58 polish women in mean age 55,6±13.8 years treated in Out Patient Clinic of Endocrinology. The study was done from January to March. 47 (81%) subjects were diagnosed with Hashimoto thyroiditis and 11 diagnosed with inactive nodular goitre. The intake of vitamin D3 and calcium was assessed in cooperation with Institute of Hygiene and Epidemiology in Lodz on the basis of 24h nutrition questionnaire (3-times repeated in each female) verified by Food and Nutrition Institute's Program "Dieta 5". Additionally, the level of vitamin D, calcium and PTH in serum and urinary calcium excretion were examined.

Results

The weight of examined women was meanly 77.7±17.2 kg (mean BMI 29.4±7.3). 40 patients (69.0%) were postmenopausal.

Dietary calcium intake was meanly 544.7±296.2 mg/day and decreased consumption (<500 mg/day) appeared in 29 patients (50.0%). The mean initial calcium level in serum was 2.5±0.2 mmol/l and its urinary excretion was meanly 5.1±2.8 mmol/24h.

The amount of vitamin D3 in subjects' diet was meanly 15.9±23.6μg. Initial mean Total 25-hydroxyvitamin level was 21.3±9.2 ng/l. The level of 25(OH)D <20μg/l was present in 26 patients (44.8%). It should be mentioned, that after 3-month vitamin D3 supplementation (in an amount depending on the concentration of vitamin D; <20 or >20 ng/ml; 6000 or 4000 IU/g, respectively) the mean status of 25-hydroksyvitamin in serum was statistically significantly higher (45.5±12.0 μg/l; $p<0.05$).

The mean PTH level of the examined group was 52.5±21.5 pg/ml.

Conclusion

In my study the obtained results demonstrate that vitamin D and calcium intake in everyday diet of polish women's group is not adequate and prove the necessity of vitamin D and calcium supplementation especially during winter.

Physical activity in children with DT1-good recommendation or imagination

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Introduction

It is clear, that undertaking a physical activity has an absolutly positive influence on our mood, it helps us to control the body mass and what's the most important reduces the risk of some diseases. A Healthy lifestyle is crutial for diabetics. However sometimes the connections between exercising and clinical parameters and glycemic control are not straightforward.

Aim of study

To estimate the impact of physical activity (PA) on clinical parameters and glycemic control in children with DT1 and assessment of children knowledge about undertaking PA.

Materials and methods

The study included 105 patients of GCZD in age of 8-20 years with DT1 (57% boys) suffering from at least 1 year (average 5,7 years), with a mean HbA1c of 7,4%. Data of weight, height, blood pressure (BP) and lipid panel were collected. The Survey about knowledge concerning PA was conducted with every patient (19 questions). Regularity, duration and intensity of the PA were defined according to METs scale.

Results

69,2% of patients have BMI in norm (centile scale), lipid disorder appears in 29,5% of checked and BP in 81,2% cases are in standard range. All children attended P.E. classes. 45,7% of children run the high-intense PA in the METs scale (about 6h/week). Children performing vs 7,8% and have shorter T1D duration (2% of cases, the most children know the range of recommended values. 63,8% of questioned are using a pump, 53,7% of them detach it for the exercise. 88% of respondents eat snack with a low/medium GI dependent on glycemic level before PA, 12,9% do it routinely. After-exercise hypoglycemia occasionally occurs in 64,6% comparatively less children had hyperglycemia 44,8%.

Conclusion

Our studies shows that children with DT1 develop a high awareness in the way of undertaking the exercises. More frequent PA is associated with lower HbA1c, shorter T1D duration and male sex.

Finding the most applicative insulin pen device in patients with hand function difficulty.

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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.

Aim of study

Aim of our study was to investigate which insulin pen device is the most applicative in patients with hand function difficulty.

Materials and methods

An open label randomised controlled trial study design was used. From patients admitted to the Rheumatology Clinic of Medical University of Lodz 12 patients have been included into the research. Patients were divided into 2 groups – patients with impaired hand function due to a rheumatic disease (study group) and patients with unaffected hand function (control group).

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 dialed up to 10U and 2U. Each subject completed the injection series two times (once for each dose) for each pen injector. The order of dialing doses, as well as the order of insulin injectors were randomized.

Every patient filled the questionnaire, assesing at the scale from 1 to 5 the manageability of each injector at every stage of the injecting sequence. The researcher also graded patients performance on separate questionnaire. Then, the data have been collected, and analysed.

Results

Control group, as well as the patients from a study group showing the lowest hand function deterioration (DHI score 25/90 and 23/90) showed no difference in completing succesfully each task on each pen device.

Three patients with the highest hand function deterioration (DHI score 75/90; 75/90 and 81/90) were able to perform each task using GensuPen, and not always using other devices. A patient with the highest DHI could success in performing the whole sequence only using GensuPen.

Conclusion

Out of the three commonly used insulin injectors: Novo Pen 4, GensuPen and HumaPen Luxura, the best choice for patients with poor hand function is GensuPen.

Metabolic profile of the women after gestational diabetes mellitus (GDM).

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Introduction

The data from the many studies indicate that GDM is associated with an increased risk of metabolic disorders in later life.

Aim of study

The aim of our study was to evaluate the incidence of metabolic disturbances after GDM and to analyze their determinants.

Materials and methods

144 women with GDM treated in Outpatient Department of Diabetes in Lodz between 2013 and 2016 were initially included in the study. Patients were examined toward metabolic disturbances at 3 and 18 months after delivery. Anthropometric data including BMI, waist and hips circumference, suprailiac, subscapula and biceps skinfolds were analyzed. Body composition was examined with the use of Tanita analyzer. Glucose and insulin concentrations in oral glucose tolerance test (OGTT) were evaluated, and the indices of insulin resistance and beta cell function were calculated based on HOMA2 IR, HOMA2 %S, HOMA2 B and QUICKI methods. Haemoglobin A1c, C-reactive protein (CRP), total, LDL and HDL cholesterol and triglycerides concentrations were also measured.

Results

95 and 68 women attended follow-up visit at 3 and 18 months after delivery, respectively. Normal OGTT result was shown in 82 and 46 women, impaired fasting glucose (IFG) was detected in 6 and 15 patients, impaired glucose tolerance (IGT) in 9 and 5 patients, and diabetes mellitus (DM) was diagnosed in 1 and 1 subjects after 3 and 18 months postpartum, respectively.

3 months after delivery, in a group of healthy women, compared to a group with any glucose disturbances (IFG and/or IGT or DM), significantly lower waist and hip circumference, thinner biceps, suprailiac and subscapula skinfold, as well as lower body weight (all $p < 0.001$), BMI ($p < 0.01$), fat percent ($p < 0.05$), visceral fat ($p < 0.01$) and index of obesity ($p < 0.001$) were noted. Lower CRP ($p < 0.05$) and triglycerides concentration ($p < 0.01$), as well as lower HOMA2 IR ($p < 0.01$), higher HOMA2% S ($p < 0.01$) and higher QUICKI ($p < 0.05$) were also observed in this group. Other parameters did not differ significantly between the groups ($p > 0.05$).

18 months after delivery, in a group of healthy subjects, compared to a group with abnormal OGTT results, significantly lower waist circumference ($p < 0.05$) and fat percent ($p < 0.005$) were shown. Other parameters did not differ significantly between the groups. A significant correlation between the presence of any disturbances in OGTT and waist circumference ($r = 0.266$, $p < 0.05$) and fat percent ($r = 0.293$, $p < 0.05$) was noted.

Conclusion

In the women after GDM less favorable metabolic profile and higher CRP concentration are connected with persistent carbohydrate disturbances shortly after delivery. 18 months postpartum however, most of the differences in the metabolic profile between the studied groups disappeared, and the metabolic disturbances that persisted postpartum in a longer perspective correlated with waist circumferenceand the fat percent only.

Glycemic variability parameters in short and long term models of continuous glucose monitoring (CGM) and their association with clinical indicators of glycemic control.

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Introduction

Glucose monitoring is the cornerstone of managing type 1 diabetes mellitus in children. Continuous glucose monitoring (CGM) systems measure glucose levels in interstitial fluid every 5 minutes, providing information about the intra- and inter-day variability of glycemia. In contrast to previous solutions with a limited measurement duration, CGM sensors coupled with insulin pumps enable monthslong glucose monitoring - providing amount of data that requires a third-party software to quantify glycemic variability (GV) and its clinical consequences.

Aim of study

To investigate the relationship between GV indices and clinical variables associated with the management of type 1 diabetes in children.

Materials and methods

We screened the clinical data of patients treated in a pediatric diabetology reference center in the 2012-2016 period. Eligibility criteria included: age below 18 at the beginning of the study, diagnosis of T1DM at least 6 months prior to the first day of CGM and complete clinical data that allowed for a full analysis. We used a self-developed program (GlyCulator2) to calculate 18 GV indices.

Results

53 patients (26 F; 27 M) met the inclusion criteria. The average age of all patients was 11.4 years (SD 3.4). 20 patients wore an iPro CGM device for a median time of 5 days; the remaining 33 patients used CGM integrated with their insulin pump (MiniMed) for a median time of 57 days. We found no statistically significant decrease in glycated hemoglobin (HbA1c) levels, compared to measurements preceding the CGM (7.44 vs 7.38, p=0.76). A trend could be observed towards lower HbA1c level after the CGM with prolonged time of the measurement (R=-0.24, p=0.0878). Scaling exponent of DFA was associated with the change in glycated hemoglobin levels (R=0.52, p=0.0057). Patients with iPro CGM device had significantly higher scaling exponent of DFA than patients that had CGM integrated with their insulin pump (iPro 1.00, IQR 0.99 – 1.02; MiniMed 0.90, IQR 0.80 – 0.96, p=0.0007).

A trend towards lowering of scaling exponent of DFA with prolonged measurement duration was observed (R=-0.65, p=0.0806). HbA1c level after the CGM was correlated with index J (R=0.56, p=0.0025) and M100 parameter (R=0.57, p=0,0019).

Conclusion

Change in HbA1c levels is associated with self-similarity of glucose concentrations. Glucose variability worsens metabolic control evidenced by HbA1c as well as mean blood glucose levels. Another study with a bigger patient group is required to find significant correlations between GV indices and clinical variables.

Ectopic thyroid tissue in the head and neck

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Introduction

Thyroid ectopy (TE) is an embryological aberration of thyroid migration characterized by the presence of thyroid tissue at sites other than its normal location. The most common location of ectopic thyroid gland is the lingual region. Patients with TE are usually hypothyroid and at low risk of malignancy. TE may be asymptomatic or cause local compressive symptoms or bleeding.

Aim of study

The aim of the study is to describe clinical characteristics within a group of nine patients diagnosed with TE at adult age.

Materials and methods

This study is a retrospective review of 9 cases referred to the Department of Endocrinology between 2010-2016. The study group consisted of 7 women and 2 men, aged from 22 to 69 years. Diagnostic procedures included baseline thyroid function tests, thyroid autoantibodies measurement, thyroid ultrasonography, radionuclide imaging.

Results

The most common type of TE was lingual thyroid (55%), followed by sublingual thyroid (33%). Six patients (66%) were hypothyroid and 3 patients (33%) were euthyroid at the time of diagnosis. The average age at diagnosis was 34 years and average BMI was 26.6 kg/m2. Two patients presented compressive symptoms and two patients had dysmorphic features on physical examination. The majority of patients were treated conservatively with levothyroxine (LT4) replacement therapy. One patient was treated with the use of radioiodine. Three patients underwent resection of TE because of compressive symptoms or suspicion of neoplastic process (unconfirmed by histopathology).

Conclusion

TE is still a diagnostic challenge. Our study suggests that radionuclide scanning and thyroid function testing may be useful not only for the diagnosis of TE but also before deciding on the therapeutic modality.

Glyculator2 - an automated tool for calculation of glycaemic variability indices.

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Introduction

Continuous glucose measurement (CGM) and flash glucose measurement (FGM) are technologies developed for the purpose of inferring blood glucose (BG) from the levels of glucose in the interstitial fluid of patients with diabetes mellitus. The sheer amount of data gathered by those two methods requires automatization. In order to calculate clinically useful indices of glucose variability (GV), a researcher or a physician needs to use a computer software. The currently, non-commercially available tools (EasyGV, GVAP, Glyculator) become gradually insufficient in the face of: growing number of different formats of raw files outputted from CGM and FGM systems, forcing users to prepare files manually before software analysis; and increasing quantity of data to analyse.

Aim of study

To develop a software in R scripting language, which would automatically process the outputted files from CGM and FGM systems and then calculate GV indices. To test the viability, precision and accuracy of the new programme.

Materials and methods

The extensive literature search was done to gather equations and algorithms needed to create Glyculator2. 60 raw CGM files was gathered from telemedicine database of the Outpatient Diabetology Clinic, as well as 40 raw FGM files from the Clinic's holiday camp. All patients were children with type 1 diabetes. The 10 files with highest standard deviation (SD) of BG, in each: FGM and CGM group, were pre-processed with Glyculator2 and then 3 tools (2 in case of FGM, since GVAP was not built to calculate FGM GV indices) were used to calculate GV indices (EasyGV, GVAP, Glyculator2). The results were then compared using Pearson correlation and Bland-Altman plots.

Results

The extensive literature search was done to gather equations and algorithms needed to create Glyculator2. 60 raw CGM files was gathered from telemedicine database of the Outpatient Diabetology Clinic, as well as 40 raw FGM files from the Clinic's holiday camp. All patients were children with type 1 diabetes. The 10 files with highest standard deviation (SD) of BG, in each: FGM and CGM group, were pre-processed with Glyculator2 and then 3 tools (2 in case of FGM, since GVAP was not built to calculate FGM GV indices) were used to calculate GV indices (EasyGV, GVAP, Glyculator2). The results were then compared using Pearson correlation and Bland-Altman plots.

Conclusion

Glyculator2 is a valid tool for automatization of pre-processing raw data from CGM and FGM systems and calculating GV indices.

Credibility of serum cortisol measurments in comparison with salivary method.

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Introduction

Characteristics of cortisol production, regulation and function is of considerable interest and relevance due to its ubiquitous role in all aspects of physiology, health and disease risk. Widely used assessment of cortisol levels in the patient's blood sample is focused on the free cortisol in a whole blood, serum and plasma, which make up 5-10% of total cortisol concentration. Conducting indispensable analyses from saliva may be considered as alternative method to usage of the blood at least in some of measurements.

Aim of study

Evaluation of credibility and repeatability of a salivary cortisol assessment.

Materials and methods

The study included 55 people aged 23.82 ± 1.2, with no history of endocrine disorders. The group was composed of 20 men and 25 women who gave an informed consent to participate. We have measured Blood, Salivary and Urinary cortisol. Saliva samples were gathered before and after taking blood and all of the samples were assembled between 7:30 and 8 AM. Examination of the saliva was performed using radioimmunoassay tests (CISBIO France) from samples gathered in the morning, before breakfast and oral hygiene. Our study subjects performed also 24-hour urine collection in order to assay cortisol level.

Results

The mean results of Blood, Salivary and Urinary cortisol levels were 658.86 ± 249.31 nmol/L, 25.53 ± 13.67 nmol/L and 186.89 ± 123.8 nmol/L respectively. There was no correlation between salivary and blood cortisol levels ($p>0.05$). Comparing to 24-hour urine collection, the accuracy of salivary assay was 94%, while serum accuracy stands at 47%.

Conclusion

Salivary test seems to provide accurate adrenal function evaluation and a well-accepted indication of cortisol level.

Flash Glucose Monitoring in Children with Type 1 Diabetes – Accuracy, Bias and Clinical Impact of Measurement Errors.

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Introduction

Frequent glycemia testing is intrinsically linked to glycemic control in patients with type 1 diabetes. Recently, a new flash glucose monitoring system (FGM) has entered the market. It utilizes a subcutaneous electrode to measure glucose concentration in intestinal fluid and calculate glycemia, which can be obtained by patient by scanning the sensor with a reading device. Given its increasing popularity, FGM should be critically appraised in terms of its precision and accuracy by in-the-field studies.

Aim of study

To evaluate the clinical accuracy of FGM-dedicated device (FreeStyle Libre Abbott Diabetes Care, Alameda, CA) among children with type 1 diabetes in real world settings during summer camp.

Materials and methods

During summer camp children with type 1 diabetes (n=79, aged 8-18 years) were provided with the FGM. On the third, seventh and eleventh day of study, they underwent supervised 8-timepoints glucose testing. Glycaemia was measured by FGM and with glucometer within 2 minutes time. The glucose trend arrows were recorded.

Results

The study was completed by 78 children (median: age 12.8 years, diabetes duration 5.8 years, HbA1c 58.5mmol/mol). Mean absolute relative difference (MARD) between FreeStyle Libre and glucometer was 13.5±12.9%. FGM was the most accurate in stable glycemic conditions: MARD 11.4±10.4%). FreeStyle Libre showed lower accuracy (MARD 22.6±18.6%) when glycaemia was falling >0.111 mmol/L/min and when reading device could not determine the glucose trends. FreeStyle Libre presented lower accuracy during daytime than at night [MARD 14.9±14% vs 11.2±10.6%, $p<0.0001$].

Out of 1655 data pairs, 98.43% and 99.1% of measurements fell into class A or B of Clarke Error Grid Score and Consensus Error Grid respectively. In Surveillance Error Grid, 80.36% of FSL readings were classified as associated with no clinical risk and 18.73% with slight risk.

Conclusion

FreeStyle Libre is accurate in children, but its accuracy depends on the glucose trend. Results flagged by the rapid fall flag and with no trend arrow should be verified by blood glucose measurements.

Impact of vitamin D supplementation on immunological aspects in women with Hashimoto's disease

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Introduction

The relationship between vitamin D deficiency and Hashimoto's thyroiditis (HT), has not been clearly proven yet. We lack in significant research, especially respecting Polish population. However, it is suggested that low levels of vitamin D may affect development of autoimmune thyroid diseases (AITD). It is also known, that treatment of AITD with combination of vitamin D and anti-thyroid drugs or thyroid hormone leads to reduction of the autoimmune reaction and serum levels of anti-TPO and anti-TG antibodies.

Aim of study

The aim of this follow-up study was to estimate vitamin D3 concentrations in blood serum of patients with compensated Hashimoto's disease and to assess a demand for vitamin D3 in this group. We wanted to show the correlation between vitamin D3 supplementation and anti-TPO and anti-TG antibodies levels.

Materials and methods

A group of 84 female patients was qualified, all of them attending the Outpatient Clinic of Endocrinology at the Regional Centre of Menopause and Osteoporosis. Their age: ≥18 years, before and after menopause - with diagnosed Hashimoto's disease (71 patients, study group) or without AITD (13 patients, control group). The blood samples were collected before and after 3 months of vitamin D supplementation to assay: serum calcium & phosphorus, vitamin D Total, ALP, PTH, TSH concentrations, anti-TPO and anti-TG antibody levels. The patients were divided into 2 subgroups due to output vitamin D concentration. Group 1 (vitamin D: ≥ 20 ng/ml) and group 2 (vitamin D: < 20 ng/ml) have been receiving vitamin D for 3 months in dose of 4000 IU/d or 6000 IU/d, respectively. In 74 of the patients, the vitamin D Total, PTH, TSH concentrations, anti-TPO antibody, anti-TG antibody levels were also measured after 6 months (in the 3rd time point).

Results

In the study group with the mean age of 54 (SD 14.55), the mean vitamin D level was 21.3 ng/ml (SD 8.25). In control group (without AITD) the median age was 55 (SD 11.15) and the mean vitamin D level was 16.2 ng/ml (SD 7.59). The difference in vitamin D levels between two groups was statistically significant ($p<0,05$). In both groups after 3 months of supplementation we noticed a significant increase in vitamin D concentration, decrease in ALP concentration and anti-TG antibody level. Calculations also revealed statistically significant decrease of anti-TPO and PTH levels in the 3rd time point. Comparing female before and after menopause, statistically significant higher results of PTH and ALP were observed before and after supplementation.

Conclusion

Vitamin D deficiency in patients with HT is a common problem. Supplementation increased vitamin D concentration. Although positive effect of vitamin D supplementation in women with Hashimoto's disease is unquestionable, it is difficult to show correlation between supplementation and antibodies level. Further research excluding external factors and based on bigger group of patients may lead to more vital results.

GYNECOLOGY & OBSTETRICS

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Abnormal genital tract bleeding - adenomyosis and uterine leiomyomas coexistence.

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Introduction

Uterine leiomyomas, benign neoplasm derived from muscular tissue of uterus, are common disease affecting women. Patients with leiomyomas often complain of many different inconvenient symptoms among which are menorrhagia and metorrhagia. Adenomyosis is also called endometriosis genitalis interna, endometrium is located within the uterine myometrium. Can similar localization within the myometrium and clinical manifestations of both disease entities have medical implications?

Aim of study

The aim of this study was to determine frequency of adenomyosis and uterine leiomyomas coexistence in women with menorrhagia. Are there any preoperative factors that distinguish patients with adenomyosis and uterine leiomyomas and patients only with uterine leiomyomas even before surgical procedure?

Materials and methods

The study was based on retrospective analysis of medical data, operational protocols, histopathological results of 225 patients of the Department of Operative and Oncological Gynecology in 2010-2012 operated because of abnormal bleeding from the genital tract.

Results

In the analized group of 225 patients, 179 was found uterine leiomyomas, adenomyosis was detected in 21 cases, coexisting uterine leiomyomas and adenomyosis were detected in 22 cases. Preliminary studies suggest that patients only with myomas undergo hysterectomy in the older age than patients with isolated uterine fibroids, the greater age range concerned patient with only myomas. In the half of the group with adenomyosis the coexistence with leiomyomas was present. What is more the study shows that adenomyosis correlate with intrauterine leiomyomas. Only one patient had adenomyosis diagnose before the operation.

Conclusion

Despite progress of ultrasound diagnostics, the frequency of adenomyosis stays preoperatively underestimated. In the history of menorrhagia, metorrhagia and severe pain during menstruation, reasonable is suspecting that uterine leiomyomas can also coexist with adenomyosis.

How prenatal diagnostics, fetal monitoring, in utero transport, planned ending of pregnancy and newborn targeted therapy change natural history of associated cardiac and extracardiac defect ? – a case report.

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Abstract

Cardiovascular defects are the most common birth defect in infants (1%), among fetuses we're observing it three times often. Coexistence of cardiovascular and extracardiac defects, which potentially can be corrected surgically, significantly worsens the prognosis. Only about 13,5% of cases may end successfully.

Case Report

24-year-old gravida, P III DIII (two healthy children actually in the age of 5 and 4) was referred to our Prenatal Cardiology Department Institute of Polish Mother's Memorial Hospital Research Institute from other academic hospital (located 300km from Lodz) with suspicion of congenital heart defect at 25hbd. In the USG+ECHO examination of female fetus with appropriate biometry we observed disproportion between atria, ventricles and big vessels, inappropriate flow through foramen ovale (left to right),hipoplastic aortic arch (suggesting interruption of aortic arch or tight coartation), enlarged sinus venosus and additional left superior vena cava. During the neck imaging we was observing small absence of communication between pharynx and superior part of esophagus. Temporally small stomach was visible. Ambulatory monitoring of fetal condition revealed increasing of polyhydramnion (from AFI=27 at 27,4hbd to AfI=48 at 38,6hbd). At 35,4hbd with AFI=36,5 we recommended hospitalization in PMMHRI, steoridtherapy and amnioreduction. Gravida and her family were informed about the risk of fetus and newborn who has the heart defect and with esophageal atresia possibly would have swallowing problems. Pregnancy was ended by cesarean section at 38hbd. Delivered baby weighted 2890 gram with Apgar 5/8/8. After birth prostin infusion was implemented in order to maintain fetal circulation. In the second day of postnatal life successful surgical esophago-esophageal anastomosis was performed . Moreover in the 28th day baby has cardiac procedure- the percutaneous stent implantation to the aortic isthmus. In the 28th day newborn has good cardiorespiratory function, only linear scar in the scapular area which healed primary, without murmurs in the physical examination. The head ultrasound hadn't show deviations.

Conclusion

Today's state of perinatal care in the referral center for fetal defects and prenatal cardiology (PMMHRI), thanks to multidisciplinary team, create new conditions for treatment associated congenital defects . Regular monitoring of hemodynamic state of the fetus was also relevant aspect. Because of the lack of features of fetal cardiovascular insufficiency the pregnancy could be continued to 38hbd. Delivery on time prevent the complications of prematurity.

Analysis of dietary habits of women with pre-pregnancy incorrect body mass.

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Introduction

Proper increase of the body mass has vital significance for the course of pregnancy and to a large extent depends on a woman's pre-pregnancy BMI. It is recommended that the increase of the body mass of a pregnant women with low BMI before the pregnancy amounts to 12,5-18 kg, with correct BMI-11,5-16 kg and with high-7-11,5 kg. What is more, wrong supply of vitamins, micro and macroelements may lead to irredeemable changes being the reasons for obstetric failures. That is why properly balanced diet is of the great importance, especially when it comes to the group of women with improper body mass before pregnancy.

Aim of study

An analysis of dietary habits of pregnant women, with particular emphasis on underweight, overweight and obese women before pregnancy.

Materials and methods

Pregnant women at the age of 18-35 in single pregnancy, carried to term, without pathologies, hospitalised in the period from July 2016-February 2017 in the Hospital of Pirogow in Lodz. The research was aimed at collecting 24-hour nutritional interview, during which patients were asked to accurately record all consumed products and beverages. The data was then analyzed and compared to the values of nutritional standards using the computer programDieta5.D. In addition, the questionnaire contained questions about general and obstetric history, health behaviors, supplementation during pregnancy and results of compulsory screening.

Results

It was reported that diet of the patients do not cover the need for minerals and vitamins necessary for the proper development of the fetus during pregnancy. Most patients eat too little calcium, magnesium, iron, vitamin E, iodine. It was found that 100% of the women in the study consumed too little folic acid and vitamin D, which was within the normal limits when supplementation was recommended. Increased appetite during pregnancy influenced the probability that a woman was receiving adequate energy. However it was independent of the BMI of the patients before pregnancy, her education, use dietician advice, press, books and online sources. In addition, the use of these additional sources did not affect the likelihood that a woman would receive the right number of calories during pregnancy. Similarly, pre-prenatal BMI was not relevant in the context of proper nutrition during pregnancy.

Conclusion

The awareness of correct nutrition during pregnancy is not affected by the education of women, thewoman's pre-pregnancy BMI or the use of widely available educational sources. Therefore, entire pregnancy population should be educated about rational nutrition and possible supplementation, but It would be necessary to change the existing channels of information on rational nutrition for pregnant women, because used so far have not produced results. Every pregnant woman should have a customized diet that includes her eating habits, physical activity.

Is the antithrombotic prophylaxis in pregnant women beneficial to the placental circulation?

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Introduction

Heparin inactivates factor Xa and thrombin, which is a mechanism of its long-lasting anticoagulant effect. Antithrombotic prophylaxis is given to pregnant women with indications for anticoagulation. However, studies of some authors were unclear about the impact of heparin on placental circulation and placental complications. These include: pre-eclampsia, late pregnancy loss, placental abruption and birth of a small-for-gestational-age (SGA) neonate.

Aim of study

The aim of the study was to evaluate the impact of low-molecular-weight heparin prophylaxis on changes in uteroplacental blood flow in foetuses with IUGR and neonatal outcome.

Materials and methods

Medical histories of 126 patients with pregnancies affected by IUGR in years 2015-2016 in University Clinical Centre in Katowice were analysed retrospectively. Study included 50 cases and divided them into two subgroups: subgroup 1 - pregnancies with IUGR and antithrombotic prophylaxis, subgroup 2 - cases of pregnancies with IUGR without administration of heparin.

Inclusion criteria were: complete medical history, gestational age between 28th and 40th week and birth through caesarean section.

In group 1 the inclusion criterion was also heparin prophylaxis at least 48 hours before labour.

Both groups were compared by mother's age, child's sex, gestational age, birth body mass, body length and head perimeter of neonates, indications for caesarean section and Apgar score.

Results

Fragmin was a more frequently used drug than Clexane (79% vs. 21%) and the average length of heparin therapy was 3 days. Pre-eclampsia was observed more often in subgroup 1 than in subgroup 2, respectively 36% vs. 12% ($p=0.04$ chi2).

In the research the blood flow in umbilical artery improved after given heparin - 75% before and 85% after administration of heparin ($p=0.04$). Change of blood flow in the middle cerebral artery wasn't statistically significant. There were no significant differences between adaptation period parameters of neonates in both groups.

Conclusion

Prophylaxis consisting of low-molecular-weight heparin has got a beneficial impact on blood flow in umbilical artery but it does not influence neonatal outcome.

Ultrasound-measured antepartal estimated fetal weight vs actual birth weight – accuracy and relevance.

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Introduction

Estimated fetal weight is a crucial parameter in antepartal evaluation of high-risk pregnancies. Ultrasonographic estimation of fetal weight may be helpful in decision-making concerning the route of delivery - by vaginal labour or caesarean section.

Aim of study

The aim of the study was to evaluate the accuracy of antepartal sonographic estimation of fetal weight in prediction of actual birth weight.

Materials and methods

The retrospective study included 914 pregnant women who gave birth in Department of Obstetrics and Perinatology JU MC between July and December 2016. Inclusion criteria were: singleton pregnancy and the interval between estimation of fetal weight and delivery within 48 hours. All measurements were performed by doctors from Department of Obstetrics and Perinatology JU MC. EFW was calculated using a method based on the study of Hadlock et al. EFW and ABW were compared by calculating mean absolute error and mean absolute percentage error. Data was analysed using Student's t-test and Pearsons' coefficient of correlation. $p < 0,05$ was statistically significant.

Results

Mean age of study group was 31,4 ± 4,7. Mean parity and mean gestational age (in weeks) were 2 ± 1 and 38,56 ± 1,89 respectively. Pearsons' coefficient of correlation between ultrasound-measured EFW and ABW showed very high correlation (r=0,86) according to Guilford's scale. No statistically significant differences ($p>0,05$) between EFW and ABW were observed for children with ABW between 2500 and 4000 g (p=0,82) and for pregnancies with gestational age <36+6 (p=0,56), 37 – 39+6 (p=0,059) and >40 weeks (p=0,435). Moreover, ultrasonographic method of fetal weight estimation has propensity to underestimation of ABW >4000 g and to overestimation of ABW <2500 g. For ABW 2500-4000g, sensitivity, specificity, positive predictive value and negative predictive value were 94,3%, 58,9%, 92,3% and 66,2% respectively.

Conclusion

Ultrasound-measured EFW performed within 48 hours before delivery is a good predictor of actual birth weight for fetuses of normal weight regardless of the gestational age. Estimation of fetal weight has the highest sensitivity and positive predictive value for normal birth weights (2500 - 4000 g).

How does the antenatal cerebroplacental ratio affect the course of pregnancy and neonate wellbeing?

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Introduction

Cerebroplacental ratio (CPR) is well-known marker of redistribution of fetal cardiac output. Incorrect values of CPR may be associated with numerous neonatal pathological conditions.

Aim of study

The aim of the study was to check the appropriability of CPR in predicting of adverse neonatal outcomes.

Materials and methods

The retrospective study included 731 pregnant women who gave birth in Department of Obstetrics and Perinatology JU MC between July and December 2016. Inclusion criteria were: singleton pregnancy and the interval between ultrasound examination and delivery within 48 hours. CPR was calculated as ratio of Doppler pulsatile indices of the middle cerebral artery (MCA) to the umbilical artery (UA). CPR lower than 1,08 was classified as pathological. Participants were divided into 2 groups: control (CPR≥1.08, n=675) and study (CPR<1.08, n=56). The differences in socio-demographic factors between control and study group were not statistically significant. Data were analysed using chi-squared test. $p < 0,05$ was statistically significant.

Results

In study group was observed statistically significant increased risk of preterm delivery (OR=3,11), birth weight <2500g (OR=4,57) and APGAR score < 7 in 1 (OR=5,67), 3 (OR=8,88) and 5 (OR=8,30) minute after delivery, compared to control group. Moreover, low CPR was associated with lower incidence of fetus birth weight >4000g (OR=0,16). There were not statistically significant differences in frequency of caesarean sections between control and study group. In all 56 pregnancies with low CPR, 44 (78,6%) were finished by caesarean section and 12 (21,4%) by vaginal delivery.

In pregnancies finished by caesarean section (n=505) from study group, there was increased risk of birth weight <2500g (OR=4,62) and APGAR score < 7 in 1 (OR=5,44), 3 (OR=8,94) and 5 (OR=7,27) minute after delivery, compared to the control group. In preterm deliveries low CPR correlated with APGAR score <7 in 1 (OR=5,29) and 3 (OR=10,0) minute after labour.

Conclusion

Detection of low CPR in every case should be alarming signal for obstetrician, because it could be associated with increased risk of preterm delivery, low birth weight and lower APGAR score results.

Positive and negative factors important for prediction of perinatal outcome in prenatal diagnosis of absent pulmonary valve syndrome- case report.

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Introduction

Absent pulmonary valve syndrome (APVS) is a rare congenital heart defect (CHD) accounting for 0,6% of all CHD. Not only it presents features of TOF such as ventricular septal defect, overriding aorta, right ventricular outflow tract stenosis and right ventricular hypertrophy, but in an APVS blood flow in right ventricular outflow tract is abnormal leading to regurgitation and stenosis as well as dilation of main and peripheral pulmonary arteries.

Case Report

Twenty-four years old gravida IV, para II was referred to the tertiary center in 17 hbd due to an abnormal finding in a three vessel view during fetal ultrasound screening examination.

The first echo at 18w5d hbd in our tertiary center showed incorrect heart axis, large subaortic VSD, overriding aorta, lack of pulmonary valve, proximally dilated pulmonary artery and its branches with a characteristic picture of „Mickey Mouse ears" sign. The amniocentesis at 19hbd revealed normal karyotype 46, XX. At 27 hbd the condition of the fetus worsened- as a cardiomegaly and pericardial effusion occurred. The fetus received transplacental treatment with digoxin and a the first course of steroids. The second course of steroids was repeated at 37 hbd. In total five prenatal ultrasound exams with fetal echo were conducted in a tertiary referral center, to monitor fetal condition, effects of the transplacental treatment and to choose the best time and place for delivery.

Female baby was born via vaginal delivery at 38 hbd scoring 9/9 on Apgar scale. The newborn underwent a complete repair of the heart defect on the 25th day of life and was extubated on the third day post-surgery. She was discharged from the hospital on the 41st day of life.

Conclusion

Early prenatal diagnosis of absent pulmonary valve syndrome, despite the psychological stress for pregnant woman, increased chances for survival of the fetus and neonate. Prenatal transplacental treatment (digoxin and steroids), avoidance of prematurity, delivery at term in tertiary referral centre (with prenatal cardiology, obstetrical care, neonatal care, pediatric cardiology and cardiac surgery) allowed the best possible management and increased the chances of survival of the baby.

30 years old woman with postpartum hemorrhage and abortive malignant hyperthermia syndrome. A case report.

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Introduction

Malignant hyperthermia is a life-threatening condition occurring after supply of inhaled anesthetics and succinylcholine in susceptible patients. We present a case report of woman with postpartum hemorrhage after vaginal labor complicated with malignant hyperthermia syndrome.

Case Report

A 30-year-old woman P3, L2, 2 vaginal deliveries was admitted to the hospital in 39 weeks of gestation during the first period of labor. Pregnancy was uneventful.

Patient gave birth to a healthy son (Apgar 10). Complete placenta was born by the Schultz mechanism. There was no damage of cervix and vaginal vault found. Perineal laceration was stated and secured. Uterus contracted properly. Perinatal bleeding was 250 ml. After 3 hours a strong bleeding occurred. Curettage and tamponade with balloon Bakri was performed but without success. Hemostasis was reached by insertion Hebisch-Huch stitches on uterine vessels. Intraoperative blood loss was 1000 ml.

After administration of thiopental and succinylcholine a tachycardia, rise of temperature and contraction of masseter occurred. Firstly impossible intubation become feasible by using propofol, nitric oxide and rocuronium. Due to dramatic plunges of blood pressure noradrenaline supply was needed.

Patient was transferred to intensive care unit. Laboratory tests revealed decrease of hemoglobin concentration and increase of myoglobin and creatine kinase.

Mechanical ventilation, fluid treatment and diuresis forcing was implemented. 2 concentrates of red blood cells was transfused. Because of great improvement in patient state there was no need to use dantrolene.

In the second day of childbed patient was transferred to obstetrics ward for the further observation. On the 4th day after labor patient in good condition was discharged home with recommended genetic testing for malignant hyperthermia.

Conclusion

Postpartum hemorrhage is one of the most common causes of perinatal women deaths. Early diagnosis and treatment is essential. In clinical practice not only obstetrics complications has to be expected, but also resulting from anesthetics procedures.

Analysis of female urinary stress incontinence among mini trampoline fitness training participants

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Introduction

Endurance group training using mini trampolines is quite a new type of fitness classes. Since its introduction a few years, this kind of activity has gained an increased popularity and substantial number of followers all over the world. Only in Poland, there are hundreds of fitness clubs located both in bigger and smaller cities, offering mini trampoline workout. For this reason, many physicians and physiatrists are concerned whether this type of exercising does not lead to a higher risk of female urinary stress incontinence. However, no evidence proving negative impact of trampoline training on human health has been found.

Aim of study

To describe the rate and severity of female urinary stress incontinence among mini trampoline fitness training participants

Materials and methods

Surveys were conducted in several fitness clubs and mini trampoline spots. Collected data were analyzed by certified medical statistician.

Results

In the survey 103 women of age between 17 to 52 have taken part. 43 % participants have been training more than 6 months. 9,8 % reported urinary incontinence associated with exercising on mini trampolines.

Conclusion

Our data shows that endurance training with mini trampoline could lead to a higher risk of female urinary stress incontinence There is an urgent need to create guidelines for fitness instructors and determine for whom this kind of activity is not recommended.

The results encourage to extend the study on larger group.

Portal vein thrombosis in a newborn with coexisting congenital heart defect.

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Introduction

Neonatal portal vein thrombosis (PVT) is extremely rare, reported in 1: 100 000 live births and 1-36: 1000 neonates in Intensive Care Units (ICU). Most commonly it occurs secondary to the placement of an umbilical vein cathether and are generally asymptomatic in neonatal period.

Case Report

Female newborn from 2nd pregnancy, 2nd birth, was delivered with Caesarean section at 38 gestational age with birth weight 2180g. After birth a child was in a severe general condition with Apgar score 5/3/7 in 1-3-5 minutes respectively, intubated and mechanically ventilated. Physical examination revealed cardiac murmurs and enlarged liver. Abdominal ultrasonography confirmed presence of situs inversus. The echocardiography revealed a single chamber, pulmonary atresia and tricuspid atresia ,patent foramen ovale, right-sided aortic arch, and abnormal inferior vena cava Prostaglandins were introduced, cardiac catheterization and angio-KT was performed. At 7th day laboratory tests revealed anemia and coagulation abnormalities, abdominal ultrasonography showed a blood clot (1x1cm) in portal vein. Anticoagulant treatment was started immediately. In subsequent controls, thrombocytopenia was observed. After excluding the catheter-related thrombosis, laboratory tests revealed deficiency of protein S and decreased activity of serum C protein and antithrombin III. After the stabilization of patient condition, at 18th day the newborn was referred to the Department of Pediatric Cardiac Surgery for surgical treatment of heart defects. A modified systemic-pulmonary anastomosis was performed with Blalocka-Taussig method. During the surgery severe bleeding from the respiratory tract and gradual decrease in pulse and systemic pressure were observed. Incorporated resuscitation had no effect, patient death was reported.

Conclusion

Neonates treated in ICU are at risk of thromboembolic events. Most are due to the presence of the catheter in the umbilical vessels, however other risk factors- thrombophilias should not be forgotten. The presence of single chamber, pulmonary atresia, tricuspid atresia, patent foramen ovale, right-sided aortic arch, and abnormal inferior vena cava with coexisting portal vein thrombosis and coagulation disorders give omnious prognosis. Compensation of coagulation defects and treatment of PVT in newborns remains a challenging process.

Sudden hearing loss in preeclampsia terminated by caesarean section

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Introduction

Preeclampsia is one of the biggest challenges in obstetrics. Its etiology has not been precisely defined, however the main mechanism is vasoconstriction and end-organ ischemia, which are dangerous for both the mother and the child.

Case Report

39-year old woman at 36 week of gestation was admitted to the ward with elevated blood pressure of 220/120 and accompanying tinnitus. The patient had a history of diabetes, irritable bowel syndrome and cesearen section in 2007 due to opthalmological indications. After two days of hospitalization c-section was performed because of persistent high blood pressure and risk of fetal asphyxia. There were no intraoperative complications.

During the first day after the procedure the patient reported headache, dizziness and hearing impairment. Neurological and laryngological consultations have been scheduled. Magnetic resonance imaging did not show any abnormalities. Neurologist ruled out posterior reversible encephalopathy syndrome, diagnosed peripheral hearing loss and vertigo. On the fifth day the patient developed hypoesthesia in the area served by right great auricular nerve, while previous symptoms continued. The patient was admitted to the laryngology ward, where right ear hearing loss and left ear hearing impairment with tinnitus were diagnosed and treated with 2% lidocaine. During the next hospitalization, after audiometric tests, the final diagnosis was sensorineural hearing loss.

Conclusion

Despite multiple hospitalizations and consultations by specialists it was impossible to define the specific cause of hearing loss. Preeclampsia is characterized by vasoconstriction, including cerebral arteries, which can result in hearing impairment due to brain ischemia. Another reason might be the caesarean section itself as there are descriptions of rare cases of hearing loss as a spinal anaesthesia complications because of imbalance between cerebrospinal fluid and inner ear perilymph. Nevertheless, in up to 70% of sudden hearing loss cases the cause cannot be determined.

Usefulness of intravaginal ultrasound in determining urine postvoid residual - analysis

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Introduction

In urogynecology transabdominal, transvaginal and transrectal probes are used.

Residual urine after voiding is evaluated by bladder catheterization and post-void urine residual measurement (complications and negative impact on patient's compliance). Ultrasound-good patient's compliance, non-invasive. There are controversies in literature: different probes and different formulas to asses post-void urine residual.

Aim of study

Ultrasonography usefulness analysis, performed introitally (transvaginal probe) to asses urine volume in the bladder.

Materials and methods

For work 61 patients results were taken. After voiding bladder ultrasound test was done by transabdominal and transvaginal probes. Two measurements were taken in transverse and sagittal plane and calculated by different formulas. After ultrasound examination micturition or catheterization was made to measure actual urine amount in the bladder.

Estimated results of residual urine after voiding amount were compared with residual urine actual amount - calculated from the formula: [(estimated value - actual value) / (actual value)] x100%.

In present study results of urine in bladder actual volume to values calculated by formulas using the results obtained in ultrasound transabdominal study and translabial were compared. Analyses were made for all patients studied. Patients were divided into 4 groups according to urine amount in the bladder: 1. 0-49 ml, 2. 50-99, 3. 100-199, 4. 200-500.

Results

Transvaginal ultrasound exposed bladder in all patients, regardless of urine amount accumulated in bladder. Transabdominal ultrasound failed to show bladder in less than 10% of patients from group 1. Transabdominal ultrasound allowed to image bladder in all patients with retention of urine>49 ml.

All mean four dimensions in study received by 2 probes differed significantly. Statistical tests confirmed significant differences between urine volume measured by catheterization and each volume, given by formula 1, 2 and 3 for ultrasound study by transabdominal probe. The largest differences gave the formula2, the smallest formula 1.

Conclusion

Ultrasound 2D translabial examination allows bladder visualization, regardless of urine contained amount.

When urine volume in bladder is <50 ml, bladder visualization in 2D-transabdominal ultrasound was not possible for all patients.

To assess urine amount in bladder 2D translabial ultrasound examination is more accurate than transabdominal.

Prof. Dietz's formula for 2D transperineal ultrasound seems to be the most accurate for 2D translabial ultrasound study, compared with other analyzed formulas.

Analysis of stress urinary incontinence therapy in women using urethra pessaries

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Introduction

Non-operative treatment has an important meaning in stress urinary incontinence (SUI) therapy. Pessary is a vaginal insert used e.g. for non-operative incontinence treatment. In women with stress or mixed urinary incontinence, urethra and urethra bowl pessaries are used.

Aim of study

Aim of the study was the analysis of stress urinary incontinence (I, II, III degree) therapy efficacy using urethra and urethra bowl pessaries. The study is a preliminary analysis of patient satisfaction with pessarotherapy in treating SUI.

Materials and methods

The analysis included 41 patients (age from 35 to 77 years, average 58), who reported to the clinic with 1st, 2nd or 3rd stress urinary incontinence. They were offered a trial of non-operative treatment by urethra or urethra bowl pessaries. 38 (92.7%) of the patients agreed to the therapy. Treatment was used in patients to whom it was possible to select pessaries in terms of efficiency and tolerance and who could be taught to use them. Pessaries were used after minimum 6 weeks of estrogen therapy. All pessaries were used with a recommendation to insert in the morning and take out at night.In 29 patients with stress urinary incontinence and without or with small pelvic organ prolapse (POP) and efficient urogenital diaphragm muscles urinal pessaries were used. In 9 patients with the SUI and POP symptoms urethra bowl pessaries were used. After 4-6 weeks the standardized interview was collected by phone. The level of satisfaction with therapy was analyzed.For the statistical study analysis of variance, t-Student test and chi-squared test were used. For the differences between values of the average characteristics Kruskal-Wallis test for more than two variables and the Mann-Whitney test for two variables were used. The significance of the tested differences was assumed on the $p<0,05$ level.

Results

In 36 patients (from 38 - 94.7%) it was possible to choose the right size of the pessary. From them, 34 women purchased pessary. Two resigned due to costs. After 4-6 weeks, we managed to contact all patients. All of them used the treatment and were satisfied with it. The percentage of patients who evaluated insertion and removal pessary from the vagina as easy were accordingly 88.7% and 88.4%. No serious adverse events were reported during the usage.

Conclusion

Urethra pessaries can be used in the majority of patients for SUI treatment. 82.9% of the patients included in the analysis (according to ITT rule) used the proposed treatment and were satisfied with the used therapy. All them were patients who bought pessary. Intravaginal use is effective in treatment of stress urinary incontinence symptoms in postmenopausal women. The use of urethra and urethra bowl pessaries vaginally is characterized by a favorable tolerance profile. Inserting an urethral pessary in the morning and taking out in the evening is possible to learn by the most of women. This treatment is well tolerated by the most of patients.

The influence of progesterone intake on the risk of intrahepatic cholestasis of pregnancy.

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Introduction

Intrahepatic cholestasis of pregnancy (ICP) is a disease found in approximately 2% of pregnant women in Poland. It is defined as reversible impaired bile flow in late pregnancy remaining until parturition. The pathology ground is multifactorial- genetic, endocrine and environmental. The main symptom is itching exaggerating at night. It leads to complications for both mother and fetus.

Aim of study

It is known that sex hormones have cholestatic effect. This study was undertaken to elucidate the influence of progesterone intake during pregnancy on the presence of ICP.

Materials and methods

Out of the total number of 699 patients hospitalised in February and March 2017 on the Complicated Pregnancy Unit and Perinatal Unit, 16 patients presented laboratory confirmed ICP. Only 5 of them fulfilled the criteria to be included in the study during the carried out questionnaire. The study group consisted of 5 patients who suffered from ICP, have no history of liver and gall bladder diseases as well as no nephrological complications and no family history of ICP. In the control group consisting of 115 surveyed patients without diagnosed ICP only 95 had no history of liver, gall bladder or kidney diseases and family occurrence of ICP and could be included in the further study.

Both groups were compared by age, BMI, way of conception and usage of hormonal contraception in the past. We also compared indications for progesterone. Moreover, the evaluation of progesterone intake and incidence of ICP was done.

The analysis of the data was carried out using STATISTICA 10.0. The categorical variables were assessed using the Chi-square test with the Yates' correction. The contingency tables were used to evaluate the association between progesterone intake and ICP. Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated using MedCalc. $P<0,05$ was considered as statistically significant.

Results

No significant difference was observed in maternal age- women with and without ICP were approximately the same age (31,8±1,83 vs. 30,53±4,49; p=0.532). The groups did not differ significantly in BMI, usage of hormonal contraception and way of conception ($p>0,05$).

What is more important the Chi- square independence test showed on level of p=0,05 no siginificant association between progesterone intake and ICP ($\chi 2=0,03656$). Due to the fact that expected value of one variable was less than 5 and degrees of freedom equal 1 we used Yates' correction. The result was 0,08077. Cramer's V contingency coefficient was 0,0191145.

Conclusion

Both groups have similar characteristic. Basing on our data we stated that there is no relation between progesterone intake and the prevalence of ICP.

INTERNAL MEDICINE

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Microscopic colitis in Lodz area

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Introduction

Microscopic colitis (MC) is a chronic inflammatory disease of the gastrointestinal tract. A characteristic feature of microscopic colitis is the presence of microscopic histological changes in the absence of any abnormality seen in endoscopy. There has been a little research done on the causes of this disease and its relationship to external factors.

Aim of study

The aim of this study was to determine the incidence of microscopic colitis (MC) at the Department of Gastroenterology, Medical Department of Lodz to evaluate clinical characteristics, and to search for risk factors for both collagenous colitis (CC) and lymphocytic colitis (LC).

Materials and methods

Between January 1, 2015, and December 31, 2016, Pathology Department at the Central Veterans' Hospital of Lodz recorded all new cases of MC diagnosed in patients hospitalized at the Department of Gastroenterology living in the city and region of Lodz. Retrospectively the data of enrolled to the study patients was collected, including patients' age, gender, origin, comorbidities, medications and clinical symptoms that caused hospitalization.

Results

Thirty seven MC patients were included in our study, 76% of all patients were women. The average age of patients is 55 years. 72% of patients suffer from chronic diseases and 18% of them have autoimmune disease. 35% of people with MC are treated for hypertension and 16% for diabetes. 73% of patients need chronic medication. The most common symptoms in the studied patients were: abdominal pain (95%) and the change in bowel movements (85%).

Conclusion

This population-based study shows that the incidence of MC, both CC and LC, in Lodz is high and condition is associated with female gender, autoimmune diseases or other chronic disorders and chronic medications intake.

Case of a non-cirrhotic portal hypertension

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Introduction

The portal hypertension is a clinical condition secondary to increased pressure in the hepatic portal circulation, with gastroesophageal varices, ascites, encephalopathy, splenomegaly and/or hypersplenism. Portal hypertension can be classified as pre-hepatic (e.g. portal vein thrombosis), post-hepatic (e.g. Budd–Chiari syndrome) and intrahepatic. Intrahepatic portal hypertension can be further sub-classified as pre-sinusoidal (e.g. congenital hepatic fibrosis) or sinusoidal (sinusoidal obstruction syndrome/veno-occlusive disease, secondary to chemotherapeutic treatment or the intake of pyrrolizidine alkaloids.

Case Report

36-year-old man was admitted to the hospital with the symptoms of portal hypertension such as recurrent bleeding from esophageal varices, ascites and splenomegaly. He had a history of occupational hazards with chemicals. LFT were almost normal except for ALP and GGTP, with slight anemia and thrombocytopenia. Doppler-ultrasound excluded portal and hepatic veins thrombosis. CT examinations showed hepatosplenomegaly, ascites, and esophageal varices with widening of the portal and splenic veins. MRI-enterography revealed thickened walls of the large intestine and terminal ileum, thus inflammatory bowel disease (IBD) was suspected as a predisposing condition to microangiopathy. However, colonoscopy excluded IBD. Angiography revealed clinically significant portal hypertension assessed as hepatic venous pressure gradient (HVPG). Histopathology of the liver excluded advanced fibrosis of the liver with vasocongestion of central venules, with noticeable necrosis around. Transjuglar intrahepatic portosystemic shunt (TIPSS) was performed as well as repeated endoscopical binding ligation.

Conclusion

Chronic microangiopathy of portal venules results in idiopathic non-cirrhotic intrahepatic portal hypertension (NCPH) and the diagnosis is made of exclusion. The whole liver can show heterogenous morphology and the findings can be focal and vary in severity. Although some published series reported overall excellent survival in NCPH, in some indication to liver transplantation were described, including decompensated liver disease, porto-pulmonary hypertension and hepato-pulmonary syndrome.

Gastrointestinaly restricted hereditary angioedema (HAE)

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Introduction

Hereditary angioedema (HAE) is a very rare disease, which presents in form of recurrent attacks, which are dominated by severe subcutaneous or submucosal localised oedema. It is very unlikely for the symptoms to be restricted to one system.

Case Report

This case study investigates a 35 year old male with final diagnosis of hereditary angioedema (HAE), where only abdominal symptoms were present. There is a negative HAE family history. Patient first presented in 2010 with nausea, vomiting with digestive and coffee ground contents, abdominal pain (mainly concentrated in left iliac fossa). Laparotomy was performed. Additionally, gastroscopy revealed inflammation of duodenal bulb. Patient was hospitalised multiple times due to recurrent attacks of the disorder. During complicated diagnostic process many disorders were excluded: Lyme and Whipple disease, malignant tumours, thyroid disorders, tuberculosis, viral, bacterial and parasitic infections, chronic hypophosphatemia, lupus, Coeliac disease, porphyria. The final diagnosis of HAE type I was established in three years from the symptoms onset with lowered concentration of C1q (120mg/l) and lowered activity of C1 inhibitor (35,8%).

Conclusion

HAE with only gastrointestinal symptoms is rare and possess difficulties in diagnosis. Family history is not necessary for diagnosis. The main goal of this report is to create knowledge among doctors about the different symptoms of HAE. This report demonstrates the importance of consideration HAE in form restricted to one system, especially restricted only to abdominal symptoms. It may play crucial role in shortening diagnostic process and ensure proper treatment for the patient.

Assessment of the therapy schemes and rules of Rheumatoid Arthritis and reasons of non-compliance among patients treated with Methotrexate.

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Introduction

Methotrexate (Mtx) is the first line medicine used as a disease-modifying antirheumatic drug (DMARD) in rheumatoid arthritis (RA) for over 30 years. However, there are still some concerns about the treatment among physicians. The Mtx treatment requires paying special attention to the drugs dose, supply, periodic lab tests, supplementation of folic acid and combining with other medicines.

Aim of study

The aim of the study was to assess the treatment schemes of RA patients using methotrexate and to assess the compliance to the treatment.

Materials and methods

The study was based on an on-line questionnaire distributed to rheumatic patients treated with Mtx. The questionnaire was filled up by 415 people (21 men, 394 women, average age 36±12,3). The questions about duration of drug intake, the frequency and route of administration, dose, folic-acid supplementation, treatment monitoring were asked in the questionnaire. Moreover patients were asked about potential side effects of drug, regularity of current therapy and circumstances of Mtx discontinuous.

Results

Four hundred thirteen responders were ever treated with Mtx. The mean dose of Mtx was 19,75±5,46 mg. Only 33,19% of patients were treated with dose equal to or greater than 25 mg. Monotherapy with Mtx was declared by 61,2% of responders, 38,8% of patients received also glucocorticosteroids (GCs). Disturbingly, 12,05% of surveyed take GCs by now and deny taking Mtx. The average time of GCs therapy was 6,5±6,78 years (maximum 34 years). Almost 57% (234) declared they have ever stopped the treatment. Among that group, in 158 (52,5%) patients it was doctor's decision which was determined by side effects in 66 patients. Nearly 60% of those patients return to Mtx. The most common side effects causing discontinuation of therapy among physicians (23%) as well as patients (50%) are gastric symptoms like nausea and vomiting. Discontinuation of the therapy because of malaise was statistically significant more frequent in patients own decision than in doctors consultation ($p<0,0023$). Besides, malaise was the factor to decide to discontinue the therapy for 6,08% of patients and for 19,54% doctors. Among patients who discontinue therapy of Mtx due to side effects 51,61% (64) receive GCs but among patients who maintained Mtx treatment, GCS obtain only 38,33% of them. What is more, subcutaneous route of Mtx choosed 51,61% of patients who did stop Mtx therapy and only 36,11% who did not. Patients who did not supplement folic reported statistically significant more often presented side effect and also stopped treatment more often than patients who continue proper supplementation.

Conclusion

There is still lack of sufficient knowledge of proper and safe administration of Mtx. A significant proportion of patients is probably undertreated with Mtx using lower doses as recommended by EULAR guidelines. Lack of supplementation with folic acid can lead increased side effects and discontinuation of therapy.

Analysis of untypicall complication of billiary tract prosthetics in condition of cholelithiasis

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Introduction

Cholelithiasis is a common condition touching 10-20% of european society. One of the most effective treatment is gallstones removal.Prothesis location provides better bile discharge. It is an efficient procedure however it is often connected with some risk. Common complications are massive bleeding or billary tract inflammation. Rarely we have to deal with jejunal perforation via dislocated stent or tumor growth in the neighborhood of located prosthesis.

Case Report

We present a case of 59-years old man admitted to the Gastroenterology Depatment in order to planned billary tract prosthetics. Patient with hypertension after acute pancreatitis repeatedly hospitalized because of cholelithiasis. One of gallstones removal procedures ended with an unexpective billary tract prosthetics complication.

Conclusion

Despite all the possible comoplications of billiary track prosthesis the life quality improvement is significant in comparison to risks. Morover there are a lot of surveys which outcomes develope knowledge and prove the validity of such treatment.

The influence of anti-tumor necrosis factor alpha therapy on body composition in Crohn's disease patients.

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Introduction

Crohn's disease (CD) may result in anorexia, malnutrition and altered fat distribution. Chronic nutritional deficiencies are common and multi-factorial in origin and often develop due to small bowel malabsorption and chronic inflammation. Malnutrition adversely affects the course of the disease. Biological therapy with the use of anti-TNF-α antibodies has been shown to successfully achieve and maintain remission, increase dietary intake and improve body composition in CD patients.

Aim of study

This study aims at evaluating the body composition in CD patients qualified for biological therapy with anti-TNF-α agents. Additionally, the goal is to investigate the nutritional status and the effect of therapeutic regime at different stages of biological treatment.

Materials and methods

This prospective clinical study was performed on 17 adult CD patients qualified for a 52-week therapy with anti-TNFα agents at the Department of Gastroenterology at the Medical University of Lodz. In all patients a detailed physical examination was performed along with accurate body measurements and composition analysis with the use of the "BODYSTAT 1500" bio-impedance analyzer. This provided an effective evaluation of body composition at 0, 14 and 52 weeks of biological therapy. Complete blood count, CRP, lipoprotein profile, Crohn's Disease Activity Index (CDAI) assessment and a nutritional questionnaire were performed at each point of the study.

Results

Baseline Lean Weight (LW) and Basal Metabolic Rate (BMR) increased significantly at the induction point and at the end of the observational period (LW: p=0,008 at week 0 vs. 14 and p=0,0028 at week 14 vs. 52; BMR p=0,008 and p=0,028 respectively). Difference was also noted in CDAI values between week 0 and 14 and between week 0 and 52 (p= 0,001 and p=0,012). Significant changes in Body Weight and CRP were present between week 0 and 14 (p=0,008, CRP: p=0,041). A decrease in values of low density lipoproteins was observed in each step of the therapy: between week 0 and 14, 14 and 52 and 0 and 52 (p=0,019, p=0,013 and p=0,012 respectively). Between week 14 and 52 a decrease in triglycerides was revealed (p=0,028). The powerful contrast was observed between week 0 and 52 in the values of body fat percentage, fat weight, total cholesterol and high density lipoproteins (p=0,047, p=0,043, p=0,025 and p=0,012 respectively).

Conclusion

In our study we observed a significant improvement in body weight and body composition muscle parameters. A meaningful correction in lipid profile results was noted. Our findings suggest that the induction of anti-TNF therapy has a beneficial effect on the nutritional status and body composition, as well as on lipid metabolism and disease activity.

Occurrence of allergic diseases among patients with sarcoidosis

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Introduction

Sarcoidosis is a rare systemic disease of unknown etiology. It is estimated that 90% of cases involve lungs and lymph nodes. However, any organ can be virtually affected by sarcoidosis. We hypothesized that the prevalence of allergic diseases (Th2 immune response) is lower in patients with sarcoidosis (Th1 immune response).

Aim of study

The aim of this research is to evaluate the prevalence of allergic diseases, especially bronchial asthma, among patients diagnosed with sarcoidosis.

Materials and methods

90 participants diagnosed with sarcoidosis were recruited to the study (43 women, average age 44,0 +/- 12,5 years) in the outpatient clinic. Every patient filled in a short questionnaire containing basic personal data (age, sex, smoking, body weight and height), information about the course of sarcoidosis and presence of allergic diseases.

Results

33 patients (36,7%) reported occurrence of at least one allergic disease, in 16 cases it was asthma, in 14 urticaria and in 11 – allergic rhinitis. In 7 participants asthma occurred after the diagnosis of sarcoidosis. Our research showed, with statistical significance, that women with sarcoidosis are more likely than men to have asthma ($p=0.02$) and allergy ($p=0,02$). Moreover, there was a strong correlation between elderly age in patients with sarcoidosis and the presence of allergy ($p=0,011$) and asthma ($p<0,001$). There was not any statistical significance concerning the course and duration of sarcoidosis, treatment, smoking and BMI.

Conclusion

This study is comparable to the results of other studies which focused on the occurrence of allergy in sarcoidosis. Women with sarcoidosis have higher likelihood to develop allergic disease and asthma, like in a general population. Moreover, older patients seem to have higher burden of allergic diseases. Prevalence of allergic diseases in our study group is also similar to the general population of the Łódź region.

Diagnostic challenges presented by a patient with suspected adult-onset glycogen storage disease type II (Pompe Disease)

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Introduction

Pompe disease is a rare autosomal recessive disorder that is characterized by absence or deficiency of the acid alpha-glucosidase enzyme (GAA) that hydrolyzes lysosomal glycogen. This enzyme is responsible for breaking down glycogene in lysosomes. In patients with Pompe disease glycogen is not adequately broken down. It leads to the accumulation of glycogen in many cells, particularly in cardiac, smooth and skeletal muscle cells. Pompe disease can affect people of all ages. Generally, the disorder is divided into an infant form and a late (or delayed) onset form.

Case Report

We report the case of 55-year-old men admitted to Institute and Clinic of Internal Medicine, Hypertension and Metabolic Disorders Ward because of the suspicion of glycogen storage disease type II. Last year he was admitted to the hospital because of a knee contusion where routine laboratory tests, echocardiogram and echocardiography were performed. Echo showed left ventricular hypertrophy. Patient is a physically active person. The clinical symptoms as dyspnea, fatique, difficulty in breathing, muscular weakness, increased daytime sleepiness have been not reported. In November 2016, patient had an episode of syncope. Cardiac magnetic resonance imaging (CMRI) showed ''texture characterization'' of the cardiac muscle characteristics for glycogen storage disease. Specyfic enzymatic activity of alpha-glucosidase was analyzed and confirmed Pompe disease. The patient is eligible for a replacement therapy with rh-GAA (Myozyme).

Conclusion

Differential diagnosis of left ventricular hypertrophy in adults should consider rare storage diseases even in the absence of classic disease symptoms.

The influence of statin use on sleep disturbances.

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Introduction

Despite the fact that using statin is being associated with increasing disturbances of sleep, there is no sufficient evidence for such negative effect of the statin therapy.

Aim of study

The following study aimed at examining the connection between the use of atorvastatin and rosuvastatin and the disturbances of sleep in comparison to the patients not treated with statin. The additional aim of the study was comparing the effects of using atorvastatin and rosuvastatin on the quality of the sleep of the treated patients.

Materials and methods

The current study have been conducted on 60 consented patients. 30 of the enrolled patients (13 males, 18 females, mean age: 69±13) had indications for chronic statin therapy (17 pts. taking atorvastatin, 13 pts. taking rosuvastatin) and the other 30 patients (8 males, 22 females, mean age: 64±14) without statin therapy were the control group. The individuals were asked to complete a set of questionnaires assessing sleep quality in order to investigate the effect of atorvastatin and rosuvastatin therapy on sleep parameters. These questionnaires included: Athens Insomnia Scale, Pittsburgh Sleep Quality Index, Karolinska Sleepiness Scale, Insomnia Severity Index. The exclusion criteria were: taking hypnotic drugs, obstructive sleep apnea, decompensated heart failure, and prostatic hyperplasia.

Results

The results of the study revealed that patients during atorvastatin treatment obtained more points in the Athens Insomnia Scale and Insomnia Severity Index in comparison to both the control group (9.6±3.7 vs. 6.6±3 $p<0.05$; 11.3±6.0 vs. 5.6±3.9 $p<0.05$) and the patients on rosuvastatin therapy (9.6±3.7 vs. 6.4±3.3 $p<0.05$; 11.3±6.0 vs. 5.8±4.7 $p<0.05$).

The Pittsburgh Sleep Quality Index and Karolinska Sleepiness Scale was not significantly affected neither by atorvastatin nor rosuvastatin in comparison to the control group ($p>0.05$).

In both groups of patients under the treatment (during atorvastatin and rosuvastatin therapy) there could be noticed significantly lower levels of LDL cholesterol than in the control group ($p<0.05$). Any significant difference has not been observed in the level of LDL cholesterol between patients treated with statins ($p>0.05$).

Conclusion

The results of the study showed that sleep disturbances were reported more often by patients on atorvastatin therapy than patients without statin therapy or those taking rosuvastatin.

Assessment of factors affecting patency of self-expandable metal and plastic stents in malignant jaundice

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Introduction

Plastic (PS) and self-expandable metal (SEMS) stents are used in endoscopic palliation of malignant biliary obstruction. It is not known whether more expensive SEMS offer significantly better results.

Aim of study

Comparison of patency of PS and SEMS in malignant jaundice.

Materials and methods

474 procedures of biliary stenting in 223 patients, performed from 2012 through 2015, were analyzed. Data on types of stents used and diagnoses were retrieved from medical documentation. Patency of stents were calculated through contact with patients. Continuous variables were expressed as medians (with interquartile ranges).

Results

Median age of patients was 67 (59-75) years; 53% were women. Indications for biliary stenting comprised cancers of papilla of Vater (37; 8%), pancreatic head (184; 39%), gallbladder (63; 13%), bile ducts (172; 36%), and metastases (18; 4%). PS were used in 338 (71%), and SEMS in 136 (29%) procedures.

SEMS patency was significantly longer in comparison to PS: 117 (60-236) vs. 50 (24-94) days; $p<0.001$.

Patency of PS increased non-significantly with increasing diameter: 42 (25-86) days for stents <10F vs. 63 (26-106) days for 10F stents; $p=0.111$.

Patency of SEMS was not influenced neither by presence of covering: 118 (80-243) vs. 150 (88-280) days for uncovered and covered SEMS ($p=0.397$) nor the diameter of SEMS: 219 (96-333) vs. 136 (80-265) days for 8 mm and 10 mm stents, respectively ($p=0.324$).

The level of the stricture - low (ampullary and pancreatic head cancers) versus high (gallbladder cancer and cholangiocarcinoma) - had no influence on the patency of both PS and SEMS, although for the whole cohort the lower level of obstruction was connected with significantly longer patency: 78 (34-120) vs. 53 (29-112) days for higher strictures; $p=0.044$.

Conclusion

Biliary self-expandable metal stents exhibit significantly longer patency than plastic stents.

Hormonal regulation of muscle growth and function in chronic hemodialysis patients: Yet another example of reverse epidemiology?

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Introduction

Muscle atrophy and osteopenia are highly prevalent in chronic kidney disease (CKD). They may arise from the dysregulation of the muscle-bone hormonal axis due to reduction of physical activity and malaise associated with anaemia, hypertension and hyperparathyroidism. Increased secretion of muscle-related hormone myostatin has been linked to osteoporotic bone fractures and muscle atrophy. In contrast to general population many biomarkers are regulated in opposite way- in very elderly subjects and patients with end-stage kidney disease. This phenomenon, known as reverse epidemiology (RE) has been recently observed in case of adipokines. We hypothesized that RE may also concern myokines in hemodialysis patients.

Aim of study

To study the association between physical activity, body composition and serum concentration of musculoskeletal biomarkers such as myostatin, parathormone (PTH) and alkaline phosphatase (ALP) in chronic hemodialysis patients.

Materials and methods

Chronic hemodialysis patients (n=40, 25 M, 15 F)- age 63,3 ± 13,7 years were included. The measurements included blood tests, analysis of body composition by bioimpedance, assessment of habitual physical activity for one week using triaxial accelerometers, muscle contraction force by dynamometer and skinfolds thickness by caliper. Patients were also asked to fill four questionnaires i.e.: International Physical Activity Questionnaire (IPAQ), Hospital Anxiety and Depression Scale (HADS), Roland Morris Disability Questionnaire (polish version) and activity questionnaire based on Numerical Rating Scale.

Results

Serum myostatin positively correlated with: daily ($r=0,61$; $p<0,001$), average ($r=0,65$; $p<0,001$) and total ($R=0,58$; $p<0,001$) energy expenditure. Average 24h ($r=0,48$; $p=0,003$) and total ($R=0,48$; $p=0,003$) number of steps also correlated with myostatin. There was a positive correlation between myostatin and average 24h ($r=0,40$; $p=0,015$), total ($r=0,37$; $p=0,026$) physical activity duration and vigorous ($r=0,45$; $p=0,006$) and moderate ($r=0,37$; $p=0,038$) yard work. Average ($r=0,40$; $p=0,017$) and total ($R=0,44$; $p=0,007$) Metabolic Equivalent of Task (MET) positively correlated with myostatin. Grip strength ($r=0,48$; $p=0,002$), BMI ($R=0,48$; $p=0,003$), Lean Tissue Index (LTI) ($r=0,40$; $p=0,017$) and subscapular skinfold thickness ($r=0,33$; $p=0,044$) were directly correlated with myostatin. Furthermore, hemodialysis dose positively correlated with myostatin ($R=0,49$; $p=0,002$).

Conclusion

Higher level of physical activity, grip strength, BMI, LTI and hemodialysis dose were associated with increased myostatin serum level in patients on hemodialysis. The finding of such paradoxical associations seems to confirm reverse epidemiology of myokines in chronic hemodialysis population.

Idiopathic non-cirrhotic portal hypertension: a case report

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Introduction

Portal hypertension, known mostly as a result of liver cirrhosis, can be a disease itself. Idiopathic non-cirrhotic portal hypertension (INCPH) is a rare condition characterized of intrahepatic portal hypertension in the absence of cirrhosis or other causes of liver disease and splanchnic venous thrombosis. It might be a result of immunological and genetic conditions, chronic infections and exposure to some drugs and toxins.

Case Report

A 22-year-old woman with a suspicion of liver cirrhosis with splenomegaly and hypersplenism was admitted to the clinic, for evaluation to liver transplantation. However, the patient's complaints were general malaise and fatigue, with no previous history of liver function decompensation and/or complication of portal hypertension. Clinical examination revealed only splenomegaly. LFT were normal, slight microcytic anemia, and moderate thrombocytopenia in lab test were observed. Although, shear wave elastography showed advanced fibrosis of the liver, ultrasound examination revealed numerous focal areas of nonhomogenous echogenicity in the liver parenchyma. MRI pointed to nodular regenerative hyperplasia (NRH) - like structure of the liver, with many heterogeneous focal liver lesions. Both examinations excluded ascites, and portal and hepatic veins thrombosis. However, Doppler-ultrasound showed collateral portal circulation, and splenomegaly, but no oesophageal varices were found in esophagogastroduodenoscopy. ADAMST13 was within the normal limit. The histopathological examination of the liver showed preserved trabecular structure with slight fibrosis of the sinusoids, with some lymphocytic infiltration, focal capilarisation, enlarged central venules and indifferent hyperplasia of the biliary ductules, confirming portal hypertension without liver cirrhosis.

Conclusion

Liver cirrhosis is not the only cause of portal hypertension. Idiopathic non-cirrhotic portal hypertension is a rare condition and diagnosis is made by the exclusion of advanced fibrosis of the liver and splachnic veins thrombosis. Nodular regenerative hyperplasia of the liver is one of possible histopathological feature of INCPH. However, it is still unclear, whether the histological changes reflect different stages of the disease, or that INCPH comprises different entities that share the same clinical presentation.

Serum adipokines levels as a marker of inflammatory response to anti-tumor necrosis factor alpha agents in Crohn's disease patients.

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Introduction

Alternation in body fat distribution, with accumulation of intra-abdominal white adipose tissue (WAT) is a well known feature of Crohn's disease (CD). Recent studies emerged WAT as a meaningful part of disease origin in CD patients. It produces and releases a great number of multifunctional proteinscollectively referred to as adipokines among which leptin, adiponectin and resistin hold a fundamental role. An overexpression of leptin, adiponectin and resistin has been reported in CD suggesting that adipocytes may be involved in the pathogenesis of the disease and act as immunoregulatory cells.

Aim of study

Here we hypothesize that the level of adipose tissue and secreted adipokines in patients with CD determines its course and influences the response to anti-TNFα therapy. This study aims at evaluating the change in level of fat tissue and serum concentrations of leptin, adiponectin and resistin in patients diagnosed with CD qualified for biological therapy with the use of anti-TNFα agents.

Materials and methods

This was a prospective clinical study involving adult CD patients qualified for treatment and hospitalized at the Department of Gastroenterology at the Medical University of Lodz, Poland. 17 patients with CD undergoing 52-week therapy with anti-TNFα agents were enrolled. In order to determine adiponectin, leptin and resistin levels in all patients blood samples at 0, 14 and 52 weeks of treatment were collected. Additionally, at each time point a detailed body composition analysis with the use of "BODYSTAT 1500" body fat analyzer was performed and laboratory parameters including C- reactive protein (CRP) levels, standard morphology and lipoprotein profile were evaluated.

The research was conducted with funds acquired from "grant UMEDu".

Results

Mean serum leptin levels measured at week 0 of anti-TNFα therapy were 12.1±2.8 ng/mL (range: 1.4–114.9 ng/mL). Mean serum adiponectin levels were 7590.2±632 ng/mL (range: 2353.4–25948 ng/mL) and mean resistin levels were 19.1±1.1 ng/mL (range: 5.6–56.7ng/mL). Consecutive assessment at week 14 revealed a significant decrease in leptin and resistin level (11.3 ng/mL; 18.2 ng/mL respectively). Adipocytokines serum level evaluation at week 52 confirmed the decreasing trend in resistin level (15.4 ng/mL), leptin and adiponectin levels revealed no significant differences. The serum levels of adipocytokines were not correlated to CRP levels or the clinical indices of activity of disease.

Conclusion

The study reveals fluctuations of adipose tissue specific hormones during anti-TNFα therapy in CD patients. This observed dysregulation of protein secretion may play an important role in the disease pathogenesis. Modulators of adipose tissue function may represent interesting therapeutic targets in CD patients. Additional research is needed to further clarify the role of adipocytokines in the disease.

Cardiological condition of patients with short hemodialysis vintage based on transthoracic echocardiography, troponin T and NT-proBNP

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Introduction

Patients with end-stage renal disease present a 5-10 times higher risk of developing cardiovascular disease (CVD) compared to age-matched controls. Clinically, undergoing long-term hemodialysis leads to an impairment of cardiac function, with ventricular hypertrophy, diastolic dysfunction and increased risk of adverse cardiovascular events. It is known that the levels of cardiac troponin T in patients with chronic kidney disease (CKD) are higher than in general population that corresponds with much higher risk of cardiovascular events and death.

Aim of study

Aim of the study was to asses cardiological condition of patients with ESRD with previously detected elevated high sensitive troponin T (TnT hs) (97% of patients pre-HD and 100% post-HD) and N-terminal prohormone of brain natiuretic peptide (NT-proBNP) (100% of patients).

Materials and methods

The study group included 36 patients (25M,11F, mean age 65 ± 12 years) with end-stage renal disease, treated by hemodialysis (HD) three times a week, for maximum of 28 months. Blood samples for the measurements of ThT hs and NT-proBNP were collected before and after HD. Mean overhydration status was counted based on weight before HD and dry weight using 2 months prior data acquisition. Transthoracic echocardiography (TTE) was performed by one echocardiographer on all patients within 2 hours after HD.

Results

Almost all of the patients – 94.4% - had a structural heart disease. 80.5% had increased left atrial volume index (LAVI) and 88.9% had left ventricular hypertrophy. 72.2% had enlarged left atrium. All patients presented TTE abnormalities (structural or functional, according to ESC guidelines form 2016) typical for heart failure (HF), despite only 22.2% of them had clinical symptoms. Based on TTE, 83.3% could be diagnosed with HF with preserved ejection fraction (EF), 13.9% with HF with mid-range EF and 2.8% with HF with restricted EF. Patients with EF < 50% had higher pre-HD NT-proBNP concetration (median 44834.5 pg/ml vs. 2488.5 pg/ml; p=0.02), higher left ventricular mass (271.5 g/m^2 vs. 168.8 g/m^2; p=0,007) andLAVI (62.2ml/m2 vs. 41.5ml/m2; p=0.03), than patients with HFpEF. There was a relation between LV mass/BSA and pre-HD TnT hs (r=0.37; p=0.02) and post-HD TnT hs (r=0.35; p=0.035). We found that mean daily overhydration percentage correlated with EF (r =-0.38; p=0.02) and with LV mass/BSA (r=0.3; p=0.068). We also found, that patients with arterio-venous fistula had lower LAVI than ones with a catheter (41.7 ml/m^2 vs. 56.6 ml/m^2; p=0.14).

Conclusion

Authors of new ESC guidelines on HF (2016) often emphasise, that symptoms of HF are not specific as there are similar to those of ESRD. Therefore TTE examination is worth to be performed for earlier detection of heart abnormalities.

Knowledge of the prevention methods of urinary tract infections among young women

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Introduction

Urinary tract infection (UTI) is the most common infection among young women and the most common disease of the urinary tract in women at all ages.

Aim of study

The aim of study was to evaluate the knowledge of the methods of UTI prevention and awareness of UTI risk factors in women.

Materials and methods

The study involved 150 women age ≥16 years (mean 23.3±4.9 years) interviewed with web-based survey:https://profilaktykazum.webankieta.pl/. Women were asked about a history of UTI and their opinions about the prevention of UTI and its risk factors.

The survey was disseminated through social media, discussion groups for women and the blog "DoktorB".Most popular websites for women including polki.pl, obcasy.pl, wizaż.pl, papilot.pl, "agata berry- blog", "dbam o siebie-blog", "kobiecy punkt widzenia-blog", "kobieta niezwykła blog" refused to display a link to our survey at their websites.

Results

Women identified mostly the following methods of UTI prevention: wipe in the direction from front to back after urination (89.3%), wearing cotton underwear (77.3%), increased water consumption (76.0%).

The respondents were also asked to choose the right prevention methods out of 12 answers that were correct and 5 that were incorrect. The incorrect answers were: wipe in the direction from back to front, empty the bladder at least every 6 hours, take prolonged baths, use sanitary pads for periods, use of spermicidal jelly. 30.7% of all women chose at least one incorrect answer. 24.2% of women who reported having at least one diagnosed episode of UTI in their lifetime, and 41.8% of women who did not experienced any UTI chose at least one incorrect answer.

Women were also asked to order the methods of UTI prevention from the most to the least important in their opinion. Most chose wipe in the correct direction (81.3%) as the most important, increased water consumption (43.3%), emptying the bladder at least every 4 hours (33.3%).

Close relatives (44%), general practitioners (40%) and medical specialists (33.3%) were the main source of the knowledge about UTI.

63% of women reported having at least one diagnosed episode of UTI in their lifetime, but 74% reported a history of increased frequency of urination and 70% burning during urination. 63% women with at least one UTI sought help of a general practitioner. Only 45.3% of them reported taking an antibiotic to treat UTI.

The most commonly identified pharmacologic methods of UTI prevention were nitrofurantoin (87.4%), use of dietary supplements containing cranberry juice (45.3%) and vitamin C (42%).

Conclusion

UTI is highly prevalent among young women. Most females are able to identify the proper methods of UTI prevention, but the utilisation of these methods is insufficient.

NEUROLOGY

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Compare the effectiveness of Montreal Cognitive Assessment 7.2 and Mini-Mental State Examination in the detection of mild neurocognitive disorder in people over 60 years of age with type 2 diabetes.

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Introduction:

The prevalence and incidence of type 2 diabetes mellitus (DM) increase with aging. DM is associated with increased risk for mild neurocognitive disorder (mild NCD) in the elderly population, but also seems to accelerate the progression of mild NCD to dementia in elderly people with DM. A meta-analysis of longitudinal studies showed diabetes increased the risk of mild cognitive impairment by 21%.

Aim of study

This study compares the usefulness of Montreal Cognitive Assessment 7.2 (MoCA 7.2) to Mini-Mental Status Exam (MMSE) for diagnosing mildNCD in DM population.

Materials and methods

The study was conducted using telephone survey among stroke patients admitted to Department of Neurological Rehabilitation of the Medical University of Silesia between 2013 and 2015 year. 214 calls were performed, 111 responders agreed to participate in the study. 41 of the 111 patients died, 70 people answered the questions from the questionnaire.

Results

Cross-sectional 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 2017. The study involved 204 participants, including 140 people assigned to the group without NCD, and 64 to the group with mild NCD with DM. Recruitment for both groups took place on the basis of specific inclusion and exclusion criteria. Average MoCA 7.2 and MMSE scores demonstrated statistically significant difference between the groups with and without mild NCD ($p < 0.001$). In the ROC curve analysis of the MoCA results, area under the curve (AUC) was 0.736 ($p < 0.001$). The optimal cutoff point for mild NCD was 23/24 with a sensitivity and specificity of 76,3% and 57,7% respectively. In the ROC curve analysis of the MMSE results, area under the curve (AUC) was 0.0,711 ($p < 0.001$). The optimal cut-off point for mild NCD was 27/28 with a sensitivity of 65,8% and specificity of 65,4%.

Conclusion

MoCA 7.2 and MMSE detect mild NCD similary. We propose the use of 23/24 cutoff point for MoCA which has a higher sensitivity than the recommended 27/28 cutoff point. MoCA 7.2 therefore can be used by primary health care and in the geriatric practice as a screening tool in detecting early cognitive impairment inpeople over 60 years of age with DM.

Impact of a cognitive function on the quality of life in multiple sclerosis patients.

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Introduction:

Multiple sclerosis is an inflammatory disease with continuous neurodegenerative process which may lead to cognitive impairment, fatigue and depression. It is believed that these symptoms are experienced by a significant number of patients and can develop early in the course of the disease affecting patients' quality of life and interfering with work and social activities. Pharmacological treatment and non pharmacological interventions are considered to improve mood and cognitive functions. Therefore, evaluation of these symptoms can be beneficial.

Aim of study

Assessment of cognitive functions, fatigue and depression in patients with multiple sclerosis over a period of 6 months.

Materials and methods

A self-created quality of life questionnaire, Beck scale, fatigue assessment scale and cognitive tests (Rey Auditory Verbal Learning Test, Adrenbrook'e cognitive examination, Rey–Osterrieth complex figure test, Symbol Digit Modalities Test, Stroop test, Trail Making test, Digit Memory Test) were conducted on 33 patients at the beginning of the study and after 6 months. In this group 11 patients received natalizumab, 14 interferon beta and 8 fingolimod.

Results

Mean age of patients was 37 years (SD=10.36), mean length of therapy – 31.84 months (SD= 41.4), mean length of disease – 11.67 years (SD=8.84). There were no significant differences in these parameters ($p=0.480$, $p=0.591$, $p=0.777$ respectively) between subgroups. On first assessment patients claimed that physical disability, balance impairment and fatigue are the most important for them among 8 most common MS symptoms. They were generally satisfied with their employment, family life with mean scores on a 5-point scale: 3.5 (SD=1.75) and 4.22 (SD=0.94), respectively. Mean Beck scale score was 8.97 (SD=6.11) and mean fatigue assessment questionnaire score was 35.12 (SD=14.22). We did not observe any significant differences between subgroups ($p=0.675$ for mean Beck scale score, $p=0.108$ for fatigue assessment score). Patients with higher Beck scale score were less likely to attend social events such as going to the cinema ($R=-0.39$, $p<0.05$) and claimed to feel less supported by their families and friends ($R=-0.45$, $R=-0.39$, $p<0.05$). Their subjective assessment of well-being was 6.5 points on 10-point scale and correlated significantly with attending social events (going to the cinema ($R=0.39$, $p<0.05$) and to the theatre ($R=0.37$, $p<0.05$)), SDMT score ($R=0.48$, $p<0.05$), Stroop test (word $R=-0.40$, $p<0.05$, colour $R=-0.39$, $p<0.05$), TMT ($R=-0.51$, $p<0.05$). We observed an increase in verbal memory between first and second assessment (the difference is 2.929, 95%CI 0.520-5.337, $p=0.018$).

Conclusion

We assume that quality of life questionnaire and results of cognitive tests might be an important tool in monitoring efficiency of treatment and early in the course of disease might indicate cognitive problems in patients with multiple sclerosis.

Concentrations of CX3CL1 in the cerebrospinal fluid of patients with Alzheimer's disease.

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Introduction:

The role of neuroinflammation in the pathogenesis of Alzheimer's disease (AD) has become more evident in recent years. It is speculated that some inflammatory proteins like chemokines including CX3CL1 may have potential role in the etiology of AD. CX3CL1, also called fractalkine or neurotactin, seems to be involved in microglial infiltration of the brain during development. Chemokine CX3CL1 is abundant in mature hippocampal neurons, brain region especially vulnerable to AD-related changes. High expression of CX3CL1 gene was observed in hippocampus of AD patients. Moreover, the expression levels of this protein reflect the course of the disease.

Aim of study

The first aim of this study was to investigate the CX3CL1 concentrations in the cerebrospinal fluid (CSF) of AD patients and cognitively normal patients group. The second purpose was the assessment of the correlation between tested protein, classical AD biomarkers, Erlangen score, CSF/serum albumin (Qalb) and CSF/serum immunoglobulins quotients (QIgG, QIgM, QIgA) as well as the neuropsychological test (MMSE).

Materials and methods

The study included 40 subjects: 20 AD patients and 20 normally aging individuals without cognitive impairment. The concentrations of classical AD biomarkers: AB-42, AB-40, Tau and pTau as well as CX3CL1 were measured in CSF using ELISA method. The levels of albumin and immunoglobulins were analyzed based on nephelometric method.

Results

We have revealed tendency to lower CSF concentration of CX3CL1 in AD patients as compared to cognitively normal individuals. Furthermore, in the total study group CSF concentration of CX3CL1 significantly correlated with levels of AB42 whereas in the group of AD patients this protein correlated with hTau and $pTau_{181}$ proteins. The association between Qalb and QIgG, QIgM and QIgA in AD individuals was also observed.

Conclusion

The results obtained in the current study indicated a possible role of CX3CL1 in the pathophysiology of AD, although further studies are needed.

The assessment of MCP-1 concentrations in the plasma and cerebrospinal fluid of patients with Alzheimer's disease.

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Introduction:

Alzheimer's disease (AD) is very heterogeneous disorder caused by both neurodegeneration and neuroinflammation pathologies. Monocyte Chemotactic Protein-1 (MCP-1), also known as CCL-2 is a member of the inflammatory chemokines family. It is suggested that MCP-1 may be involved in disturb beta-amyloid metabolism underlying AD. Elevated MCP-1 levels have been reported in AD brain tissues such as hippocampus, temporal and frontal cortices in comparison to brains individuals without cognitive deficits.

Aim of study

The purpose of this study was to examine MCP-1 levels in plasma and cerebrospinal fluid (CSF) of AD patients and subject without cognitive decline. We also assessed relationship between MCP-1 levels, neurochemical dementia diagnostics (NDD) biomarkers, Erlangen score, CSF/serum albumin (Qalb) and CSF/serum immunoglobulin quotients (QIgG, QIgM, QIgA) as well as neuropsychological test (MMSE).

Materials and methods

The concentrations of AB-42, AB-40, Tau and pTau181 were analyzed in CSF whereas the levels of MCP-1 were measured in plasma and CSF of 20 AD patients and 20 elderly subjects without cognitive decline using ELISA method. The concentrations of albumin and immunoglobulins were measured based on nephelometric method.

Results

The plasma and CSF concentrations of MCP-1 were higher in AD group (median: 134 pg/mL and 571 pg/mL) in comparison with cognitively normal group (median: 112 pg/mL and 506 pg/mL), however the differences were not statistically significant. The elevated CSF concentrations of MCP-1 correlated with hTau and $pTau_{181}$ levels as well as immunoglobulins quotients (QIgG and QIgA) in the total study group. Additionally, significant positive correlation was observed between Qalb and plasma as well as CSF levels of MCP-1.

Conclusions

Our findings suggest a potential role of MCP-1 in the pathology of AD, but it requires further investigations on larger study group.

Radiological presentation of PRES in children.

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Introduction:

Posterior reversible encephalopathy syndrome (PRES) is a rare condition with characteristic features seen in MRI. The main clinical presentation of this syndrome are seizures, headaches, altred level of mental status and cortical blindness.

Aim of study

To determine radiological presentation of PRES in pediatric patients treated due to oncological diseases, and evaluate the utility of MRI and CT in diagnosis of PRES.

Materials and methods

We evaluated clinical records, MRI and CT scans of 7 pediatric patients treated in John Paul II Upper Silesian Child Health Centre. The clinical records were analyzed for the age, sex, clinical symptoms, underlying etiology, blood pressure numbers and circumstances at PRES presentation. MRI images were evaluated for localization and nature of the lesions, features of edema, contrast enhancement and DWI features.

Results

The most commonly involved localizations were occipital lobes (7/7), frontal lobes (6/7) and parietal lobes (4/7). Typical lesions of high signal intensity on T2-weighted images and FLAIR were present in all patients. Two patients showed restricted diffusion on DWI and features of edema. Focal enhancement after contrast infusion was present in 2/7 patients. CT scan, performed initially in 4/7 patients, wasn't diagnostic of PRES. Follow-up imaging performed in 5 patients confirmed reversibility of the syndrome. The most common indications for radiological imaging were neurological symptoms (seizures 4/7, headaches, altered mental status. Hypertension (a risk factor for PRES) occurred in 5/7 patients.

Conclusion

Analysis of clinical and radiological data shows that MRI is the gold standard for PRES diagnosis. Observed MR imaging findings are consistent with the literature. CT scan, which is often the initial imaging test in patients with neurological symptoms, may not be sufficient to make the diagnosis.

Can air pollution induce dizziness? Corellation between number of patients with balance disorders in Poland with levels of air pollutants.

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Introduction:

Balance disorders include a lot of different symptoms like: vertigo, unsteadiness, lightheadedness, presyncope or dizziness caused by hyperventilation. It is caused mostly by peripheral vestibular dysfunction, subsequently by central nervous system lesions, psychiatric disorders and cardiovascular diseases. This problem is visibly more common in some regions of Poland, especially those, who struggle with air pollution. However there's not enough scientific publications on this issue.

Aim of study

In our study we wanted to assess the number of hospitalizations caused by dizziness with the average levels of the air pollutants.

Materials and methods

We used data provided by the National Health Fund concerning admissions to hospitals in Poland in 2014 and 2015 and levels of air pollutants from the Main Inspectorate of Environmental Protection.

Results

In 2014 the number of hospitalizations caused by balance disorders was 7545, 7369 in 2015. Women were mostly affected in both years (65,23% in 2015 and 65,34% in 2014). The largest group were patients between 60 and 80 years old (40%). We compared number of patients in every polish province with average levels of ozone, PM10 and PM2,5 in 2014 and 2015. There was a signifficant correlation coefficient between number of admissions caused by dizziness and levels of PM2,5 ($r=0,5$; $p=0,04$). There was also positive correlation between number of hospitalisation and high concentration of PM10 ($r=0,37$), and ozone ($r=0,39$), however not signifficant. Morbidity per 100 thousand residents showed a positive correlation with the air pollution but not statistically significant. Increased percentage of admissions among women was associated with high levels of PM10 ($r=0,52$; $p=0,02$).

Conclusions

Air pollution has undoubtley negative impact on human health. In our study we proved, that occurrence of such a common symptom as dizziness may be induced by the poor quality of air. However more investigations have to be conducted to find the exact cause of this dependence.

The myasthenia gravis activities of daily living scoring system (MG-ADL) as a useful outcome measure and in routine clinical management.

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Introduction:

MG-ADL (Myasthenia gravis - activities of daily living) questionnaire is a short and easy to use disease-specific eight-question survey of myasthenia gravis (MG) symptoms that can be completed in 2-3 minutes with no need for specialized equipment or training.

Aim of study

The aim of this study was to evaluate changes in neurological condition of patients with myasthenia gravis using the form MG-ADL for selected clinical factors.

Materials and methods

This prospective study for the period of 01.2016 - 12.2016 was conducted on 50 patients with MG who underwent neurological evaluation and completed the Polish translated version of the MG-ADL questionnaires. All patients were treated at the Medical University of Silesia Clinical Hospital No. 1 in Zabrze.

Results

The analysis showed a significantly higher score on the second assessment of MG-ADL questionnaire in patients with myasthenia gravis compared to the first visit ($p < 0.05$). Evaluation of neurological patients according to the MGFA classification showed, there were no statistically significant differences in the two assessments. Due to the subjective nature of the scale MG-ADL we assessed patients with myasthenia gravis by VAS (visual analog scale). Patients during the second visit received significantly lower scores of VAS ($p < 0.05$), which was unequivocal with deterioration of health (perceptible by patients).

Conclusion

The MG-ADL scale is a reliable and reproducible instrument that is easy to use for measuring clinical status of patients with MG in the practice setting. Subjective assessment of the patient should be combined with objective neurological examination.

BRAF and H3F3A genes mutations in neuronal and mixed neuronal-glial tumours of childhood.

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Introduction:

Paediatric neuronal and mixed neuronal-glial tumours include different entities with the most frequent ganglioglioma (GG) and dysembrioplastic neuroepithelial tumour (DNT) and relatively rare desmoplastic infantile ganglioglioma (DIG) and desmoplastic infantile astrocytoma (DIA). Although these neoplasms are considered benign, they are associated with early onset of seizures often leading to drug-resistant epilepsy. Recently the *BRAF*^{V600E} recurrent mutation has been detected in these tumours. The product of the *BRAF* gene is one of the key proteins in cell cycle regulation. *BRAF*^{V600E} has been observed in various human cancers what points to its significant role in oncogenesis. K27M and G34R/V mutations in histone gene *H3F3A* have been identified and associated with diffuse high grade gliomas and in revised edition of WHO classification of tumours of the central nervous system the diffuse midline glioma with an H3 K27M mutation was added as a new entity. However, more recent findings suggest that the mutation might not be specific to this type of high grade tumour.

Aim of study

The aim of the study was to assess the frequency of *BRAF*^{V600E}, *H3F3A*^{K27M} and *H3F3A*$^{G34R/V}$ mutations in the most frequent subtypes of neuronal and mixed neuronal-glial tumours in Polish population and to compare it with the data from literature.

Materials and methods

Eighty-eight tumours affecting patients aged 5 months - 18 years (mean: 8.89, median: 9.0) were included in the study. Among them there were 35 DNTs, 48 GGs, 4 DIGs and 1 DIA. Tumour samples were stabilised in RNAlater and stored at -80°C until further processing. DNA was isolated according to the standard protocol and stored at -20°C. PCR amplification and subsequent Sanger sequencing of *BRAF* and *H3F3A* genes were performed on all samples. Samples exhibiting a mutation in the sequencing underwent restriction enzyme analysis in order to confirm the obtained results.

Results

BRAF^{V600E} mutation was detected in 14 GGs (29.17%; 14/48) and 1 DNT (2.86%, 1/35). No *BRAF*^{V600E} was confirmed in DIGs or DIA. *H3F3A*^{K27M} mutation was detected in 2 GGs (4.17%, 2/48). *H3F3A*$^{G34R/V}$ mutation was not recorded in any of the samples.

Conclusion

In the literature the frequency of *BRAF*^{V600E} mutation in DNTs varies from 0 to 30% and our result of 2.86% remains within this range. The frequency of 29.17% in GG is consistent with the previous data that reports it on a level of 18 to 47%. *H3F3A*^{K27M} mutation was detected in 2 GGs (4.08%, 2/49), which confirms that the mutation is not limited to the high grade diffuse glial tumours.

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Analysis of association of c+70g polymorphism of ednra gene with ischemic atherothrombotic stroke in persons of different gender.

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Introduction:

Ischemic atherothrombotic stroke (IAS) is one of the most common forms of cerebrovascular disorders and, therefore, is an important medical and social problem. Pathophysiological basis of cerebral ischemic injury is endothelial dysfunction (ED). The main factor leading to the ED development is endothelin-1 (EDN1). EDN1 realizes its effects through specific endothelin receptors of type A and B (EDNRA and EDNRB). EDNRA has greater affinity for endothelin-1 and plays a key role in vasoconstriction, endothelial disorders progression, so it is involved in the development of cardiovascular disease and ischemic stroke in particular. Therefore, endothelin receptor type A gene can be considered as an important candidate gene that may be involved in the mechanisms of IAS development.

Aim of study

The aim of our research was to investigate the association of C+70G polymorphism of EDNRA gene with ischemic atherothrombotic stroke in persons of different gender.

Materials and methods

The study group included 170 unrelated Ukrainian patients with a mean age of 64.7 ± 0.73 years who had IAS. The control group consisted of 124 individuals with the absence of cardio-vascular pathologies. The main methods of research were the polymerase chain reaction method (PCR-RFLP) followed by analysis of restriction fragment length analysis when allocating of them by electrophoresis in agarose gel. Statistical analysis was examined by using SPSS-17 program. The differences were considered statistically significant with a P-value <0.05.

Results

It is established that the ratio of homozygotes for the major allele, heterozygotes and homozygotes for the minor allele for C+70G polymorphism in patients with IAS is 24.1; 57.6 and 18.2%, and in control group – 29.0; 50.0 and 21.0%, respectively (P = 0.426 using χ2-test). Comparison of data on rate of C+70G polymorphism types in the two sexes separately in the control group and patients with IAS did not reveal statistically significant results among females (P = 0.954) and males (P = 0.235). Splitting each group into subgroups by gender did not reveal statistically significant differences between control group (P = 0.965) and patients with atherothrombotic ischemic stroke (P = 0.173).

Conclusion

In our work we for the first time analyzed the association of C+70G polymorphism of EDNRA gene with the development of ischemic atherothrombotic stroke in Ukrainian population and found no connection of investigated genetic factor with IAS in the groups as a whole and by two genders.

Association of methylenetetrahydrofolate reductase gene polymorphisms with ischemic stroke and different risk factors.

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Introduction:

One of the most actual medical-social problems and the main factor, cause of death and disability in the world's population are vascular diseases of the brain. The leading mechanism of vascular lesion is endothelial dysfunction, a major initiating factor of which is homocysteine. A crucial role in the synthesis of T12methionine from homocysteine played by methylenetetrahydrofolate reductase enzyme (MTHFR).

Aim of study

To determine of the role of single-nucleotide polymorphisms C677T and A1298C of the MTHFR gene in the pathogenesis of ischemic atherothrombotic stroke and evaluate the potential contribution of polymorphic variants of this gene in the development of cerebral ischemia in patients with different risk factors.

Materials and methods

DNA extraction from the blood, polymerase chain reaction-restriction fragment length polymorphism, electrophoresis of amplified DNA fragments, statistical analysis with SPSS 21.0.

Results

Allelic polymorphism of the MTHFR gene is an important factor of genetic predisposition to development of acute disorders of cerebral circulation. T/T homozygotes C677T have a greater chance of developing IAS than carriers of main C-allele. In individuals with genotype C/C for A1298C polymorphism of IAS occurs in 2.3 times more frequently than the main allele carriers. Males with genotype C/T polymorphism of the gene for C677T MTHFR 2.3 times more resistant to IAS than genotype C/C. In men-homozygous for the minor allele (C/C) for A1298C polymorphism the risk of development of IAS in 3.5 time higher, than in carriers of the genotype A/A.

Conclusion

There is association with some risk factors IAS: BMI, hypertension, smoking. Homozygotes for the minor allele (polymorphism A1298C) with a BMI ≥ 25 kg / m^2 in 3.2 times more higher to IAS than homozygotes for the major allele. In people with normal blood pressure – carriers of the T/T genotype in hypertensive patients with genotype C/C C677T of the MTHFR gene, as well as in heterozygote A/C with hypertension (A1298C polymorphism) ischemic atherothrombotic stroke occurs more frequently. The risk of IAS higher group of non-smokers, with genotype T/T polymorphism C677T MTHFR.

Analysis of VKORC1 gene promoter G-1639A polymorphism association with ischemic stroke in patients with normal and increased body mass index.

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Introduction:

Overweight is one of the main modifiable predisposing risk factor for ischemic stroke (IS). Among non-modifiable risk factors the single nucleotide polymorphisms of genes of proteins that are involved in the pathogenesis of atherosclerosis occupies a special place.

Aim of study

The aim was to determine the possible association of G-1639A (rs9923231) polymorphism of VKORC1 gene with IS in subjects with normal and increased body mass index (BMI).

Materials and methods

The study conducted using venous blood of 170 unrelated Ukrainian patients with IS. The control group consisted of 124 healthy donors. Genotyping performed using PCR-RFLP method. Most statistical analyses performed using SPSS 17.0. The $\chi 2$-test used to compare genotype distributions between case and control groups. To estimate the risk we calculated the odds ratio (OR) and 95% confidence interval (CI) for the four: dominant, recessive, over-dominant and additive models of inheritance. All statistical tests were two-sided, P

Results

It was shown that the distribution of major allele homozygotes (G/G), heterozygotes (G/A) and minor allele homozygotes (A/A) in patients with IS was 28.8, 46.5 and 24.7%, respectively (in control group: 43.6, 39.5 and 16.9%, respectively) (P = 0.027). Division of case and control groups into subgroups according to the meaning of BMI allowed carrying out a comparative analysis of their genotype frequencies. Statistically significant differences for subgroups with overweight (BMI ≥ 25kg/m2) were established (P = 0.025). Analysis of genotypic association with IS under the four models of inheritance revealed an association between G-1639A SNP and IS in individuals with BMI ≥ 25kg/m2 under dominant model with or without the adjustment for gender, age, smoking and arterial hypertension (Pobs = 0.008, Padj = 0.016, ORadj = 2.391, 95% CI = 1.180–4.843). Additive model genotypic association was revealed both for G/A (Pobs = 0.029, ORobs = 1.997, 95% CI = 1.072–3.723) and A/A (Pobs = 0.020, ORobs = 2.478, 95% CI = 1.155–5.317) genotypes, but after adjusting for the risk factors the genotypic association remained for A/A genotype (Padj = 0.021, ORadj = 3.304, 95% CI = 1.199–9.106), and was lost for G/A genotype (Padj = 0.054).

Conclusions

Our results suggest that genotypes with minor A-allele of VKORC1 G-1639A polymorphism can be a possible genetic risk factor for IS in Ukrainian patients with increased BMI.

Oral outpatient steroids therapy in management of Multiple Sclerosis relapse - a survey study.

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Introduction:

Relapsing-remitting multiple sclerosis (MS) is an inflammatory demyelinating disease of the CNS, characterized by occurrence of relapses. In Poland relapse treatment algorithm generally is based on intravenous steroids administration, usually administered during hospitalization. Nevertheless there is an alternative, patients can be treated at home with oral steroids usage.

Aim of study

To assess the patients' and specialists' preferences referring to the form of MS relapse treatment and factors affecting their attitude; their knowledge concerning efficacy and safety of these medical approaches and necessity of creating unified criteria for relapse management.

Materials and methods

We created two unique questionnaires designed for two different target groups. Study was conducted among patients attending routine follow up visit at the outpatient clinics of the Department of Neurology the Medical University of Silesia. Scrutinized cohort consisted of 50 patients (F: 37, M: 13) aged (23 -64) who filled out 21-question surveys under our supervision. Moreover we got acquainted with opinion of neurologists, working in those clinics by posing 12 inquiries. Beside it we performed a research on the online support group for people suffering from MS.

Results

Patients questionnaire revealed that 72 % of SM sufferers prefer oral therapy and 43% of them pointed out the comfort of staying home as a main reason of their decision. Turning to questions referring to knowledge, more than a half of respondents considered both therapies equally safe and effective although oral therapy was believed to be slower acting one. While polling specialists opinion we found out that 81% prescribe oral therapy to patients however 60% of them choose it exceptionally. Moreover 81% of doctors expressed the need for creating new criteria of relapse treatment algorithm. Additionally 88% of online MS support group members was interested in oral steroid therapy during next relapses.

Conclusion

Current algorithm of intravenous steroid administration during MS relapse causes that neither patients' nor neurologists' expectations are fulfilled. Moreover according to these two groups there is no contradiction to more frequent application of oral steroid therapy at home.

The effectiveness of ACTH in West syndrome

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Introduction:

West Syndrome typically occurs in infants before the second year of life, usually near the 5th month. It consists of the characteristic triad of symptoms: infantile spasms, neurodevelopment delay/regression and hypsarrythmia or modified hipsarythmia in EEG. West syndrome can be classified into three groups: structural/metabolic, genetic and unknown cause. ACTH is one of the most accepted treatments for seizures control. However, the exact mechanism of action, optimal form, dose and duration are still unknown.

Aim of study

The aim of the study was to evaluate the effectiveness of ACTH therapy in the dose of 0.02 mg/kg/d for 8 weeks.

Materials and methods

We analyzed history of 24 patients with West syndrome on ACTH treatment, hospitalized in the Department of Pediatric Neurology of Medical University of Silesia in Katowice in the years 2009 – 2017. Mean age of the patients was 9,1 months (SD=6,2). All patients have epileptic spasms and hipsarythmia or modified hipsarythmia. 15 patients were classified as structural/metabolic and 9 as unknown cause. 23 patients were treated with at least two antiepileptic drugs before ACTH treatment, including vigabatrin in 22 patients. MRI, EEG, psychological evaluation, as well as ophthalmological, endocrinological and other consultations were performed. Metabolic and genetic studies were done when they were needed.

Results

ACTH in the dose of 0.02 mg/kg/d, administered for 8 weeks was effective in 91.7% patients with West syndrome including 8 patients with unknown and 14 patients with structural/metabolic cause.

Conclusion

A complete cessation of spasms and resolution of pathological EEG features is essential for good developmental outcome of children suffering from West syndrome.

ONCOLOGY & HAEMATOLOGY

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Frequency and risk factors of asparaginase hypersensitivity in ALL treatment in children.

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Introduction

Asparaginase is a crucial agent of acute lymphoblastic leukemia (ALL) therapy. However its use may be limited due to asparaginase-related complications of which hypersensitivity is the most common and ranges from localized skin reaction to severe anaphylaxis. Moreover asparaginase-induced hypersensitivity decreases its efficacy which requires discontinuation of further asparaginase administration. However, once hypersensitive to specific asparaginase formulation, the patient may be switched to another which allows to successfully proceed with the treatment. Currently three asparaginase-medications are available: two derived from *E. coli* (native L-asparaginase and polyethylene-glycolated asparaginase) and one from *Erwinia chrysanthemi*. Hypersensitivity to all these formulations deprives patients of appropriate dose of asparaginase and has severely adverse influence on their outcome.

Aim of study

The aim of the study was to investigate frequency of asparaginase hypersensitivity reactions in pediatric ALL patients and establish potential risk factors for its development.

Materials and methods

A retrospective review was performed on 74 patients (age 1-18) treated in University of Lodz's Pediatric, Oncology, Hematology And Diabetology Clinic between 2009 and 2015 according to ALL IC BFM 2009 Protocol. .

Results

Of 74 patients studied, 33 experienced hypersensitivity to at least one asparaginase medication (44,6%). 23 patients developed hypersensitivity to one asparaginase formulation (31% of all patients), 6 patients – to two (8,1%) and 4 patients to all three formulations (5,4%). First hypersensitivity event occuredsignificantly more frequently in reinduction phase (59,4%) than in induction (9,4%), early intensification (9,4%) and consolidation (21,9%) phases. As allocation to HR group requires the patients to receive higher dose of asparaginase than in two other risk groups, we investigated whether HR group patients are more likely to develop hypersensitivity. 60% of HR group patients were hypersensitive to asparaginase. In two other groups hypersensitivity frequency was 38,9%. However, these results were proved insignificant after application of Chi-Square Test (p=0,1). In order to assess age of onset as potential risk factor, patients were divided into two equally-numbered groups: patients above median age and patients below median age. Neither of these groups had higher risk of hypersensitivity event (p=0,42) There was also no statistically significant difference in hypersensitivity frequency between male and female patients (p=0,48).

Conclusion

While developing hypersensitivity to one asparaginase formulation is relatively common, hypersensitivity to all three asparaginase formulations is much rarer. Hypersensitivity event occurs most frequently in reinduction phase of the treatment. Gender, age of onset and risk-group allocation are not significant risk factors in hypersensitivity development.

Unexpected brain metastasis from prostate carcinoma - case report.

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Introduction

Carcinoma of the prostate is the second most frequently diagnosed cancer in males worldwide. Approximately 12.9% of men will be diagnosed with prostate cancer at some point during their lifetime. Tumors develop mainly in older men, average age at the time of diagnosis is about 66. Commonly they develop slowly and patients rather die with cancer, not because of it.Lot of cases can be safely followed with active surveillance or watchful waiting. However, sometimes cancers grow quickly and may spread to bones and lymph nodes. Medical publications describe only a few cases of prostate adenocarcinoma to the brain, which makes history of such patients rare and extraordinary.

Case Report

I would like to present history of a patient with prostate cancer and in the beginning very typical disease development. After diagnosis at age of 58 radical prostatectomy was performed. The next step was leuprorelin treatment. After three years local recurrence was revealed. Patient needed brachytherapy. Treatment was extended with bicalutamide. Typically, prostate cancer spreads to the bones and this also happened to this patient at the age of 62. Another palliative radiotherapy (spine C2-C7) was performed. The first cranial MR imaging (September 2015) showed a tumor in the left frontal and temporal lobes. Size was 6x3 cm (TR) and 6 cm (CC). It was pressing the left third ventricle and moving cerebral structures to the right. Due to unusual metastasis localization many histological examinations were done in Wroclaw but also sent to Warsaw. All analysis confirmed prostate cancer as an origin of meningioma.

Conclusion

The battle between oncologist and cancer is like a chess game. The doctor plans whole strategy and goes for checkmate. Unfortunately, there is always risk that the opposite chess-player, the cancer will make a move we did not expect. Such a situation had place in this case report. Nobody thought about metastasis to the brain. This proves that doctors need to be ready for all possibilities, because rare situations do not happen only in medical publications but also in our own hospitals. Predicting more incidents increases oncologist's and patient's chances for winning this game, checkmate. As it is presented, cancers develop and we also should.

Chemotherapy intervals in patients with acute lymphoblastic leukemia - do they influence the results of treatment?

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Introduction:

Acute lymphoblastic leukemia (ALL) is the most common childhood malignancy with survival rates approaching 90%. Remission is achieved by the administration of intensive multi-agent chemotherapy, very strict and specific to each day of treatment. The drugs are dosed with respect to prognostic features in order to balance the risk of relapse and toxicity.

Aim of study

To describe the influence of delays in induction therapy of ALLIC BFM 2002 and 2009 protocols on overall (OS) and event-free survival (EFS) in children suffering from ALL.

Materials and methods

Retrospective survival analysis (univariate Cox regression, log-rank test) of patients suffering from ALL hospitalized between 2003 and 2015 at the Department of Pediatrics, Oncology, Hematology and Diabetology of the Medical University of Lodz treated with protocols ALLIC BFM 2002 and ALLIC BFM 2009.

Results

184 patients were taken for analysis (F-112/M-72) - 160 patients suffering from ALL-B and 24 suffering from ALL-T. 131 children were treated with ALLIC BFM 2002 protocol and 53 children with ALLIC BFM 2009. The median age at diagnosis was 5.76 years. The probability of 5-year OS in the analyzed group was 82.94% and the probability of 5-year EFS was 79.54%. A delay in the 8^{th} day of the protocol occurred in 50 children and a delay in the 15^{th} day of the protocol occurred in 58 children. A delay in the 8^{th} day of the treatment protocol significantly increased the risk of death (HR=1.29; 95%CI: 1.14-1.46; $p<0.001$) and the risk of relapse or death (HR=1.31; 95%CI: 1.15-1.49; $p<0.001$). There was a statistically significant difference in OS ($p=0.001$) and EFS ($p=0.006$) between two groups of patients – with and without delays in the 8^{th} day of the protocol. A delay in the 15^{th} day of the treatment protocol was also associated with an increased risk of death (HR=1.13; 95%CI: 1.04-1.24; $p=0.005$) and an increased risk of relapse or death (HR=1.14; 95%CI: 1.04-1.24, $p=0.003$).

Conclusion

Delays in the 8^{th} and the 15^{th} day of the treatment protocol of ALL should be avoided since they are associated with lower OS and EFS.

Relative RUNX1 and RUNX3 gene expression level in patients with acute myeloid leukemia.

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Introduction

Acute myeloid leukemia (AML) is a cancer which affects white blood cells. The illness concern pathological hyperplasia of myeloid precursor cells which can lead to bone marrow failure. The etiology of AML is unclear, but genetic factors seem to play a significant role in cancer development. The *RUNX1* and *RUNX3* genes are likely to contribute to AML development. The *RUNX1* gene is a transcription factor. It is responsible for correct differentiation of precursor cells into mature cells, therefore, any expression changes of this gene might be associated with increased risk of AML development. The *RUNX3* gene encodes a protein which is a member of the runt domain-containing family of transcription factors. The protein has a tumor suppressor function and also an influence on other transcription factors.

Aim of study

Estimation of *RUNX1* and *RUNX3* genes expression level in patients diagnosed with AML.

Materials and methods

The investigated group consisted of 43 patients with acute myeloid leukemia diagnosis, 22 women and 21 men. Material used for this study was peripheral blood remaining after routine tests. To quantify the *RUNX1* and *RUNX3* genes expression level, the real-time PCR was used.

Results

All 43 selected cases presented qualitative expression of both investigated genes: *RUNX1* and *RUNX3*. The relative expression level of investigated genes differs among patients (from 0.13 to 18.37 for *RUNX1* gene and from 0.04 to 8.54 for *RUNX3* gene). There was a statistically significant difference between patients' gender and *RUNX1* gene expression level ($p=0.043$). There were no statistically significant differences between patients' gender and *RUNX3* gene expression level ($p=0.144$). Other investigated parameters included age at the time of AML diagnosis and FAB classification.

Conclusions

RUNX1 expression differs significantly between women and men, and thus can influence the process of leukemogenesis. *RUNX3* gene seems to have no potential connection with the AML development. The lack of correlation observed between the level of *RUNX1* and *RUNX3* gene expression and the analyzed parameters may be caused by relatively small number of analyzed cases. Further studies on larger group of patients are needed.

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Radiotherapy in patient with penile cancer recurrence refusing amputation

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Introduction

Primary penile cancer is uncommon in Europe and USA, incidence rate is <1/100 000 males. Squamous cell carcinoma (SCC) is the most common histological type. About 40% of all cases is associated with Human papillomavirus (HPV), especially among warty cancers where HPV prevalence reaches 70-100%. HIV infection is another significant risk factor. Depending on the cancer, type, size and location there are number of treatment options including: wide local excision, microsurgery, laser surgery, circumcision, amputation (penectomy) – partial or total removal of penis and surrounding lymph nodes. Radiation therapy is usually used adjuvantly to reduce risk of recurrence. The overall 5-year survival is about 50%. Prognosis is much better in early stages.

Case Report

80-year-old patient was admitted to Lower Silesian Oncology Center with diagnosis of penile cancer. Two month before he had circumcision and non-radical penile tumor excision. Histopatalogical examination revealed presence of carcinoma planoepitheliale akeratodes G2 in both samples. Surgical margin was positive. Computer tomography (CT) did not show any evident metastases or lesions located in the pelvis, lymph nodes were normal. Patient was diagnosed with local recurrence of penile cancer. He was proposed penis amputation as treatment option, however he refused. Therefore, he was qualified to high-dose-rate (HDR) brachytherapy with 3D planning based on CT. Total dose was 50 Gy in 10 fractions.

Conclusion

Brachytherapy might be effective alternative to total penectomy in patients who refused surgical treatment.

Cardiac metastases as the primary symptom of pulmonary carcinosarcoma: a case report.

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Introduction

Carcinosarcoma is one of the rarest neoplasms of the lung, it corresponds to about 0.5% of all bronchopulmonary tumors. It occurs mostly in smoking men population in age of 60. Histologically the tumor consists two types of highly atypical, proliferating tissues: epithelial and mesenchymal. Epithelial component is usually squamous cell carcinoma, it has been found in 69% of carcinosarcomas. As for the mesenchymal component spindle cell sarcoma is the most common. This malignancy has two different types of clinical representation: a endobronchial type localized centrally and a peripheral invasive type, which is considered to give metastases earlier and wider than the previous type.

Case Report

Aim of our study was to describe a case of a 43-year-old female, diagnosed with disseminated carcinosarcoma of the lung with a primary symptoms related to heart metastasis.

We retrospectively analyzed available medical data of the patients which include detailed physical examination report, histopathological examination, results of the image diagnostics before and during the treatment.

In 2015 a 43-year-old female was admitted to the Emergency Department of Medical University of Gdańsk due to a fainting episode. Patient also complained about a cough, slightly elevated temperature (37,2 C), palpitation and chest pain lasting 7 days. Physical examination revealed cardiac murmur thus echocardiography was performed, which showed a pathological mass infiltrating the left ventricular outflow track (LVOT). Chest computed tomography (CT) revealed a tumor in the middle lobe of the right lung and pathological lesions in the liver. Head CT showed a hypodensive lesion located in the right hemisphere of the brain, characteristic for metastases.

Emergency cardiosurgery had been performed and the tumor was partially removed from the left ventricle. After the histological examination of the heart infiltrating tissue and subsequent lung biopsy the metastatic carcinosarcoma of the lung was diagnosed.

Conclusion

The patient was immediately transferred to the Department of Clinical Oncology and Radiotherapy where the chemotherapy (ChT) based on carboplatin and paclitaxel was started. Because of elevation of baseline symptoms another CT scan was performed after the first cycle of ChT and the massive disease progression was revealed. Due to the rapidly deteriorating clinical status the treatment had to be discontinued. Finally, the patient was transferred to the hospice.

Early complications and morbidity after muscle-invasive bladder cancer treatment – single center study.

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Introduction

Radical cystectomy is probably most extensive urological surgery, which involves simultaneous procedure on gastrointestinal and urinary tract. As a result, various complications might occur in the early and late postoperative period. Number of preoperative variables such as age, sex increases or decreases risks of complications. Consequently, it is important to take them into consideration, whilst planning the treatment.

Aim of study

The aim of the study was to evaluate complications after surgical treatment of bladder cancer and identify preoperative factors that are associated with increased or decreased risk of complication occurrence.

Materials and methods

A group of 212 patients treated for bladder cancer in Urology Clinic of University Hospital in Wrocław was retrospectively analyzed. We assessed postoperative complications including high fever (>38 C), nephrostomy procedure after surgery, chyloperitoneum, bowel obstruction, extended intestinal paralysis, urinary leakage, wound infection, wound dehiscence, abdominal bleeding, stroke, reoperation. The Clavien-Dindo classification was included in our analysis. Various factors were statistically analyzed to evaluated their influence on complication occurrence.

Results

According to Clavien-Dindo classification 61 patients (28.8%) were grade I, 114 (53.8%) grade II, 14 (6.6%) grade III, 18 (8.5%) grade IV, 5 (2.6%) grade V. High fever was most common complication after treatment and was present in 57 patients. Nephrostomy was necessary in 10 cases. Condition of 8 patients resulted in reoperation. Urinary leakage was observed in only 2 patients, which is less than 1% of the group. Age and ASA score were significantly correlated with Clavien-Dindo score ($p < 0.05$).

Conclusion

Standard treatment of muscle invasive bladder cancer is radical cystectomy, which is associated with number of severe complications. Doctors should take into consideration factors such as age and ASA score that may be associated with increased risk of complications.

Granulocytopenia as a complication encountered during IVIG therapy of children with primary immunologic thrombocytopenia.

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Introduction

Patients suffering from primary immunologic thrombocytopenia are treated with intravenous immunoglobulins. Such therapy most frequently leads to granulocytopenia. Level of granulocytes decreasing below 0,5 M/ul is classified as a severe granulocytopenia, between 0,5 and 1 M/ul as moderate and from 1 to 1,5 M/ul as mild granulocytopenia.

Aim of study

Clinical analysis of the severity of granulocytopenia in terms of an adverse side effect occurring in IVIG therapy of primary immunologic thrombocytopenia.

Materials and methods

Blood tests assessing the level of granulocytes was performed on 47 patients diagnosed with primary immunologic thrombocytopenia, treated with IVIG in the Department and Clinic of Pediatric Hematology and Oncology in Zabrze in 2015 and 2016

Results

47 patients, 22 girls and 25 boys, aged 1 to 18 years were diagnosed with primary immunologic thrombocytopenia. Average platelet count on admission reached 19,581 ± 18,925 SD M/ul. Patients were treated with Privigen in total dose from 0,9 g/kg BW to 2,2 g/kg BW most frequently. The level of platelets increased above 10 M/ul usually between 3rd and 5th day of hospitalization. Diagnosis of granulocytopenia was established between 2nd and 4th day of hospitalization. 3 children were diagnosed with severe granulocytopenia, 14 with moderate and 10 with mild. Average time of hospitalization reached 7 days.

Conclusion

Asymptomatic granulocytopenia occurred in 27 children (nearly 57%). No patient got infected during the therapy. Most frequently the level of granulocytes decreased on the second day of treatment. The level of platelets increased over 100 M/ul mostly after three days of therapy.

Assessment of polymorphism at position G34A of ABCG2 gene in the group of patient with multiple myeloma.

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Introduction

Cancers, despite of progress in medicine, are still the second cause of death in humans. The main cause of the anticancer system therapy failure is considered the phenomenon of resistance to chemotherapy drugs. The Multi Drug Resistance is connected with group of membrane transporters. The largest group of them are the superfamily of ABC proteins. Interest of scientists around the overexpressed genes transporters associated with MDR allowed to take attention to another aspect of the changes, namely to reduce the amount and activity of the proteins encoded by these genes resulting in a reduction or loss of physiological protection function, so cells are strongly exposed and can accumulate toxic and mutagenic substances, what may predispose to carcinogenesis.

ABCG2 gene encodes membrane transport protein - breast cancer resistance protein – BCRP. This protein uses the energy from the hydrolysis of ATP to translocation of the substance by the cell membrane. BCRP has a wide spectrum of substrates and the polymorphisms in *ABCG2* gene can have a potential role in quantitative and qualitative changes of this protein.

Multiple myeloma is a cancer of the blood cells derived from bone marrow. It characterized by the clonal proliferation of atypical plasmocytes producing monoclonal immunoglobulin - protein M. It represents about 1-2 % of all malignant tumors and about 14 % of all haematopoetic cancers. Recent studies show that increasing the frequency of multiple myeloma and decreases the average age at the time of diagnosis. These data tend to look for new information in order to obtain a broader knowledge of the mechanism of early onset and resistance. It is important to look for new genetic markers which could become useful in the diagnosis, personalized therapy or in prognosis.

Aim of study

Evaluation of polymorphism G34A in the *ABCG2* gene in patients with multiple myeloma.

Materials and methods

Material for the study included the DNA isolated from peripheral blood patients diagnosed with multiple myeloma (investigated group N= 138) and from healthy people (control group N=102). [Consent of Bioethics Committee of Medical University of Lodz No: RNN/88/16/KE.] The polymorphism was determined by PCR-RFLP technique. Products of PCR reaction and products after digestion by restriction enzyme for visualization were made on a 2% ethidium-bromide agarose gel electrophoresis.

Results

In the group of patients with multiple myeloma genotype GG demonstrated the dominance with 100 %.

Conclusion

The examined polymorphism seems not to correlate with a predisposition to the development of the multiple myeloma or potential role in MDR. However, obtained results require confirmation in further studies on the greater group of patients.

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Walthard nest and Brenner tumor immunohistological study.

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Introduction:

Walthard rest are extremely common, small collections of cells, classified as transitional methaplasia located immediately beneath the tubal serosa. The epithelium of the lesion is morphologically identical to the epithelial nests in Brenner tumor. The cervix, endometrium and fallopian tubes are derived from the Müllerian ducts, whereas the ovaries develop from mesodermal epithelium on the urogenital ridge separate from the Müllerian ducts. Brenner tumors of the ovary and Walthard cell nests of Fallopian tubes have been considered to represent urothelial differentiation.

PAX8(staining for Müllerian derived epithelia) is a transcription factor involved in embriogenesis that have been utilized as immunohistochemical indicator of tumor origin. PAX8 is expressed by renal, Mullerian and thyroid tumor.

Uroplakin III is urothelial associated marker identified in urothelial carcinomas and considered to be supportive and specific for urothelial lineage.

Aim of study

The aim of the study was the analyze of immunohistochemical markers on Walthard nests and Brenner tumors to explore urothelial and Müllerian derivation.

Materials and methods

The material included 18 typical Brenner tumors, 22 Walthard cell nests and 8 normal specimens of urinary bladder used as controls. Specimens came from patients treated between 2012 and 2016 at the University Hospital in Bialystok. Tissues were fixed in 4% phosphate-buffered formaldehyde and processed routinely for paraffin embedding and stained with Hematoxilin and Eosin. An immunohistochemical analysis was performed using anti-PAX8(MRQ50), Uroplakin III(SP73) antibody in Brenner tumors and Walthard cell nests also in normal urothelium of the urinary bladder.

Results

Brenner tumors showed weak positivity with Uroplakin III supporting true urothelial differentiation in these tumors. All Brenner tumors were negative for anti-PAX8. Similarly, all Walthard nests were weak positive for Uroplakin III, all were negative for PAX-8 expression. Normal urothelium of the urinary bladder showed positive expression for Uroplakin III, and negative for PAX8.

Conclusion

These results support the hypothesis that the Brenner tumor and Walthard nests represent urothelial (transitional cell) differentiation. These data indicate that in Walthard nest and Brenner tumor Uroplakin III and PAX-8 expression may be similar. Our results may have diagnostic value of Uroplakin III in distinguishing transitional cell carcinoma of the ovary, nontransitional cell ovarian carcinomas and metastases of both cancer type to the fallopian tubes and PAX8 expression in primary or metastatic Müllerian tumors.

From conventional chemotherapy to targeted therapy - evolving treatment of chronic lymphocytic leukemia.

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Introduction

Chronic lymphocytic leukemia (CLL), the most common adult leukemia, is characterized by accumulation of monoclonal, functionally incompetent lymphocytes in blood, marrow and lymphoid tissues. CLL represents heterogenous malignancy, however majority of patients (pts) do not require any therapy. Decision about the therapy implementation and the choice of proper treatment depends on the stage of disease and the presence of poor prognostic factors. Treatment strategy of CLL has recently undergone profound changes, with the use of novel targeted agents. Idelalisib as inhibitor of phosphoinositide 3-kinase represents promising novel agent in treatment of CLL pts, especially carrying del(17p) mutation

Case Report

55-year-old male patient was admitted to hematological unit in January 2016 due to growing leukocytosis, lymphadenopathy, weight loss and increasing weakness. Complete blood cell count revealed lymphocytosis (15.12x109/l) without anemia and thrombocytopenia. Abdominal and chest computed tomography scans detected nodal masses (maximal size: 164mm x 82mm), especially below diaphragm. Bone marrow biopsy showed massive infiltration of small mature lymphocytes cells with phenotype: CD5+CD19+, CD23+, CD20+ and monoclonal kappa light chains restriction. Lymph node biopsy revealed infiltration of lymphocytes with expression of CD19, CD5, CD23, bcl2, ZAP70, poor expression of CD20, negative expression of cycline D1, CD3, CD10 and Ki67 expression in 20% of cells. Genetic study revealed del(17)(p13.1) in 85% of cells. Diagnosis of high risk CLL stage III according to Rai staging system was established and because of progressive disease the patient was qualified to treatment. Therapy with FCR (fludarabine, cyclophosphamide, rituximab), which is standard chemotherapy for CLL was introduced and search for HLA-matched donor for allogeneic stem cell transplantation was started. After 3 cycles of FCR no response was observed and the condition of the patient worsened. At this time it was possible however to start with modern therapy with idelalisib, especially recommended for del(17p) CLL pts. After 1 month of idelalisib given with rituximab, systemic symptoms resolved and nodal masses diminished significantly (maximal size: 72mm). Recently, after 7 months of treatment patient present lymph-node response and remain in stable general condition.

Conclusion

Heterogenicity of CLL explains variety of compounds available to target oncogenic pathways. Treatment of CLL has been revolutionized by presence of novel targeted agents. Idelalisib, targeting malignant B-cell proliferation, survival, migration and homing to lymphoid tissues demonstrate impressive activity within del(17p) CLL pts. Longer follow-up is required to determine tolerability of idelalisib in CLL pts.

Superior stem cells collections in unrelated donors using novel collection protocol.

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Introduction

Hematopoetic stem cells are routinely obtained from unrelated donors by leukapheresis after the G-CSF stimulation. There are two collection protocols – working with intermittent (MNC) and continuous flow collection (cMNC). There are situations where problems with collection of optimal number of stem cells are expected: disproportion of weight between the donor and recipient and low number of circulating stem cells after the G-CSF stimulation. cMNC is novel protocol with limited experience in unrelated donors.

Aim of study

The study aimed at comparison of efficiency of this two protocols for CD34+ cells collection in clinical scenarios where lower collection yields are expected.

Materials and methods

In this retrospective single-center study we collected data from 216 consecutive healthy non related donors that underwent cMNC (68 donors) and MNC (148) apheresis procedures

Results

The cMNC protocol showed a higher CD34+ cells concentration in product (0,89% vs 0,76%, $p<0,05$) and higher number of collected CD34+ cells (7,9 x106 CD34+/ kg vs 6,8 x106 CD34+/ kg, $p=0,07$). Pre- and post-procedure laboratory values (WBC, HGB and platelet count) did not differ significantly between two analyzed groups. Only one apheresis was needed for collection of requested cell number in 90% of cMNC group as compare to 88% in MNC group. In both groups of donors pre-apheresis peripheral CD34+ cell count and disproportion in weight between donor and recipient ware the major factors influencing the need for second apheresis.

In donors with CD34+ cell count lower than average (112 cells per ul) cMNC showed higher CD34+ cell concentration in product (0,74% vs. 0,57%, $p<0,05$) and higher total number of collected CD34+ cells per donor weight (6,25 x106 CD34+/ kg vs. 5,21 x106 CD34+/ kg, $p<0,05$). In this group of donors one apheresis was sufficient in 86% of cases with cMNC protocol and 77% of cases MNC ($p<0,05$).

In the group of donors whose body weight was lower than recipient's cMNC protocol lead to higher CD34% concentration in product (0,83% vs. 0,72%, $p<0,05$). Again cMNC protocol was more effective as only one apheresis was needed in 88% of donors compared to 80% of donors collected with MNC ($p<0,05$).

Conclusion

cMNC protocol is significantly more efficient in donors with low pre-apheresis peripheral CD34+ cell count and in cases of disproportion in weight between donor and recipient. The use of cMNC in all donors could further improve results of the center.

Correlations between histological aspects and risk factors with potentially carcinogenic impact in bronchopulmonary cancer.

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Introduction:

Bronchopulmonary cancer(BPC) is a very common form of malignancy in modern civilization. Romania and some other countries in Eastern Europe are experiencing an increase in mortality caused by BPC. Late diagnosis and high mortality rates are caused by the absence of a nationally adequate medical education, as well as by a rapid evolution and, by sometimes asymptomatic character of the disease.

Aim of study

Our research aimed at identifying correlations between histological types of BPC and the risk factors mentioned below.

Materials and methods

The results of this research study is based on a retrospective analysis of anamnestical data combined with clinical and laboratory examinations. A total of 153 patients was statistically analyzed in terms of risk factors such as: age, gender, geographical origin, smoking, exposure to toxic environment, etc

Results

The results are presented in tables and graphic images accompanied by relevant histological pictures. The frequency of BPC is relatively constant with a slight increase in the last few years. The most affected age group is between 60-69 years. Dominating microscopic aspects are: epidermoid carcinoma followed by adenocarcinoma. Epidermoid carcinoma is the most common type, regardless of age group or gender.

Conclusion

BPC remains an issue of major concern in terms of frequency, evolution and prognosis.
Establishing methods of screening in the general population would have a beneficial role in the early detection of pulmonary neoplasia, which would contribute to a favorable course of disease and better prognosis.

HER2 status in breast carcinomas.

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Introduction

Amplification of the human epidermal growth factor (HER2) is one of the most important risk factors for aggressiveness and metastatic spread in breast cancer. However, expression of the HER2 gene has become a major target in new therapeutic techniques.

Aim of study

The main aim of the study was to describe and collate various features of neoplastic cells with or without HER2 expression. The patients were divided into groups depending on HER2 expression and their age. We assessed size, grading and lymph node involvement of the breast tumor.

Materials and methods

The material consisted of histological preparations obtained from patients treated for invasive breast cancer – 164 studies reported HER2+ cancer and 106 reported HER- cancer. Preparations stained with H&E were used to identify tumor type and its histological grading. HER2 expression was determined using HerceptTestTM DAKO test. Tumors with 0 and 1+ staining were considered negative, cases scored as 2+ were considered equivocal and cases with 3+ staining were considered positive. To examine statistical significance we used Mann-Whitney U Test.

Results

In /HER+/ group the largest proportion accounted for T2 tumors (48%), while there was 44,1% of T1 tumors. In /HER-/ group we observed a opposite pattern (T1- 55.7% and T2- 30.2%). This difference has proven to be statistically significant (p=0.003). In 49.1% of cases the lymph nodes were not affected. However, we noticed that in /HER+/ group there was 15.9% of N2 and 8% of N3 tumors, whereas in /HER-/ group – respectively: 5.8% and 2,3%. We found a statistically significant difference (p=0.002) in the proportion of the G3 tumors - in /HER+/ it reached 46.6%, while in /HER-/ - 26.4%. /HER-/ tumors occurred only in younger patients (<50 years old) and they accounted for 75.1% of tumors in this group.

Conclusion

Our results show that the /HER+/ cancer is more aggressive and more likely to spread than /HER-/ due to the significant difference in the distribution of the tumor grades, tumor sizes and the lymph node involvement. /HER-/ breast cancer in this study appears to be more common among younger women.

Evaluation of endothelial progenitor cells in the bone marrow of pediatric patients with acute lymphoblastic leukemia in the course of ALLIC 2009 treatment protocol.

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Introduction:

Endothelial progenitor cells (EPCs) are progenitor type of cells expressing variety of surface markers characteristic for vascular endothelial cells. The current data indicate that EPCs may contribute to formation of new vessels in hematologic malignances including acute myeloid leukemia (AML) and chronic myeloid leukemia (CML). However, role of these cells has not yet been proven in terms of acute lymphoblastic leukemia (ALL) - a malignant disorder of lymphoid progenitor cells, which results in accumulation of lymphoblasts in the bone marrow. ALL is the most common in childhood with a peak incidence at 3–5 years of age with a cure rate reaching 80% of affected children. Importantly, the survival rate is significantly lower in children under age of 1 and adults.

Aim of study

In this study we aim to evaluate the changes in frequency of EPCs in the bone marrow prior to and during treatment of ALL pediatric patients to establish their possible role in the disease.

Materials and methods

The study was carried out in 30 patients with ALL and 35 controls. The bone marrow samples were derived from ALL patients at the time of diagnosis, after 33-rd day of treatment, at the beginning of M protocol, and during diagnostic procedures from control group. EPCs were distinguished with the use of fluorochrome-labeled monoclonal antibodies including: anti-CD34, anti-CD309, anti-CD133. Changes within EPCs percentage were estimated using FACSCalibur flow cytometer.

Results

We observed that the level of CD34+CD309+CD133+ EPCs in the bone marrow in ALL patients at the time of diagnosis was considerably higher comparing to the control group ($p = 0.0530$). At subsequent time points level of EPC seemed to be lower compared to untreated patients, however, in reference to CD34+CD309+ cells we observed tendency for increased frequencies in response to applied treatment ($p = 0.0666$).

Conclusion

Here we demonstrated an increased level of EPCs in the bone marrow of ALL pediatric patients which activity could contribute to increased rate of neovascularization and unfavorable support of metastatic processess. Applied treatment seems to restore normal levels of EPCs, however, further investigation could verify these results and clearly define role of that population of progenitor cells in ALL pathogenesis.

OPTHALMOLOGY & OPTOMETRY

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Double trouble: may atrial fibrillation cause primary open-angle glaucoma?

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Introduction

Glaucoma, is the second cause of blindness worldwide. It is a group of diseases characterized by progressive optic nerve degeneration that results in visual field loss and irreversible blindness. The most common form of glaucoma is primary open angle glaucoma (POAG). It is a well-known fact that the atrial fibrillation is a risk factor of POAG but the molecular background of this phenomenon is still unexplained.

Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia, and is associated with a five-fold increase in the risk of ischemic stroke and systemic embolism. Left atrial appendage (LAA) is the source of thrombi in up to 90% of patients with nonvalvular AF. Short episodes of AF can cause myocardial damage within the atrium, which in turn stimulates the release of prothrombotic factors onto the endothelial surface, leading to the aggregation of platelets. The prothrombotic state also correlates with the degree of LAA dysfunction.

Aim of study

The aim of the study was to evaluate the role of coagulation attendant atrial fibrillation might be the reason of ischemic optic nerve loss in primary open angle glaucoma. Thus, we evaluated the expression level of coagulation factors in blood of patients with primary open angle glaucoma, atrial fibrillation to estimate whether the high level of mentioned factors would be associated with higher risk of POAG prevalence.

Materials and methods

There were included 20 patients with POAG, 20 patients with AF as well as 20 patients with both POAG and AF hospitalized in the Department of Ophthalmology, Medical University of Warsaw. All patients and control subjects enrolled to the study were Caucasians. The expression levels of Coagulation factor XIII (F13A1), Platelet basic protein precursor (PPBP), von Willebrand Factor (vWF), thromboplastin (TPL) and interleukin 6 (IL-6) genes were assessed using Real-Time semi-quantitative PCR method.

Results

Found that expression of F13A1 was 2.13 times higher and expression level of TPL was 3.11 times higher in patients with POAG and AF in comparison with these with AF alone, However, both of them were not statically significant (P=0.240 and P=0.650, respectively). It was found that expression level of vWF was 1.54 times higher in POAG and AF group than AF alone, but it was not statically significant (P=0.852). Furthermore, it was shown that expression of IL-6 was 1.94 times higher in patients with POAG and AF in comparison with these with AF, but it was not statically significant (P=0.444). Level of PPBP was nearly the same in both groups (1.08-fold, P=0.898).

Conclusion

Obtained results did not reveal any statistical significance. To confirm the correlation between primary open angle glaucoma and atrial fibrillation and improve the statistical strength, it is necessary to increase the amount of participants.

Unusual paraneoplastic syndrome in small cell lung carcinoma - a case report

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Introduction

Small cell lung carcinoma (SCLC) is known to be the culprit behind numerous paraneoplastic phenomena. Here, a case of an advanced SCLC is presented, complicated by hyponatremia and neurological symptoms.

Case Report

A 79 year-old white past smoker man was admitted to the clinic due to periodic cough, weakness, body weight loss and radiological abnormalities in chest radiograph and computerized tomography (CT) scan.

After admission the patient presented disorientation and somnolence linked to hyponatremia. Over the course of few hours he reported total blindness of no apparent ophthalmologic origin. Apart from this, while rebalancing electrolytes' levels the patient became aggressive - consequent brain CT showed a tumor of a metastatic origin.

Based on patomorphologic and other examinations, a diagnosis of SCLC (T3N2M1) with accompanying paraneoplastic signs was made. After an oncological consultation the patient was referred to cerebral radiotherapy followed by a regimen of carboplatin and etoposide. He exhibited good response to the treatment and was subjected to six courses of chemotherapy.

Conclusion

As a heterogenic condition, SCLC remains capable of producing unexpected paraneoplastic symptoms. It requires close attention to distinguish them from independent diseases.

The influence of concomitant medial wall fracture on the results of orbital floor reconstruction.

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Introduction

Blunt trauma to the orbit usually results in orbital walls fracture with common location in orbital floor. In 27% to 35% of such cases the fracture extends on the medial aspect of the orbit. Such extension of the wall defect often remains undiagnosed on computed tomography scans, but implies additional clinical signs. They include periorbital edema and ecchymosis, subcutaneous emphysema, epistaxis. In addition to vertical incomitant strabismus which results from orbital floor fracture, medial wall defect is associated with restriction of abduction and less commonly limitation of adduction eliciting horizontal diplopia. As the size of orbital wall defect is larger in such cases, more pronounced enophthalmos is noted. Orbital reconstruction surgery with use of alloplastic materials is meant to alleviate diplopia, restore proper orbital volume and create a rigid barrier between orbit and the sinuses.

Aim of study

The aim of this study was to determine the influence of concomitant medial wall defect on the results of surgical reconstruction in patients with orbital floor fracture.

Materials and methods

The study was designed as a retrospective analysis of medical records. During a 2-year period, all patients with radiographic evidence of orbital floor fracture, with or without concomitant medial wall defect, who subsequently underwent reconstruction surgery were evaluated. 78 cases were identified. Data concerning age, sex, timing of the surgery and sort of alloplastic material used for orbital reconstruction procedure were obtained. Computed tomography scans were performed in order to diagnose the presence of tissue herniation and to determine the type of fracture. Orbital reconstruction surgery was performed in similar fashion in all cases with just a variation of alloplastic material used. In all cases the results of orthoptic assessment conducted before and 3 months after the surgery were noted.

Results

Comparision of exophthalmometric measurements revealed a significant ($p=0.02$) difference between groups in preoperative assessment. Patients with associated medial wall defect had larger enophtalmus than those with isolated floor fracture. However there was no such difference after the orbital reconstruction ($p=0.42$). At 3 months after the surgery persistent vertical diplopia was more common in group II (group I 11.1%; group II 15.2%). There was no horizontal diplopia noted in group I nor before nor after the surgery.

Conclusion

The presence of concomitant medial wall fracture in cases of orbital floor fractures leads to more severe enophthalmos before reconstruction. Due to that fact it requires an additional surgical supply.Enophthalmos can only be managed by maxillofacial surgery. Despite many modifications and improvements of surgical orbital wall reconstructions the trauma teams still facing the challenge of resolve diplopia.

Elevated levels of CA19-9 and Ca125 predicts overall survival time in the pancreatic adenocarcinoma

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Introduction

Vision standards exist in any occupation to protect the individual, to protect others in the work environment and to ensure that an individual can perform all of the tasks required for the job in any circumstances. Nowadays the surgeon is often required to perform visually demanding tasks, including microsurgery and advanced endoscopic procedures. That is why depth perception in both open and close invasions, ability to perform 2D and 3D procedures are essential and may be harmed by monocular visual impairments.

Aim of study

The main purpose of this research is to check the med students' awareness of binocularity, its importance during choice of ones specialty (especially surgical ones), and opthalmological contraindications in chosen specialty. Additionally-to check the stereoacquity among students.

Materials and methods

30 volunteer students from MUL (18 male; age 23±2 yo) were included in the study. The first step of the study protocol was an 11 points questionnaire, covering lifechoise of the future specialization, awareness of ophthalmological contraindications for chosen specialty and awareness of student's own visual acuity and binocular status. Subsequently all the participants underwent ophthalmic examination which included: best corrected visual acuity, refractometry, cover –test,TNO and Randot tests. The data was gathered and analyzed statistically.

Results

Among all the students 53% declared the choice of surgical specialty in the future. Most of them (87%) were aware of their visual acuity. Only 31% of the students, who declared surgical specialty as the future choice, were aware of the contraindications related to low visual acuity and binocularity. In relation to the above mentioned only 38% are familiar with the term "binocularity" and it's importance in performing surgical procedures. 30% of the students were orthophoric. On Randot stereotest the mean result was 28.75±59.4 sec of arc. On TNO test the mean stereoacuity was 90±100 sec of arc. 13% of all students had stereopsis level out of the normal range.

Conclusion

In general, the awareness of own binocular status among medical students is low. There is a strong need for knowledge improvement of the ophthalmic contraindications among students whose future specialty choice is connected to surgery. Stereoacuity levels in medical students is close to the reported among the general population.

Association of CXCR3 gene expression level with progression of primary open-angle glaucoma in a Polish population

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Introduction

Primary open-angle glaucoma (POAG) is multifactorial optic neuropathy characterized by damage the optic nerve and vision loss. Many factors, such as genetic, environmental and intraocular pressure, play important role in progression of POAG. The scientists were pointed out some resemblance of pathomechanism of neurodegenerative diseases affecting various structures in CNS and glaucoma. CXCR3 (C-X-C motif chemokine receptor 3) is a protein which have a crucial role in inflammation process. In 2000, the scientists have discovered interactions between neurons and glia by CXCR3 and CXCL10. The gene encoding CXCR3, is responsible for one of the main pathomechanism of Alzheimer's disease (AD) development, namely amyloid β formation. Moreover, it was observed that changes of *CXCR3 gene* expression are associated with AD and retinal ganglion cells degeneration caused by elevated intraocular pressure. The activation of CXCL10/CXCR3 has been shown to promote microglia recruitment and induction neuronal cell death in several models of neurodegeneration. It has been also demonstrated that CXCR3 and CXCL10 are involved in the induction of endoplastic reticulum stress. After ischemic injury, it was observed activation of CXCR3 resulting in ER stress induction.

Aim of study

The purpose of the work was to evaluate the relationship between *CXCR3* gene expression level in patients with primary open angle glaucoma and the control group. Moreover, we tested the impact of *CXCR3* expression level on the progression of POAG depending on clinical parameters.

Materials and methods

Blood samples from 34 POAG patients and 31 healthy control subjects were collected in 3 ml EDTA tubes and mixed with RNA later buffer. RNA were isolated from peripheral blood lymphocytes. Then, first-strand cDNAs were synthesized by reverse transcription. The *CXCR3* expression levels were determined by QPCR method. The non-parametric Mann-Whitney U test was applied to determine the levels of mRNA expression in blood of POAG patients and healthy subjects. The ANOVA test was applied to compare level of mRNA expression with clinical parameters. P-values of less than or equal to 0.05 were considered to represent statistical significance.

Results

We observed no statistically significant differences between *CXCR3* mRNA levels of POAG subjects and control groups ($p>0.05$). However, our results have shown significant association of the *CXCR3* expression level with progression of POAG according to RA value (Rim Area), $p=0.006$. We indicated increase of *CXCR3* expression level with the early stage of glaucoma, which emphasizes the role of *CXCR3* gene in the pathogenesis of POAG.

Conclusion

In conclusion, our study showed a statistically significant association of *CXCR3* genes with progression of POAG in a Polish population.

Keratoprothesis or keratoplasty - what to choose after repeat corneal graft failure?

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Introduction

Corneal transplant are one of the most popular transplantation surgeries in the world. Loss of corneal transparency is a major cause of blindness, affecting 8 million people worldwide. Graft failure is often seen. The rejection rate was reported to be as high as 30% after 5 years of a successful keratoplasty. Metaanalysis, kohort study that compared keratoplasty and keratoprotesis and non-comperative, keratoplasty study were analyzed.

Aim of study

Solving the problem of making a choice after repeat corneal graft failure to enhance prognosis for such patients.

Materials and methods

Metaanalysis (29 855 eyes), retrospective, nonrandomized study (53 patients recived PK , 27 received KPro).

Results

The study revealed better maintenance of postoperative visual acutity and less proportion of patients with graft failure. Furthermore complications showed slightly higher rate of glaucoma occurance in KPro group. Retrospective non-comparative, descriptive study (30 eyes patients with failed PKP) was also taken into consideration.

Conclusion

Keratoprotesis is a better resolution for patients with repeat graft failure for the sake of postoperative visual outcomes and graft maintainance.

Comparison of femtosecond laser-assisted and conventional method cataract surgery

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Introduction

Cataract is a main cause of a reversible blindness in the world, its surgery – the most common operations. New methods try to obtain better postoperative visual acuity and reduction of complications. Femtosecond laser-assisted cataract surgery and intra ocular lenses are one of such resolutions.

Aim of study

We compare femtosecond laser-assisted cataract surgery with conventional phacoemulsification, taking into consideration features such us postoperative visual acuity, absolute mean difference in visual acuity and postoperative complications.

Results

Analysis revealed not significant differences in absolute mean differences between both methods. Obtained visual acuity were minimal to clinically insignificant.

Proportion of intraoperative complications (tear of anterior and posterior capsule) is low and comparable in both methods, while postoperative complications – higher in femtosecond group. Nevertheless femtosecond group has a lower rate of corneal epithelium loss what is an important issue for patients with less amount of its number (Fuch's epithelium dystrophy).

Conclusion

Femtosecond laser-assisted cataract surgery is characterized by high efficiency of refractive outcome and low number of postoperative complications, but these results do not overcome conventional phacoemulsification. Price, low availability and complex utilization limit its exploitation. Creating a precise, safe, and reproducible capsulotomy is a prerequisite for success in cataract surgery and for IOL implantation – it is useful for example in patients with subluxated cataracts and Marfan's syndrome.

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The influence of the type of stabilisation of the osteotomy on the results of the surgical correction of hallux valgus deformity by SCARF method

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Introduction

SCARF osteotomy of the first metatarsal is indicated in mild and moderate hallux valgus deformity. It is triplanar and usually requires stabilisation by 2 screws. With some modifications stabilisation by 1 screw or even without implant is possible.

Aim of study

Main goal of the research was to evaluate radiological and clinical results of the hallux valgus surgery, depending on the type of stabilisation.

Materials and methods

Between 2013 and 2016 130 patients were qualified and undergone hallux valgus correction using SCARF method. Decision of the type of stabilisation was taken during the surgery. We retrospectively separated all the patients for 3 groups depending of the type of implant used: A- 2 screws, B- 1 screw, C- without implant or with bone suture. In each group hallux valgus angle (HVA) and intermetatarsal angle (IMA) were evaluated on anteroposterior and lateral weight bearing X-ray examination pre- and postoperatively. American Orthopedic Foot and Ankle Society (AOFAS) hallux-metatarsophalangeal-interphalangeal scale was used for the clinical assessment preoperatively and at 12 months' follow-up.

Results

The average HVA angle significantly decreased postoperatively in all groups (A- from 39.8° to 15,2°, B- from 35.8° to 12,8°, C- from 35.2° to 11.6°) but difference between groups was not statistically important. The average IMA angle also significantly decreased postoperatively in all groups (A- from15.5° to 6.9°, B- from 15.1° to 6.6°, C- from 15.38° to 6.6°) but difference between groups was not statistically important. In every single group The average AOFAS score increased postoperatively in all groups (A: from 45 to 88 points, B- from 42 to 85

Conclusion

The type of stabilisation does not influence on the results of the surgical correction of hallux valgus deformity using SCARF method. Non implant method has a long learning curve but is cheaper and faster. To avoid complications it should be used only by experienced surgeon.

Evaluation and comparison of conservative versus surgical treatment of both-bone forearm shaft fractures in pediatric patients.

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Introduction

Both bone forearm fracture is one of the most common pediatric fractures. It usually occurs from fall from a height. The main symptoms are forearm pain and deformity. This fracture can be treated by non-operative method with closed reduction and immobilization or operative method with titanium elastic nails (TEN).

Aim of study

Evaluation and comparison of operative and non-operative treatment methods of forearm shaft fracture including complications of operation using TEN.

Material and methods

This retrospective study included two groups. The operative group (A) is 54 patients (55 forearms), 17 female and 37 male (4-16 y, mean age 9,85 y). The non-operative group (B) is 41 patients, 18 female and 23 male (4-17 y, mean age 9,15 y). Bone healing was measured with X-ray scoring system described by Lane and Sandhu. Range of motion was examined in the end of treatment.

Results

In group A after an average 9,9 weeks (range 4-22) the bone formation in fracture gap was rated for 3,85 points and bone remodeling for 3,40 points. In group B after an average 8,2 weeks (range 4-20) the results were 3,72 points for bone formation in fracture gap and 3,00 points for bone remodeling. Average scores were taken into account. Limitation of range of motion occurred in 24,5% of group A and 27,0% of group B. Other complications occurred in 16,4% of group A and 31,7% of group B. 20,0% of group A required an open reduction. In 12,2% of group B it was necessary to use internal fixation after failure of non-operative treatment.

Conclusion

Elastic intramedullary nailing is an effective method in treatment of displaced and unstable pediatric forearm shafts fractures. The outcomes are slightly better than non-operative treatment. There are different difficulties and complications in operated and non-operated patients.

Functional assessment of people over 60 years of age with depression.

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Introduction

Seniors are in the group of people who are particularly vulnerable to depression. Despite the growing knowledge of mental illnesses and disorders, in many cases old age depression remains unrecognized and untreated. This, in turn, worsens the quality of life of patients and carries a number of consequences, both medical and economic.

The causes of this situation can be traced to stereotypes of old age and overlapping other health problems. Often, seniors themselves are convinced of the inevitable deterioration of their health, including their mental health during aging.

The elderly suffer from depression as often as the younger ones (the prevalence of depression in the population of 65 is about 15%). In certain patient populations may be much more, especially in caregiving institutions.

Aim of study

In our study, we performed a functional evaluation after 60 years of age with depression as part of a Comprehensive Geriatric Assessment.

Material and methods

Cross-sectional 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 2017. The study involved 261 participants, including 176 people assigned to the group without depression, and 85 to the group with mild depression. Recruitment for both groups took place on the basis of specific inclusion and exclusion criteria.

Results

Mean GDS score for people with depression was 13,84 (95%CI 13,34-14-33), and for without depression was 5,65 (95%CI 5,24-6,06). Mean BMI for people with depression was 26,82 (95%CI 25,55-28,10) and for without depression was 28,64 (95%CI 27,88-29,41). Mean IADL score for people with depression was 24,88 (95%CI 24,33-25,43) and for without depression was 25,53 (95%CI 25,20-25,86). Mean Tinetti Score for people with depression was 21,06 (95%CI 20,00-22,13) and for without depression was 23,12 (95%CI 22,50-23,74). Mean FACIT score for people with depression was 65,72 (95%CI 57,84-73,61) and for without depression was 85,85 (95%CI 81,29-90,42).

Conclusion

In our study we found that people over 60 years old with depression was significantly lower BMI, higher risk of fallen, lower functional efficiency and lower quality of life. There is no difference between age and cognitive functions for people with or without depression. Lower functional efficiency may be a major factor in increasing the risk of depression. Therefore, it is important to carry out geriatric rehabilitation in the elderly, taking into account factors of illness, mental and socioeconomic factors.

Comparative analysis of the impact of high tone therapy and vibroacoustic therapy in patients with osteoarthritis of the knee joints.

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Introduction

Osteoarthritis has already been named a 21st century epidemic due to its prevalence. The initial symptoms appear after 50 years of age. At 65-75 years of age, full-spectrum osteoarthritis is a rule. The most common symptoms in patients are: pain, stiffness of the joint and limitation of mobility, which is often accompanied by muscular dystrophy.

Aim of study

The aim of this study was comparative analysis of the impact of high tone therapy and vibroacoustic therapy in patients with osteoarthritis of the knee joints.

Materials and methods

The study involved 56 patients aged 52 to 79, who were randomized in two treatment groups. The first group consisted of 28 patients was treated with high tone therapy (WaDiT ®), meanwhile the second group was treated with vibroacoustic therapy (Vitafon-T®). Therapy consisted of 10 treatments performed daily for two weeks. In order to compare the effectiveness of selected treatments, all persons underwent a procedure. The diagnostic part of the study consisted of: questionnaire, assessment of pain (according to VAS scale), measurement of the knee joint by the patella (centimeter measure), functional tests.

Results

In the group I studied, statistically significant decreases in circulars in the knee joints. There was a decrease in swelling on average by 1 cm. In the second group the change was noted by an average of 0.6 cm. Analysis of all results and mean differences in subjective and functional tests showed that better results were obtained in patients who received high tone therapy.

Conclusion

The high tone therapy and vibroacoustic therapy have contributed to reducing pain in knee degeneration. In a similar impact on the reduction of exudation and circumference reduction of the knee joint.

Trans-metacarpal hand replantation. Procedures and outcomes

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Introduction

Hand replantation is one of the most technically difficult interventions in the microsurgery field. In order to avoid limb loss, there is an informal Replantation Service in Poland. Every day 1 of 7 qualified centers is ready to admit patients who have sustained traumatic amputation.

Case Report

A 53-year-old patient amputated his hand with a tinware guillotine while working in a workshop. After a preliminary assessment in ER, phone consultation, he was admited to Department of Orthopaedics and Traumatology MUG.

The initial microsurgical procedure took eight hours. It consisted of anastomosis of the ulnar artery and two veins–the radial artery remained unidentified. Ulnar, median, and dorsal branch of the radial nerve neurorrhaphy was performed. Flexor and extensor tendons were sutured with a standard protocol. Metacarpal osteosynthesis using K-wires, nail matrix perforation and forearm fasciotomy were performed. Antibiotics, fluids, dextran 4000, prophylactic doses of LMWH, heparin compresses and hyperbaric therapy were administered.

After 7 days of hospitalization, the thumb, distal part of the second finger and thenar prominence showed signs of necrosis. After the final necrotic demarcation line appeared, reamputation of the necrotic parts was necessary. As a result of immense tissue shortage, the defect was covered with superficial inferior epigastric artery tubed flap. Three weeks later, the dermal-fat flap was detached.

Three months later, the patient returned to the Clinic due to an infected cutaneous fistula. Patient underwent a wound debridement, reamputation of the proximal phalanx of the second finger and removal of the necrotic tendon of the flexor indicis muscle. The patient was equipped with a negative-pressure wound-therapy dressing.

Eight months after primary surgery, the patient was readmitted because of unhealing fistula. After surgical debridement, he was referred to the outpatient clinic.

The patient possesses supportive function in his replanted hand, protective sensory function, full wrist, and IV-V digits motor function. He complains of third-finger contraction and nonspecific shoulder pain.

For the future, therapeutic plan consists of a second-toe-to-thumb transfer in order for the patient to regain opposition function in the hand.

Conclusion

Hand replantation is an immensely complex procedure that begins with a multi-hour operation, and is followed by months of hard work on the part of both the surgical team and patient. The probability of success after replantation depends on many factors, including the kind of wound it is, time after the injury until hospitalization, level of the amputation, and the number and quality of vessel unions. In this case, it seems that the union of only one artery was not sufficient, as what seemed to be previously efficient hand circulation, showed signs of ischemia. Patients must be warned that motor function in the replanted hand is never fully restored.

Results of crown open technique comparing to percutaneous bunnel for acute Achilles Tendon rupture repair

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Introduction

Different techniques for acute Achilles tendon rupture repair have been developed recent years. However, controversy still exists regarding the best surgical management options. Some of the latest studies have been reported with variable postoperative results and complications rates.

Aim of study

The purpose of this prospective randomized study was to compare and analyse the clinical outcomes and complications of a novel open "crown" type vs percutaneous Bunnell technique for acute Achilles tendon rupture.

Material and methods

100 patients between 2013 and 2015 were enrolled in prospective randomised study. Two surgical methods of repair were compared. Method I: a novel “crown” type open repair. Method II: Bunnell type percutaneous method. Three pairs of absorbable #1 suture for both repair techniques were used. Postoperative rehabilitation was the same for both groups. The short term results of first 6 months are reported. Short term functional results using Achilles Total Rupture Score (ATRS), pain Visual Analog Scale and complications were analysed.

Results

There were two study groups of 50 patients each. Mean patient age was 37.16 years, 89 being males, 11 females. 31 patients were physical workers, 5 professional athletes and 64 office workers.

Mean operation time for open surgery – 61 min, percutaneous – 34.80min. ($P < 0.00$). During first 6 postoperative months open surgery group had two marginal skin necrosis, two wound dehiscence, one re-rupture, one stiff ankle and six keloid scars. Percutaneous group had three sural nerve injuries, 2 wound dehiscence and one case of tendonitis. Cosmetics was better in percutaneous group 8.96/10 vs 7.8/10 ($P<0.00001$).

Average leg circumference: open group operated limb 394.94mm vs. non-operated 406.56mm, mean difference 11.62mm. Percutaneous: operated 391.04mm vs. non-operated 404.1mm, mean difference 13.06mm. Ankle range of motion, ATRS and pain were not statistically different.

Conclusion

Both methods resulted in high patient satisfaction and low complication rate. Novel open “crown” type technique shows to be as safe as minimally invasive percutaneous repair technique for infection and safer for sural nerve iatrogenic damage, however, it is associated with more frequent formation of keloid scar. Cosmetic appearance is superior among percutaneously treated patients. Other parameters did not differ significantly.

Causes of scaphoid nonunion: A retrospective analysis

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Introduction

Diagnosis of fractures of the scaphoid is still a challenge and a problem. Treatment of scaphoid bone fractures is important due to their high incidence, approximately 60% of carpal fractures. Early diagnosis and treatment permits scaphoid fracture repair in 90% of cases. A significant number of patients with scaphoid fracture are misdiagnosed and receive incorrect treatment and consequent complications. The most serious and common complication of nonoperative treatment is nonunion of the scaphoid. In one study, patients who after nonunion received proper surgical treatment were unable to resume work for an average of 4.5 months, and 14.3% had to change to work with a lighter load.

Aim of the study

The aim of this study is a retrospective analysis of the causes of nonunion of the scaphoid and an investigation of the significance of initial misdiagnosis.

Materials and Methods

The study is based on 42 patients with a nonunion of the scaphoid, 4 females and 38 males, originally cared for outside our clinic. The age range was 15-60 years with an average of 30 years. There were 24 fractures of the right hand and 18 of the left. Criteria were isolated injury of an upper extremity, at least one year passed after the accident, and a confirmed visit to the doctor or the emergency department. Exclusion criteria were open injury or multiple trauma of the hand. We analyzed the causes of nonunion by taking a medical history and by analyzing RTG and in some cases CT scans or MRI.

Results

The study found 21 patients whose fracture was not initially diagnosed, 9 without adequate immobilization, 1 with proper stability of the bone but without adequate repositioning, 2 with correct repositioning but lack of operation setting, 2 with improper surgical treatment, and 7 who did not report to the doctor immediately after the injury.

Conclusion

We find that not diagnosing scaphoid fracture in time is an important cause of nonunion of the scaphoid. However, misdiagnosis represents only one cause of nonunion, but the timing and method of treatment are also important. To reduce this factor, diagnostic tests of the scaphoid can be supplemented with X-ray and MRI. Proper repositioning and fixation are necessary to obtain bone union

Analysis of knee pain among mini trampoline fitness training participants

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Introduction:

Endurance group training using mini trampolines is quite a new type of fitness classes. Since its introduction, this kind of activity has gained an increased popularity and substantial number of followers all over the world. Only in Poland, there are hundreds of fitness clubs located both in bigger and smaller cities, offering mini trampoline workout. For this reason, many physicians and physiatrists are concerned whether this type of exercising does not lead to a higher risk of knee pain. However, no evidence proving negative impact of trampoline training on human health has been found.

Aim of study

To describe the rate and severity of knee pain among mini trampoline fitness training participants

Material and methods

Surveys were conducted in several fitness clubs and mini trampoline spots. Collected data were analyzed by certified medical statistician

Results

In the survey 96 women of age between 17-52 have taken part. The average period of training with mini trampolines among participants was 7 months and median training frequency was twice a week. 12,5% reported knee pain associated with exercising on mini trampolines.

Conclusion

Our data shows that endurance training with mini trampoline could lead to knee pain. Instructors involved in this type of fitness workout should focus on improvement of jumping technique. This can help to prevent participants from suffering knee pain that can lead to other, serious injuries. The obtained results suggest that further studies must be conducted on larger focus group in order to fully analyse and understand various aspects of trampoline training

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Case report of periorbital complications as a result of rhinosinusitis in pediatric patient

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Introduction

Children have anatomical predispositions to develop recurrent inflammations of sinuses' mucous membrane. Thinner bone walls of sinuses, congenital walls decrement or more sponge tissue in bone structure make acute ethmoidosinusitis commonly detected in pediatric practice. Diagnosis is based on interview and examination which shows rapidly escalating eyelid oedema, disturbed eye movement, exophthalmos and fever. Subperiosteal abscess is claimed to occur in about 9% of cases and it is a severe complication that requires urgent intervention. Most patients with periorbital complications of rhinosinusitis are treated with intravenous broad spectrum antibiotics. If there are indications they undergo sinus surgery. Majority of patients, promptly diagnosed and treated, recover completely.

Case Report

A 3 year-old boy admitted to the Emergency Department in Pediatric Hospital with eyelid edema, eyelid erythema and exophthalmos. He was previously diagnosed with mucopurulent conjunctivitis and was locally treated by ophthalmologist. He had previously nasal obstruction as a result of mucopurulent rheum and rhinitis. On the admission in the Otolaryngology Ward the head CT revealed acute ethmoidosinusitis and right subperiosteal abscess. Patient was qualified to surgical procedure: open ethmoidectomy and drainage of the abscess. Intravenous antibiotics (ceftriaxone, clindamycin), intravenous hydratation, xylometazoline, tobramycin and dexamethasone with polymyxin b and neomycin to the right eye were administrated. The patient responded well to the therapy, his condition improved and the recovery was significant. The ophthalmologic consultations revealed no revelators of high intracranial pressure, no swelling of the optic disc, and no pathological changes in retina. Slightly edema and exophthalmos were still present. The patient was discharged home in good condition with oral antibiotics. The patient was followed up by GP and in Outpatient Otolaryngology Clinic.

Conclusion

The patient developed rare periorbital complications of rhinosinusitis. Prompt treatment is essential for the regression of the dangerous consequences of the inflammatory process. Even after the delay in diagnosis the outcome might be spectacular. In this case, the eye ball and the normal visual acuity could be preserved because of the urgent intervention in the hospital and the proper treatment.

The new European Salivary Gland Society scale – do we really need it? Assessment of its usefulness in daily surgery practice

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Introduction

Nowadays, head and neck pathologies constitute to be a serious medical problem. Although salivary glands tumors add up to 2-4% of all the head and neck tumors they are still a major issue. They occur most often between the age of 45-60 and are characterized by clinical and histological diversity.

Methods

Retrospective analysis of the medical data of cases of benign large salivary glands tumors treated in the Department of Otolaryngology and Oncological Laryngology of Medical University of Lodz between 2012-2017 was done.

Base of the material were medical files, surgery protocols, cytological and histopathological results and current clinical observations in outpatient clinic. To assess the extensity and localization of the tumor in the area of parotid gland, new European Salivary Gland Society classification was adopted.

Results

During the analyzed period, 207 patients were treated: 92 women and 115 men; 187 patients with parotid gland tumor and 20 with submandibular gland tumor. Warthin's tumor (47,5% of cases) and pleomorphic adenoma (38,5%) were the most frequently diagnosed. The most common method of surgical treatment was partial superficial parotidectomy (43,2%) and total superficial parotidectomy (27,3%). According to new ESGS classification considering level on which the parotid gland tumor was localized, 62,1% of type II and 25,3% of type I, II paroitidectomies were performed.

Conclusion

Frequency of tumors of the parotid gland, their histological types and methods of surgical treatment in our data support other studies. Assessing the new ESGS classification it was alleged, that it is not always useful in retrospective evaluation of surgery protocols because of its insufficient precision in placing extensity of the tumor depending of parotid gland structure and its surrounding. However, it may be useful in current surgery protocols considering the exact localization of the tumor in the gland tissue.

Evaluation of clinical data in patients with Inverted Papilloma

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Introduction

Inverted Papilloma (IP) is a locally aggressive benign tumour of sinonasal region, ranging from 1% to 5% of the tumors that reside in this area. Most tumours are confined to the lateral nasal wall or maxillary sinus and male preponderance. It has a known association with in situ and invasive carcinomas with a <10% rate of malignant transformation, with most common being squamous cell carcinoma. It has been proposed that human papillomavirus (HPV) is the casual agent in the pathogenesis of IP and plays a key role in the progression from benign IP to malignancy.

Aim of study

The aim of study was to analyse the clinical data of patients with inverted papilloma surgically treated in the Department of Otorhinolaryngology and Oncological Laryngology at Medical University of Lodz.

Material and methods

In this retrospective study, 41 patients with diagnosis of Inverted Papilloma were included to the study. All of the patients were surgically treated between 2011- 2017 at the Department of Otorhinolaryngology and Oncological Laryngology, Medical University of Lodz. The group consisted of 27 (64%) males and 14 (36%) females. The group age varied from 31 to 79 years old, with average of 59 years old. All medical histories have been checked for data such as medical diagnosis (first or recurrence), localization of the IP, imaging studies, type of treatment and additional. Clinical data has been gathered and analyzed.

Results

Analysis showed that in 28 patients (68%) suspected of neoplastic lesion were diagnosed on the basis of a clinical examination and imaging studies prior qualification to surgical treatment. In the remaining 13 cases (32%), patients presented clinical and radiological symptoms of chronic paranasal sinusitis. Inverse Papilloma were diagnosed in histopathological examination of postoperative material. Furthermore IP recurrence occurred in 6 patients (15%).

Conclusion

Inverted Papilloma is rare nasal and paranasal tumor without any specific symptoms. The diversity of clinical presentation is evident: from the features of chronic sinusitis with polyps to the typical tumor image of that area. Patients with unilateral chronic sinusitis should be considered with Inverted Papilloma, especially in cases not responding to properly conducted conservative treatment

Diagnostic difficulties in laryngeal cancer - case report

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Introduction

Laryngeal cancer represent 40% of head and neck cancers and 2% of all malignant neoplasms in Poland. The vast majority - 95-98% constitutes squamous cancer.

These tumors are the most frequent in males, at the age of 45-75, substantial risk factors are tobacco smoking and alcohol. Distant metastases occurs only in 7% of cases and commonly are not stated at the moment of the diagnosis. If they are found, mainly appear in lungs (83,3%) - where metastases in bones may co-occur, and in liver (16,7%).

Case Report

The patient JN was admitted to the Department of Otolaryngology and Oncological Laryngology of Medical University of Lodz in order to diagnose the reason of hoarseness and voice changes. The symptoms lasted for a month. The laryngological examination revealed a tumor in the area of the right piriform sinus including aryepiglottic fold and a slightly reduced mobility of the right fold. For this reason direct laryngoscopy with biopsy was performed. The histopathological examination showed moderate-grade dysplasia. There were also no focal changes in the X-ray examination.

It was decided to repeat the direct laryngoscopy during the next hospitalization. The histopathological examination revealed no evidence of tumor growth again. During the second hospitalization imaging techniques were also performed: CT of the neck, CT of the chest and abdominal ultrasound. The pathological mass in the larynx and fluid in the left pleural space were found in the scans. Moreover, there was a suspicion of metastasis to the lymph nodes of the neck, to mediastinum, bones and lungs. The patient was consulted pumonologically. Thoracocentesis and diagnostic bronchoscopy with section for histopathological examination were performed. In pleural fluid and biopsy specimen atypical cells were not found. Re-performed direct laryngoscopy and tumor biopsy has shown features of high-grade dysplasia and suspicion of atypical hyperplasia. At the time of the next hospitalization, further diagnostic steps will be taken. It is planned to split the larynx in order to collect a diagnostic material.

Conclusion

Due to occurrence of tumors of different origin, it is inappropriate to invariably suspect manifestation of squamous cancer, what can result in diagnostic difficulties. Interdisciplinary cooperation between pulmonologist and oncologist is necessary, in order to provide proper diagnosis and effective treatment.

Laryngeal squamous cell carcinoma (SCC) in clinical stage I with early metastases to lymph nodes – case report

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Introduction

Squamous cell carcinoma (SCC) is the most common type amoung malignant tumors of the larynx. Approximately 2400 new patients are diagnosed with laryngeal SCC each year in Poland. More cases of laryngeal cancer in Poland are recognized in stage T3 and T4 than T1 and T2. Probability of metastases to lymph nodes and nodal recurrences in T1 carcinomas is <10%. Five years survival rate for T1 carcinoma is >90%.

Case Report

A 53-year-old patient was reffered to the Department of Laryngology of Medical University of Lodz with a diagnosis of right vocal fold cancer. Based on a clinical examination the tumor was assessed T1N0M0. The patient underwent partial laryngectomy. 4 weeks later the patient was reoperated on account of positive surgical margins.

After 2 months the patient reported to the Department with painful tumor on the right side of neck. Ultrasonography and CT revealed irregular, heterogenous tumor under the sternocleidomastoid muscle with numerous surrounding reactive lymph nodes. Exploratory neck surgery with excision of the abscess was performed. Histopathology revealed metastases of squamous cell carcinoma to lymph nodes.

Despite the chemotherapy tumor was enlarged and metastases spreaded on cervical part of vertebral column and lungs. Tracheostomy was performed because of increasing dyspnoea. Oncological treatment was continued without any improvement and the patient died a few weeks later, 8 months after the diagnosis of laryngeal cancer T1N0M0.

Conclusion

Many studies have been done on laryngeal SCC biology. Despite this, the course of the cancer may be unusual and cause diagnostic and therapeutic difficulties. On the other hand, patients with head and neck cancers are at high risk for second primary tumors. For this reason, the differentiation diagnosis of the metastatic tumor should be sought for a possibility of the second primary tumor

Multiple primary malignancies within head and neck region - case report

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Introduction

Head and neck cancers (HNSCC) make about 5% of all malignant tumours registerd in Poland and second primary malignancies (SPM) are most common in this group of oncological patients . HNSCC are most frequent among people after 45 years of age, and five times more common in men than women. The most significant carcinogenes are tobacco smoke and ethanol. Among patients with HNSCC the risk of SPM is 9-15%, of third primary tumour is 0,5% and of fourth primary tumour is 0,3%. The theories that explain formation of multiple primary malignances (MPM) are field cancerogenesis theory given by Slaughter, neoplastic cell migration theory proposed by Sidranski and individual susceptibility to cancer theory. Over 40 procent of second primary tumours are located within head and neck region.

Case Report

The report describes the patient with three primary tumours in the head and neck region. The patient is a male born in 1943, who reports being a compulsive smoker and an alcoholic for many years. In 2006 he was diagnosed with laryngeal cancer located in the glottis. Afterwards, in 2011 he was diagnosed with the right palatine tonsil cancer with metasteses to adjacent cervical lymph nodes. Subsequently in 2014 the third primary tumour was found in the left epiglottic vallecule also with metases to surrounding cervical lymph nodes. All three cancers were surgically treated and in 2014 patient underwent radiotherapy course.

Conclusion

Each patient with diagnosis of HNSCC must be thorougly examinated clinically and radiologically not only to determine the stage of disease, but also for incidence of the second synchronous cancer. Even after treatment patients must be regularly monitored in order to detect possible local or nodal cancer recurrence at an early stage, likewise for metachronic primary malignances. Follow-up must be conducted for the rest of patients life, because the risk of second primary tumour is 2-5% per year. It is also very important to evade exposure to carcinogens

Diagnostic utility of flow cytometric immunophenotyping of myeloid-derived suppressor cells (MDSCs) in chronic rhinosinusitis

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Introduction

Chronic rhinosinusitis (CRS) is an inflammatory disorder of nasal mucosa and paranasal sinuses. CRS comprises a heterogeneous disease that affects 6-27 % of the general population, and impacts on the quality of patients'life. Due to its incidence, CRS is reported to exert a tremendous financial burden on the healthcare system. CRS has been categorized into two types: CRS with nasal polyps (CRSwNPs) and without nasal polyps (CRSsNP), and it is characterized by sinonasal symptoms of greater than 12 weeks duration e.g: nasal obstruction or a runny nose, disturbed smelling/ tasting, necessity of blowing the nose, facial pains and posterior rhinorrhea, with evidence of disease by endoscopy or radiographic imaging. The etiopathogenesis of CRS is still unclear, and more studies are needed. The chronic inflammation in CRS indicates the participation of immune system cells. Myeloid- derived suppressor cells (MDSCs) play a crucial role in the cellular network controlling immune responses in many pathologic conditions, and are responsible for inhibiting immune reaction what protectsagainst an exaggerated damage of the tissue. In most published papers two major subsets of MDSCs were described: granulocytic MDSCs (G-MDSCs) with morphology similar to granulocytes, and monocytic MDSCs (Mo-MDSCs) with morphology similar to monocytes.

Aim of study

The aim of this study was to assess a clinical, morphological phenotype of CRS along with systemic and local immune system response.

Materials and methods

Forty patients with an age between 21 and 71 years were included. All of them were from the Department of Otolaryngology- Head and Neck Surgery of Poznan University of Medical Sciences.

Results

Twenty-eight patients with CRS underwent a functional endoscopic sinus surgery (FESS). Polyps were noted in twenty-three (82.1%) patients. Twelve patients who suffered from nasal septum deviation and chronic hypertrophic rhinitis, qualified to septoplasty or conchoplasty, were used as controls. Polyps or fragments of the nasal mucosa and peripheral blood samples were collected from each subject. Myeloid-derived suppressor cells were identified using fluorescently labeled mAbs directed against their respective CD surface markers: CD66b, CD14, HLA-DR, CD33, CD11b, CD45.

Conclusion

Our results demonstrate a higher prevalence of MDSCs among patients with CRSwNPs in comparison to control group. Gr-MDSCs subset of MDSCs was found to accumulate notably greater than Mo-MDSCs subset in investigated materials. The frequencies of MDSCs varied with a significant difference between peripheral blood and tissue samples. This suggests that MDSCs are engaged in inflammation responses rather systemically than locally, in polyps tissue. CRSwNP is a complex inflammatory condition, and many factors likely contribute to its etiopathogenesis. Continuation of this research will enable the development of novel therapeutic strategies to improve treatment for patients who suffer from this disease.

Sleep disorders among patients hospitalized in the Otolaryngological ward and its impact on the quality of life

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Introduction

Sleep disorders are increasing health problem in today's world and can have a significant impact on quality of life and of working. They commonly manifest as excessive daytime sleepiness, difficulty initiating or maintaining sleep, or abnormal movements, behaviors, and sensations occurring during sleep. Unfortunately, the majority of sleep disorders remain undiagnosed to a large extent. It is however associated with more frequent hospitalization of people with sleep disorders.

Aim of study

The aim of this study was to evaluate sleep disorders among patients hospitalized in the ENT ward and to determine the relationship between the degree of insomnia and evaluation of the quality of life.

Materials and methods

The study was conducted on a group of 70 patients hospitalized in the Department of Otolaryngology, Head and Neck Surgery, Wroclaw Medical University in January and Fabruary 2015.

In the study standardized test methods of determined reliability and internal accuracy were used: Athens Insomnia Scale, Epworth Sleepiness Scale, Acceptance of Illness Scale, Satisfaction With Life Scale. In addition, each patient received a sleep diary to fill up and short author's questionnaire containing demographics evidence.

Results

65% of the patients were male. The median age was 43 years (19 to 70), BMI 26,8kg / m2. 1/3 of patients had a higher education, 67% were professionally active. The most common cause of admission waschronic sinusitis.

Only 33% of patients also declared permanently drugs taking due to chronic diseases. 98% of respondents had a valid result Epworth Sleepiness Scale averaging 6 to 24 points. 40% had a limit value in Athens Insomnia Scale, 13% had a possible insomnia. Analysis of sleep diaries have shown, that people who declared a long time of falling asleep (1 hour vs 25 minutes.) are more likely to suffer from insomnia. The subjective assessment of sleep was based on a scale of 1 to 5 (where average was 2,5). The acceptance of disease was high, averaging 38/40 points.

Conclusion

Sleep disorders occurring for at least a month can lead to a lower quality of life assessment inpatients admitted to the ENT ward. Patients who score lowly their quality of sleep, were mostly complaining about frequent awakening.

Intracranial complications of sinusitis between 1964-2016 in patients of Poznań University Department of Otolaryngology, Head and Neck Surgery, management and their outcomes.

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Introduction

In spite of continuously improving diagnostic and treatment methods, intracranial complications of paranasal sinusitis are still challenging conditions with a significant morbidity and mortality. A prompt diagnosis and management are essential, as there is a potential risk of devastating long-term effects on the orbit and skull base.

Aim of study

Our aim was to evaluate the diagnostics, treatment, and outcome of sinusitis-related intracranial complications at Poznań University Department of Otolaryngology between 1964 and 2016, divided into three time periods: 1964-1984, 1985-1999, 2000-2016.

Material and methods

We retrospectively collected data on all patients diagnosed and treated with a sinusitis-related intracranial complication, during a 52-year period between 1964 and 2016. The epidemiology of this condition, most common complaints, previous history of sinusitis and other comorbidities, clinical examination findings, methods of treatment and long-term outcomes in patients were analyzed. A comparative analysis of patients treated in aforementioned time periods (1964-1984, 1985-1999, 2000-2016) was performed.

Results

Between 1964 and 2016 fifty-one patients were diagnosed with a sinusitis-related intracranial complication. In the aforementioned time periods 1964-1984, 1985-1999, 2000-2016 there were 18, 7 and 26 patients diagnosed, respectively. The most commonly diagnosed complications were frontal lobe abscess (25), epidural abscess (16) and meningitis (11), all of which predominantly coexisted. In the first period, between 1964 and 1984 three patients died. In the other periods any mortalities were observed. The high incidence rates were observed especially among young men (M/F = 3:1)

Conclusions

Analysis of administrative data gives the insight into patterns of sinusitis-related intracranial complications. Within the last 50 years there was a significant decrease in mortality of sinusitis-related intracranial complications. A review of the currently available literature shows that immediate multidisciplinary cooperation and aggressive treatment may lead to favorable outcomes in affected patients

A rare case of lymphangioma

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Introduction

Lymphangiomas are benign hamartomatous malformations which can arise either from congenitally sequestered lymphatic channels or due to acquired obstruction caused by fibrosis of lymph channels. They are common in the pediatric age group in the soft tissue of neckand the axilla and rarely, in adults.

Case Report

A 35-year-old male was admitted to our hospital with tumor on right neck area. Past medical history and CT scans arose the suspicion of giant lymphangioma, extending from the mandible to the clavicle. The operator performed radical excision. Structures were dissolved showing among others sternocleidomastoid muscle, nerves X, XI, XII, common carotid artery and internal jugular vein. After removal of the tumor, the operator put in stiches. Post-surgical histopathological examination of excised specimen showed lymphangioma.

Conclusions

The prognosis for lymphangioma is generally excellent. This condition is associated with minor bleeding and lymph fluid leakage. Complications after surgical removal of lymphangioma include damage to the structures in the neck and infection. Radiological findings can be challenging. However combined clinical history, radiological findings and continuous follow-up can help make proper diagnosis and provide prompt and accurate treatment.

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Is there any correlation between air pollution and Central Nervous System Tumors incidence among children?

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Introduction

Tumors of Central Nervous System represent over 15% of cancers among people under the age of 19.

Aim of study

The aim of the study was to analyze epidemiological incidence of CNS tumors among children in Silesia in the years 2000-2016 with particular emphasis on geographical distribution and the impact of polluted air.

Materials and methods

Analysis of the incidence of CNS tumors among children aged 0.17-18.75 years treated in the Department of Oncology and Haematology GCZD in the years 2000-2016, was carried out. 182 children (85 girls, 97 boys) were analyzed. According to the WHO classification of 2016, patients were classified. Based on GUS data, Standardized Incidence Ratios (SIR) were calculated. Data were analyzed in 6 designed districts. Average Annual Air Pollution Parameters (PM10, PM2.5, C6H6, BaP, NO2) were calculated on the basis of data provided by GIOŚ.

Results

Standardized for age (according to the European Population) incidence rates for tumors of CNS (n/100 000) in the period 2000-2016 were, respectively: 1.29; 1.05; 1.19; 1.44; 0.86; 1.18 in designed by us districts. The highest SIR was recorded in the district which includes Rybnik-Jastrzebie agglomeration(1.44). The lowest SIR was in the North zone(0.86). Mean Standarized Incidence Rate for Silesia was 1,16.The highest average annual values PM10(51.1ug/m3), PM2.5(36.9ug/m3), BaP(10.9ng/m3), C6H6(3.3ug/m3) were recorded in Rybnik-Jastrzebie agglomeration. The highest mean annual NO2 value (35.4ug/m3) was in the Katowice area. The lowest average annual values PM10(38.1ug/m3), PM2.5(26.8ug/m3), BaP(5.4ug/m3), C6H6(1.4ug/m3) were recorded in the North Zone of Silesia. The lowest annual NO2 value(20ug/m3) was in the South Zone of Silesia. The largest number of cases was in the group of the age 0-4 years, the smallest in the group 15-19 years. The largest number of cases was reported for astrocytoma (68) and the smallest for tumor of the pineal (4) and other cancers (4).

Conclusion

There was noted a difference between the distribution of incidence rates and the place of residence. In areas with the highest average annual PM10, PM2.5, BaP, C6H6 were reported the highest incidence ratios for Central Nervous System Tumors.

Voiding habits and abnormalities. Questionnaire among parents of 7-10-year-old primary school children.

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Introduction

According to many published epidemiological studies urinary incontinence is an important health issue in the population of elementary school children. Intermittent urinary incontinence should be treated as a pathology in patients who are older than 5 years. This type of micturition disorder can be divided into day-time incontinence and nocturnal-incontinence (enuresis). There is very little data available about the incidence of urinary incontinence in this age group in Poland.

Aim of study

To asses the incidence of micturition disorders in the population of polish children aged 7 to 10, to analyze accompanying symptoms and social background of these problems.

Materials and methods

Parents of 954 children (491 girls and 463 boys) were surveyed during parent-teacher conferences held in January 2017 in 11 schools in southern Poland. The questionnaire was based on the International Children's Continence Society guidelines. The population was divided into subgroups based on age, sex, place of residence (city/village), education level of parents, presence of accompanying symptoms and the type of micturition disorder, the subgroups were compared using statistical methods.

Results

One or more symptoms of urinary bladder malfunction was reported in 18% of cases (17.5% of girls and 18.8% of boys). Isolated enuresis occurred in 5,2% (4% of girls and 6,5% of boys). Isolated day-time incontinence was reported in 9,4% of girls and 7,3% of boys. In 16,7% of children the problem appeared after a period of dryness and only 4,6% of children never achieved urinary continence. In86,7% of children micturition disorders were accompanied by episodes of constipation.

Conclusion

Bladder control problems are common in the study population. The problem should not be underestimated because untreated it may lead not only to physical but also serious psychological disorders.

Tablet and smartphone – new toys of the 21st century. The influence of technology on the development and behaviour of children under the age of 4.

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Introduction

In recent years, the popularity of electronic devices, such as tablets and smartphones, has been increasing among children under the age of four. Although that they are at an early stage of development, quick learning of modern technology does not make them much trouble. There is little published in the literature about the impact of electronic devices on children's health and development.

Aim of study

The aim of the study was to assess parents' knowledge about the impact of using electronic devices (tablets and smartphones) on the child development and to assess the frequency and circumstances in which children use these devices.

Material and methods

A questionnaire survey was conducted among randomly selected parents of 174 children aged 1 to 4 years. Surveys were anonymous, consisted of 23 questions, both single and multiple choice. The study was conducted in the Department of Paediatric Propedeutics and Bone Metabolic Diseases Medical University of Lodz and also 4 nurseries, 1 kindergarten, 2 outpatient clinics.

Results

In the study group, as many as 88.4% of the children surveyed used a tablet or smartphone Moreover, the tendency is to make these devices available to younger children. 43.41% of parents believe that this type of electronic device has a positive impact on the development and health of children. Generally, parents share tablets or smartphones to watch fairy tales (73.6%), listen to music (41.9%) and play games (11.6%). They motivate their behavior by calming down their children (33.3%), supporting intellectual development (28.7%), child being asked and unable to refuse (27.1%). In 35.7% of cases, parents have seen an immediate calming effect upon receiving a tablet or smartphone. It has been observed that the more time a child spends with a tablet or smartphone, the greater the nervousness ($p=0.00007$), the more frequent crying ($p=0.0002$), and the more often the child uses the device by himself, the more nervous becomes ($p = 0.008$). Increasing the time spending in front of your tablet or smartphone not only increases the appetite ($p=0.026$), but also drowsiness and fatigue ($p=0.017$).

Conclusion

Percentage of children aged 1 - 4 years using electronic devices is very high (88.4%) and there is a tendency to reduce the age of patients in this group. As many as 43.41% of parents think that tablets and smartphones have a positive impact on children's development, not guided by scientific evidence. The study indicates that children use electronic devices often without restriction, in order to calm down, and as a consequence, it causes increased nervousness, tingling, fatigue and increased appetite, and these symptoms aggravate with increasing frequency of use.

Many faces of vitamin D deficiency – a big problem for little children

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Introduction

In terms of skeletal development, vitamin D is one of the most important factor and its deficiency can lead to long-lasting consequences. Severe and clinically evident vitamin D deficiency can result in rickets. All over the world, study results reveal that vitamin D insufficiency could appear at any age and should be regarded as a serious social and health problem. In many countries (including Poland) supplementation has been introduced as a prevention of the deficiency, even though many patients are still admitted to hospital with this problem.

Aim of study

The aim of our research was to find connections between vitamin D levels and symptoms in group consisting of 0-3 years-olds patients. The second objective of our research was to determine if the number and kind of symptoms from skeletal system is linked to age.

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 2010 and February 2017. We analysed medical history of 185 patients less than one year old and 95 1-3 year-olds. They were admitted to hospital due to diverse symptoms often connected with skeleton. Biochemical parameters such as vitamin D concentration and alkaline phosphatase activity were also analysed.

Results

No relationship was found between the number of symptoms and the vitamin D level. Frequency of deficiencies was comparable in group presenting none, one and more symptoms. However, softening of the skull in the group under one year old ($p=0,018$) and lower limbs pain in 1-3 year-olds ($p=0,024$) appears statistically significantly more often among patients with the deficiency. It was proved that 42% of patients during the first year of life doesn't present any symptoms. There was no correlation between alkaline phosphatise activity and vitamin D concentration. A strong, statistically significant difference between middle vitamin D concentration in group 0-1 years-old (34,17 ng/ml)and 1-3 year-olds (31,9 ng/ml) was noted ($p=0,00069$).

Conclusion

Presented signs of vitamin D deficiency can be very variable, however during the first year of life we should pay attention to the softening of the cranial bones and in the second and the third year of life to lower limbs pain. Statistically significant higher average vitamin D concentration among patients less than one year old confirms effectiveness of prevention and at the same time indicates that further supplementation should be concerned.

Why do women decide to finish breastfeeding?

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Introduction

Breastfeeding is very important not only for development of children, but also for health of the mothers. Additionally this way of nutrition helps in creating close relationship, it is also economical and comfortable. Despite this many women decide resignation from their milk or even do not try breastfeeding their infants.

Aim of study

The basic aim of the study was to find main reasons, what are the causes that women do not want to practice breastfeeding.

Materials and methods

This was a prospective study conducted by using questionnaires. I included mothers of babies ageing up to one year. The questionnaire is comprised of three parts. The first includes general information and the second part consists of questions on subject to older children, while the third part has 4 close-ended questions relating to current baby. In poll women were asked about the main and additional reasons for ceasing breastfeeding, that whether they consulted doctors for making this decision, where did they find information regarding nutrition and if they have older children why did they decide in their cases by discontinuing this way of feeding.

Results

These are preliminary results. The group included mothers aged 19-41 with different level of education and more than half of them were employed. Half of them indicated that the most important reason is insufficient milk supply and this answer is around one fourth of the total additional causes. Other most frequent reply in both categories are infants, who do not want to suck. Third the most relevant cause is disease of child, here women listed mainly jaundice. In this question also some mothers responded difficulties in the process of breastfeeding, maceration of nipples and disease of mothers (here was listed infections). Additional reasons were often indicated like lack of support of the partner/family, maceration of nipples and mastitis. Almost half of the group did not consult the doctor in making this decision. Around two third of the group stated that they found out information about breastfeeding from midwifes, more than half got information from others parents and less than half got information from the Internet. In cases where women had older children, majority reported that they stopped breastfeeding because of the age of their children (mostly 2 years), lack of milk and going back to their work.

Conclusion

In case of the older children we can see success of the breastfeeding promotion, because period of nutrition in this way is good, but still the medical staff, specially authority of doctors, should teach young mothers what is not contraindication, that they can continue breastfeeding even during infection or jaundice. Also the medical staff should advise the family members of the mother and explain to them how important it is both for the infants and the mothers and motivate mothers and teach them how to increase their milk production.

Foreign body in the gastrointestinal tract in children - analysis of the proceedings

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Introduction

In children, especially in first few years of life, often comes to accidental swallowing of a foreign body. Most cases are asymptomatic and the diagnosis tends to be suggested by the child or guardian.

Aim of study

The purpose of this study is to overview the diagnostic and therapeutic treatment of foreign body ingestion by children, depending on the symptoms, locations and considering the radiopacity of the foreign body in one pediatric surgery center.

Materials and methods

The study group included 420 patients at the age 1-17 treated in SPSK1 in Zabrze over the period 2009-2016.

Results

55 patients (13%) were admitted to hospital, of which 27 (49%) were treated invasively with the use of endoscopy. None of them required a laparotomy.

In 365 patients (87%) outpatient observation was decided upon. In total, 393 (94%) of patients did not require surgical treatment.

Conclusion

Most of the foreign bodies present in the gastrointestinal tract do not require surgery and are excreted naturally. Surgical intervention depends on the afflictions or location of the foreign body in the alimentary tract. Without clinical symptoms, patient should be observed on an outpatient basis.

Is being single a challenge - the story of renal agenesis/hypoplasia in children.

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Introduction

Isolated agenesis or kidney hypoplasia are usually asymptomatic. Thus, the diagnosis is frequently put accidentally or during investigation of other anomalies.

Aim of study

Analysis of data concerning the occurrence of agenesis or kidney hypoplasia in children, in terms of clinical picture, age at diagnosis and coexistence of other abnormalities in the urinary tract.

Materials and methods

The data from medical records of 27 patients (11 girls, 16 boys), hospitalized at the Department of Pediatric Nephrology in Wrocław from 5.2014. to 10.2015., were analyzed.

Results

The study group comprised 19 patients with renal agenesis and 8 with hypoplasia. Mean age at diagnosis was 2 years 10 months. The diagnosis was put in: newborns (33%), children < 1 year (22%), patients between 1 and 5 years (15%) and children > 5 years (30%). The indications for the diagnosis among newborns and infants were: prenatal or neonatal ultrasound screening (60%), urinary tract infections (20%) and US performed due to other anomalies. The diagnostic process among children older than 1 year was triggered by abdominal pain (33%), urinary tract infections (33%) and other diseases (25%). 19% of children had other anomalies in the urinary tract.

Conclusion

In over 50% of cases the diagnosis was put before the 1st year of life. Neonates and infants were in majority asymptomatic and ultrasound screening revealed the anomaly. In children older than 1 year, symptomatic course was predominant, with abdominal pain and urinary tract infections as main indications for further ultrasound investigation.

The comparison of types of head injuries in children and adults.

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Introduction

Head trauma is one of the most common injuries in children who are not protected as well as adults from head trauma because of higher elasticity of their skull bones and not fully developed skull sutures, what may implicate different injuries of head during traffic accident .Skeletal system changes with increasing age and this changes determine the type of head trauma.

Aim of study

The aim of the study was to compare the frequency of precise type of head injury due to traffic accidents in adults and children and establish its possible impact on victim's life.

Materials and methods

We gathered data from the Forensinc Medicine Department of Jagiellonian Univeristy Medical College in Cracow, Poland. The study includes patients aged from 0 to 88 years old. 72 autopsy protocols were analyzed, which consisted of injury derived deaths and were traffic accidents. We established precise type of the injury and compared data concerning children and adults.

Results

All of the cases were connected with traffic accidents. There are some similarities and differences between demages in the head area in the groups of children and adult patients, due to the anatomical differences between them. The frequency of subarachnoid hematoma is: in children 40% and in adults 41%. The similarity of the injuries appeared also in cases of blood in ventricles: children 42% and adults 41%. The biggest difference of results can be observed in frequency of brain oedema- 65% of children and adults: 3%. Brain size and structure was changed in children group in 37% and in adults group in 3%. Destruction of dura mater appeared in 34% of children cases and in 22% of adults cases.

Conclusion

The study shows that percentage of damages connected with bleeding into the brain, which display symptoms in a short time are on similar level in children and in adults .On the contrary, injuries like brain edema or changes in brain size and shape (which symptoms can be usually observed with delay) are more common in children cases. This brings to the conclusion that more careful and time-extended observation of infant victims of traffic accident is essential even if at the beginning of the treatment they do not show any serious symptoms primary of head trauma. Keywords Head injury, Traffic accidents, Children.

Influence of gestational, perinatal and neonatal loads on lenticulostriate vasculopathy (LSV) prevalence.

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Introduction

Lenticulostriate vasculopathy (LSV) is a visible alteration of brain, which appears as echogenic spots in arteries of thalamus and basal ganglia, commonly detected on routine brain ultrasonography (BUSG) in neonates. LSV is often linked to various abnormalities, but clinical meaning still remains unclear.

Aim of study

The aim of this study was to determine if there is any association between LSV prevalence and maternal, perinatal, neonatal and BUSG characteristics.

Methods and materials

Retrospective study included 48 neonates with LSV hospitalised in Neonatal Unit between 2014 and 2016. We analyzed growth parameters, prevalence of perinatal and maternal risk factors, congenital infections and LSV location, BUSG defects, as well as pulsatility index (PI) and resistance index (RI) in anterior cerebral artery (ACA).

Results

Research group contained 37,5% neonates from first pregnancy and 43,8% from second. LSV was observed majorly in males (62,5%), bilaterally (64,6%) and mostly (81,3%) isolated in thalamus. In our study, 85,2% patients presented at least one other brain abnormality, where the most frequent were choroid plexus cysts (40,8%). Moreover, we observed maternal medication intake during pregnancy (20,8%) and urinary tract infection (UTI) (16,7%). The alterations were observed in values of ACA PI and RI in relation to Apgar score. Research revealed correlation between Apgar score and head circumference and ACA PI and RI values.

Conclusion

The most frequent LSV location was thalamus. Second pregnancy predisposes to LSV prevalance. LSV was associated with maternal medication intake and UTI during pregnancy. Our study can confirm the relation between LSV and artery calcification already known in literature.

Influence of growth hormone treatment on bone quality and risk for osteoporosis in patients with Turner syndrome.

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Introduction

Turner syndrome (TS) is a common chromosomal disorder in females that is associated with characteristic phenotype, including impaired skeletal growth and deficiency of puberty symptoms. While childhood growth hormone treatment (GHT) is common in TS, its impact on bone health has been still poorly understood.

Aim of study

The purpose of this study was to evaluate efficacy of GHT and its influence on hormonal balance, bone quality and risk for osteoporosis in TS patients.

Materials and methods

In this retrospective research 112 TS patients aged 4-20 y/o were analysed in terms of karyotype, calcium and phosphate metabolism, bone mineral density (BMD), height standard deviation score (hSDS), BMI percentile, body composition and serum levels of insulin-like growth factor 1 (IGF-1), alkaline phosphatase (ALP), thyroid and sex hormones at time points before and after GHT.

Results

Statistically significant alterations ($p<0,05$) were observed in hSDS, total body BMD, LH and E2 serum levels after termination of GHT. In the subgroup of patients treated also with hormone replacement therapy (HRT) greater bone age delay (BAD) ($p=0,005$) and lower L1-L4 Z-score ($p=0,012$) were revealed. We found correlations ($p<0,05$) between patients' age of initiation of GHT and BAD ($r=0,54$), hSDS ($r=-0,22$) as well as total body Z-score ($r=-0,44$).

Conclusion

GHT improves skeletal growth and bone quality and, as a result, lowers risk of osteoporosis. Moreover, it does not interfere hormonal balance in TS patients. Study showed that HRT worsens efficacy of GHT and bone condition. GHT for TS patients should be considered at earliest possible age to allow them achieve the most adequate bone age to their chronological age.

Selective IgA deficiency in patients of Children's Haematology and Oncology Clinic in Olsztyn.

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Introduction

Selective IgA deficiency is the most common primary immunodeficiency, caused by antibody production disorder. Clinical presentation is very variable, often manifested by increased susceptibility to infections and coexistence of allergic and autoimmunological diseases. Diagnostic criteria are: age above 4 years and serum IgA level under 7 mg/dl with normal IgG and IgM levels.There is no specific treatment for Selective IgA deficiency.

Aim of study

The aim of study was to analyse clinical data of patients with selective IgA deficiency, diagnosed in the Clinic of Haematology and Oncology of the Regional Specialized Children's Hospital in Olsztyn.

Material and methods

Analysis included 44 children. Clinical informations were gained from archival documents and 19 questionnaires filled by parents. Questionnaires consisted questions about frequency of infections, allergies, parasitic infestations, other diseases, family history, perinatal history, vaccinations, physical activity, progress at school.

Results

Retrospective analysis included 44 children: 27 males (61,37%) and 17 females (38,63%).
Among the children qualified to the analysys 43 of them had decreased IgA serum levels in relation to the norms for age. 14 children (31,81%) were less than 4 years old. In group of children older than 4 years old, 9 patients (20,45%) had IgA serum levels less than 7 mg/dl (0,07g/l) and fulfilled the criteria of Selective IgA deficiency. The main cause of starting the diagnostics of Selective IgA deficiency were frequent infections 59,1%, lymphadenopathy 18,2% and WBC count abnormalities 18,2%. Out of all patients, 42 (95,5%) underwent various types of recurrent infections. The most common infections were pharyngitis 43,2% and gastroenteritis 27,3%. Parasitic infestations occurred in 7 children (15,9%). Allergy was observed in 17 patients (38,6%). Most frequent was allergy to foods 35,3% and dust mites 29,4%. In 24 patients (54,5%) occurred coexistence diseases atopic dermatitis 15,9%, asthma 11,4%, allergic conjunctivitis 13,6%, coeliac disease 9,1%. Twenty five patients (56,8%) had positive family history: asthma 18,2%, malignant neoplasm 18,2 %, hypothyroidism 13,6%, rheumatoid arthritis 11,6%, Addison-Biermer anemia 9,1%, allergy 9,1%.
Analysis of 19 questionnaires: mean frequency of infections per year 7,2 (SD3,3), normal psychomotor development 100%, obligatory vaccination 100%, additional vaccination 68,42% , breastfeeding 100%.

Conclusions

The most common reasons for recommending immunoglobulin concentrations were too frequent infections. In the study group, IgA deficiency occurred more frequently in boys than in girls. More children suffered from allergies than autoimmune diseases. The incidence of abnormalities in WBC appears to be higher than in another analysis. Patients needed further follow-up due to the risk of developing comorbidities.

Suprising occurance of brucellosis detected in 9-year-old girl - case report

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Introduction

Brucellosis is a worldwide zoonotic disease, in Europe particularly prevalent in Mediterranean countries. Human infection is associated with consumption of unpasteurized milk, close contact with infected animals and often connects with history of travel to endemic regions. Pathogens which cause the discussed illness are Brucella spp, of which the most commonly spread species in Central and West Europe are B. aburtus and B. melitensis. Affected patients mostly complain about non-specific symptoms like fever, fatigue, loss of appetite, sweating and general malaise, however brucellosis is a multisystem disease that may present with a broad spectrum of clinical manifestations.

Case Report

We report the case of a 9-year-old girl, a country dweller, who presented with over one month history of undulant fever, loss of appetite and tenderness in left hypochondrium. Based on laboratory work-up she was initially diagnosed with infectious mononucleosis and treated with Biofuroxym with short-term improvement. Due to subsequent exacerbation of symptoms and left-upper-quadrant tenderness ultrasonography of the abdomen was performed and revealed multiple hypoechogenic lesions in liver and spleen consistent with granulomas. The girl was referred to Independent Public Clinical Hospital No. 1 in Zabrze, where she was further evaluated for cause of her symptoms. At admission scratch disease was considered as first differential diagnosis and the girl was treated with Dalacin C. Further investigations however revealed serology positive for Brucella. During the course of hospitalization serum levels of aspartate and alanine aminotransferase remained normal. Following treatment rapid clinical improvement was observed and after one week the girl was dismissed from the hospital. Successful recovery was confirmed by ultrasonography performed 3 months later, which showed complete regression of lesion in liver and spleen.

Conclusion

Although European Union considers Poland free from brucellosis, our population (predominately inhabitants of rural areas with occupational exposure) occasionally suffers from acute or chronic form of brucellosis. Brucellosis can affect multiple organs including heart, spleen, liver, nervous and musculoskeletal system. Due to large variety of symptoms it may mimic more common entities e.g. cat scratch disease and listeriosis. Our case highlights that brucellosis should be taken into account when diagnosing pyrexia of unknown origin and that ultrasonography can reveal hepatic and splenic involvement and point to the appropriate diagnosis.

The comparison of C. difficile, norovirus, rotavirus and adenovirus infections of gastrointestinal system in pediatric patients treated for neoplastic diseases.

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Introduction

Immunosuppression caused by cancers and anti-tumor treatment leads to increased risk of infections, including gastrointestinal infections.

Aim of study

The aim of the study was to compare the frequency and type of viral gastrointestinal tract infections and Clostridium difficile infections in children treated for neoplastic diseases.

Materials and methods

We analyzed medical documentation of 31 patients with various viral and Clostridium difficile infections hospitalized in 2014-2016 at the Department of Pediatric Oncology and Hematology in Bialystok.

Results

There is a significant disproportion between the amount of cases of gastrointestinal infections that occur in boys (74%) and girls (26%). The most common infection was C. difficile (58%), then Rotavirus (21%), Adenovirus (19%), Norovirus (12%). There were 4 cases of co-infections. Recurrent infections occurred in 28% of patients. 38% of boys and only 10% of girls had recurrent infections. 60% of gastrointestinal infections occurred in patients with ALL. 67 % patients developed an infection during chemotherapy. The most frequent symptoms were diarrhea (60%) and fever (30%). After excluding coinfections the highest peak of CRP and PCT was in the Clostridium difficile infection.

Conclusion

The study suggests that the gastrointestinal infections most frequently occur in patients during chemotherapy and the most exposed are patients with ALL. It can be explained by the frequency of this disease and relatively aggressive anti-tumor therapy. Boys are more exposed to gastrointestinal infections and recurrent infections than girls. The above results should be sustained in a bigger group of patients.

Ocular manifestations of childhood cancer – seemingly insignificant symptoms of severe disesases

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Introduction

Despite of the fact that ocular changes are not considered most frequent symptoms in the course of cancer, they can be an important diagnostic factor in this condition.

Aim of study

Characteristics of ocular manifestations in pediatric cancer.

Material and methods

The study was based on retrospective analysis of medical records of patients diagnosed with cancer and treated in the Department of Pediatric Hematology and Oncology of Medical University of Silesia in Katowice.

Results

The analysed group included 93 children (44 girls and 49 boys), in whom ocular signs were symptoms of main disease. In 47 cases ocular changes were the first manifestation of the disease.

The most common symtoms included: loss of vision acuity (N=23), strabismus (N=18), exophthalmus (N=13), ptosis (N=9), leucocoria (N=8), opsoclonus (N=7), diplopia (N=7). Ocular symptoms were a manifestation of cancer located in the orbital area, i.e. retinoblastoma (N=11), acute myeloid leukaemia (N=7), rhabdomyosarcoma (N=5), optic nerve glioma (N=5), medulloblastoma (N=3), nasopharyngeal cancer (N=2), as well as of distant location: brain tumors (N=49), abdominal tumors (N=6), mediastinal tumors (N=2) or tumor of neck (N=1).

Conclusion

Ocular symptoms can be the first clinical manifestation of oncological condition, preceding onset of systemic manifestation of the disease. Ocular changes in the course of childhood cancer present with various clinical pictures and awareness of their significance, together with holistic examination of the patient can play an influentantial role in implementing prompt diagnostic and therapeutic management.

Recognition of genetic predispositions in children with acute lymphoblastic leukemia: investigation of the need for genetic testing.

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Introduction

Acute lymphoblastic leukemia (ALL), occurring in 75% of all acute forms of cancerous diseases concerning WBC in children, is the most common form of leukemia affecting the youth. Some cases of ALL result from genetic predisposition. There are many literature references revealing that genetic predisposition for childhood cancer is underdiagnosed. Identifying susceptibility for ALL could be relevant for the patient, his family and could determine clinical course of the disease or lead to modified treatment strategies in case of expected increased toxicity or resistant disease.

Aim of study

The aim of this study was to identify and select patients at possible high risk for genetic predisposition to acute lymphoblastic leukemia and may benefit from adequate genetic testing in the future.

Material and methods

Our study was carried out in the Department of Pediatrics, Oncology, Hematology and Diabetology of Medical University in Lodz. The study group consisted of 156 children and adolescents suffering from ALL. Medical documentation of patients diagnosed in the period of time 2003 – 2017 has been analyzed and the survey has been performed. To identify children affected by ALL with high risk of carrying ALL predisposing genetic mutation, we took under consideration the following criteria: positive family history of the child with diagnosed ALL; coexistence of two malignancies; occurrence of ALL and concomitant congenital anomalies or other specific symptoms; excessive treatment toxicity. The presence of one or more characteristics suggests risk of hereditary cancer and necessity for genetic counselling. The significance of the criteria was analyzed using Chi-squared test and Mann–Whitney U test.

Results

Study group consists of 156 patients: 96 boys and 60 girls. The group with ALL and concomitant potential factors predisposing to ALL and indications to genetic examination consisted of 40 children, whereas the group with unfulfilled criteria included 116 children. 78% (31/40) of children presented excessive treatment toxicity and 42,5% (17/40) of patients revealed the occurrence of congenital anomalies and other symptoms. 2 children had positive family history, whereas 1 child had two malignancies. Comparing the number of fatalities in both groups, mortality among the children with potential factors predisposing to ALL reached 17,5% and in control group: 6,0% ($p=0,0287$).

Conclusion

Genetic predisposition for ALL in pediatric patients is underestimated. Children with congenital abnormalities and atypical course of ALL still pose a challenge in terms of successful treatment, free from therapy-induced toxicity and side effects. In these cases, referral to clinical geneticist is worth considering, as being potentially beneficial for the patient and his family.

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New solution for acne problem?

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Introduction

Propionibacterium acnes form alongside other bacteria microbiota of human skin. The factor influencing on its composition is undoubtedly the ability to produce inhibitory substances for growth of other bacteria known as bacteriocin-like inhibitory substance. Growing among bacteria multidrug resistance MDR encourages researchers to seek new therapeutic solutions, including substances that can be an alternative to antibiotics. The solution to this problem may be BLIS.

Aim of study

The aims of the study were searching for substances with antibacterial activity produced by *P. acnes* and evaluation of their spectrum of activity. After finding of promising preparations BLIS, it was planned to make trials concerning development of method for the isolation of this small peptide, which in the future would allow for assessment of its physicochemical properties and biological and create opportunities to use in medicine.

Materials and methods

33 strains of *P. acnes* (29 derived from acne skin, 4 - healthy individuals) were tested. The BLIS production ability was evaluated against 23 indicator strains, including naturally occurring same niche and pathogen species (all from ZMFiD UMED Łódź collection).

Spectra of BLIS performance were evaluated by incubated in the immediate vicinity of the indicator strains in precisely defined conditions. The influence of culture time on BLIS production ability (72, 96, 120h) was investigated.

An attempt was made to isolate BLIS. A method has been developed using a kit for the isolation of small proteins. Obtaining satisfactory results required optimizing the culture conditions on the liquid medium as well as tedious evaluation of each of the steps using different variants. Culture media of different compositions were used and the pH of the individual stages of the isolation was modified.

Results

The optimal time of culture (after which the greatest antibacterial activity was observed) was 96-hour incubation. The ability to produce BLIS was demonstrated in 10 *P.acnes* strains tested (30%). Activity was observed against *C. diphtheriae* var *gravis* and. var *militis, S. hominis, S. simulans*, *S. haemolyticus*, *M. luteus*. The strains of healthy skin and acne were compared. More active were those that were isolated from normal skin. Culture and isolation conditions were optimized. Enrichment with cysteine hydrochloride was found to be optimal. The cells are most efficiently coated with BLIS at pH5,5 and preferably separated from them at pH1,5. Determination of these parameters allows for further work on insulation.

Conclusion

The results show that *P. acnes* isolated from healthy skin actively regulate the composition microbiota of human skin. Strains derived from acne skin have a lower BLIS production capacity what presumably leads to a change in the microbiota composition and opens the gates to pathogens. Therefore, it can be anticipated, that producers can contribute to the stabilization of microbiota and to replace antibiotics.

Antidepressant drug treatment alters the level of expression of synthesis enzymes ceramide in the de novo pathway in the rats brain

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Introduction:

Dysregulation of the ceramide metabolism (e.g., by the acid sphingomyelinase) has been proposed as an important factor in the pathogenesis of depressive disorders. Moreover, as shown in recent years some antidepressant drugs function as the acid sphingomyelinase inhibitors and decrease ceramide levels in the rat hippocampus. However, the role of the *de novo* ceramide synthesis pathway in the etiology of depression and mechanism of actions of antidepressant drugs is unknown.

Aim of study

The aim of this study was to analyze effects of antidepressant drugs or compounds having different mechanisms of actions and chemical structures such as imipramine (IMI), tianeptine (TIA), escitalopram (ESC), ketamine (KET) and N-acetylcysteine (NAC) on several ceramide synthases and dihydroceramide desaturase in the rat striatum and prefrontal cortex.

Materials and methods:

Male Wistar rats received IMI (15 mg/kg), TIA (10 mg/kg), ESC (10 mg/kg), KET (10 mg/kg), NAC (100 mg/kg) or corresponding vehicles acutely or chronically (for 14 days). Twenty four hours after the last injection the animals were decapitated and their brains dissected into 2 structures were analyzed with using Western Blot.

Results

We found significant decreases in the protein levels of synthase ceramides (1, 2, 4 or 5) after chronic administration of IMI, ESC, TIA, KET or NAC in the striatum or in the prefrontal cortex (in the latter brain structure chronic IMI increased synthase ceramides 1 and 5 levels. Furthermore, acute and chronic administration of ESC resulted in a significant decrease in the level of the dihydroceramide desaturase in the striatum and/or prefrontal cortex, while chronic administration of IMI and NAC provoked a significant increase in the protein enzyme levels in the striatum and prefrontal cortex, respectively.

Conclusion

Our findings indicate for the first time the the *de novo* ceramide synthesis pathway is linked to the actions of antidepressant drugs

Determination of phenolic acids content in lozenges with thyme extract

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Introduction:

Thymus vulgaris (Common thyme), a plant from *Lamiaceae* family is used for many years not only in cuisine, but also as a medicinal plant. A thyme contains: essential oil, tannins, phenolic acids and flavonoids. Phenolic acids, such as rosmarinic acid and caffeic acid, possess various biological activities: anti-inflammatory, anti-oxidant, free radical scavenging and anti-infective. Due to its rich chemical composition thyme have expectorant, secretive, secretomotor and antiseptic properties. Many expectorant drugs and diet supplements recommended in respiratory system diseases with persistent dry cough and sore throat contain thyme herb and its extracts.

Aim of study

The aim of this study was to determine the amount of phenolic acids (rosmarinic and caffeic acid) and flavonoid (luteolin 7-glucoside) in over-the-counter drug and dietary supplement lozenges containing thyme extract using HPLC method.

Methods and materials

Six lozenges available in pharmacy, one drug and five dietary supplements containing thyme extract were analysed. Caffeic acid, rosmarinic acid and luteolin-7-glucoside amounts were measured in the study. The research was made using HPLC ThermoScientific Ultimate 3000 and column ThermoScientific, Hypersil GOLD aQ, 250x4.6mm, 5µm. Results were analysed using Chromeleon software.

Results

The highest phenolic acids and luteolin 7-glucoside concentration was found in a drug product. Concentration in some of the diet supplements were below the detection limit of measuring device or no presence was found at all.

Conclusion

Obtained results confirm that medicinal status products guarantees quality and right amount of active substance making the treatment safe and effective.

Investigation and computational prediction of effects of cefuroxime axetil - hydroxypropyl-β-cyclodextrin complex formation

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Introduction

Cefuroxime axetil (CA) is an oral second generation cephalosporin antibiotic. The compound displays excellent potency against *Streptococcus pneumoniae, Haemophilus influenzae, Moraxella catarrhalis* and group A beta-hemolytic streptococci. Its active form is cefuroxime, obtained in vivo as a result of hydrolysis of the ester bond. Esterification of cefuroxime resulted in analog with better bioavailability, chemical stability and less bitter taste but decreased solubility. In order to solve this problem an inclusion complex of CA with hydroxypropyl-β-cyclodextrin (CD) was proposed.

Aim of study

The aim of our work was to investigate if complexation of CA with HP-β-CD impacts CA apparent solubility and to which extent.

Material and methods

The inclusion complexes used in study were previously prepared with co-precipitation method by combining equimolar methanol solution of CA and water solution of CDs. The samples were steadily stirred until complete evaporation of solvents. The complexes formation was characterized using FT-IR, DSC and molecular modelling. Phase solubility test was carried out using 10ml stoppered flask filled with 0-0.01 mmol solutions of CD and excess of CA added. After 72h of stirring under controlled environment conditions of 25°C and 50 RPM concentration of CA was determined. Apparent solubility test was conducted in paddle apparatus in water medium to provide in vitro drug solubility information.The changes of solubility of CA as a function of CD concentrations (0–0.01 mmol) and apparent solubility of CA in complex with CD were measured using UV spectroscopy. Behavior of CA in complexes was predicted using molecular dynamics Merck Molecular Force Field 94 and Parametrization Method 7.

Results

Phase solubility studies allowed to determine stability constant of CA – HP-β-CD complex formation in water solution. According to conducted study, significant increase in solubility of CA was observed in presence of polymer. Molar ratio of complex formation was determined as 1:1 since linear dependency between API and CD concentration in solution was observed.

Conclusion

According to apparent solubility study, same concentration of CA is reached faster when it's complexed with cyclodextrins than by itself. Moreover, using samples of complexed CA, 10% more drug was released during study. Experimental results were consistent with theoretical investigation, since negative change of enthalpy was calculated for complexation process of CA and HP-β-CD.

The scientific work was funded from the budget resources for science in the years 2015-2018 as a research project within the program "Diamond Grant".
We would like to thank prof. Irena Oszczapowicz from Institute Biotechnology and Antibiotics for providing cefuroxime axetil samples.

Preparation and determination of gliclazide complexes with cyclodextrins - experimental and theoretical studies

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Intorduction

Sulfonylureas are a group of organic compounds containing a central *S*-arylsulfonylurea structure. Gliclazide is one of a second generation sulfonylurea drugs used as antidiabetic drugs in treatment of diabetes mellitus type 2. It is characterized by poor solubility which is limiting aspect of its bioavailability.

Aim of study

The aim of the study was to prepare complexes of gliclazide with several cyclodextrins (CDs) including α, β, and γ cyclodextrins as well as their synthetic derivatives - hydroxypropyl-α, β, γ and methyl- β cyclodextrins. CD complexation improves water solubility and dissolution rate of poorly-soluble drugs, enhances their stability and bioavailability. Furthermore CD molecular encapsulation can also be used to mask unpleasant taste or odour, protect sensitive molecules from light or oxygen.

Materials and methods

Inclusion systems in solid state were obtained using co-precipitation method by stirring together equimolar methanol solution of API and water solution of CD. After evaporation of the solvents the residue was used for further analysis. Differential Scanning Calorimetry (DSC) and FT-IR (Fourier transform infrared spectroscopy) technique were used in order to determine complex formation. Both thermal and spectral measurements were carried out for complexed samples, physical mixtures and separated substances. Molecular modelling approach was proposed in order to point out possible modes of binding of API and CDs. The structures were docked using molecular dynamics with Merck Molecular Force Field 94 taking into account all possible relative conformations in API – CD system. Parametrization Method 7 was used in order to optimize geometry in accurate manner and calculate thermodynamic effects of complexation as well as FT-IR theoretical spectra.

Results

Variations in the DSC thermograms and FT-IR spectra observed in analysis between complexed samples and physical mixtures suggest host-guest interactions and may be related to the complexation process and inclusion. Computationally modelled spectra helped to identify bands related to bonds between API and CD in complexed system.

Conclusion

Performed studies showed that co-precipitation enabled to form inclusion complexes of gliclazide and various CDs while DSC and FT-IR techniques supported by molecular modelling methods are effective methods of API-CD complexes characterization.

The scientific work was funded from the budget resources for science in the years 2015-2018 as a research project within the program "Diamond Grant".

The effect of the mixture of plant extracts on hair growth

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Introduction

Hair loss is a very important factor affecting both the social and psychological aspects of the patient's balding life. Treatment of alopecia, depending on its type, mainly includes pharmacotherapy leading to the inhibition or slowing down of hair miniaturization and/or their elimination. In view of the wide spectrum of side effects of currently used drugs, new treatments for baldness and hair growth disorders are being sought based on natural, potentially safer ingredients.

Aim of study

to quantify the efficacy of a topical anti-alopecia lotion formulation, administered as a solution for rubbing.

Material and methods

Ingredients: Amino Extract, Hedera Helix Extract, Lamium Album Extract, Arnica Montana Flower Extract, Chamomilla Recutita Flower Extract, Arctium Majus Root Extract, Officinalis Marigold Flower Extract, Pinus Sylvestris Bud Extract, Rosmarinus Officinalis Leaf Extract, Salvia Officinalis Extract, Nasturtium Officinale Extract, Calendula Tropaeolum Majus Flower Extract, Citrus Medica Limonum Peel Extract, Arginine, Biotin, Zinc Gluconate, Acetyl Tyrosine, Niacinamide, Panax Ginseng Root Extract, Hydrolyzed Soy Protein, Calcium Pantothenate, Ornithine HCI, Polyquaternium-11, Citrulline, PEG-12 Dimethicone, Glucosamine HCI, Panthenol, Glyceryl Laurate, Tocopherol, Linoleic Acid, Retinyl Palmitate, Polysorbate 20, PEG-20, Zinc PCA, Acrylates / C10-30 Alkyl Acrylate Crosspolymer, Triethanolamine, Diazolidinyl Urea, Iodopropynyl Butylcarbamate, Parfum, Hexyl Cinnamal, Limonene, Linalool

The study was conducted with 12 volunteers (7 women, 5 men) in 7 weeks. In the first stage of the study shaved skin area covering 4 cm2 symmetrically on both sides of the skull near the occipital bone. One test portion was applied to one part of the shaved skin and to the other side of the placebo. Skin and hair analysis was performed at 3 time points: before application of the test preparation, 3 and 7 weeks after application. Analysis of the results included: clinical picture of the skin, high frequency ultrasound (33 MHz head), trichological analysis.

Results

The obtained results condemn the statistically significant differences between the skin and hair parameters of the investigated formulation and the placebo. These differences include both morphometric parameters of the hair shaft (thickness, length) and skin parameters (echogenicity) analyzed by high frequency ultrasonography. At the same time, none of the test subjects found any undesirable effects of the test product.

Comclusion

At the same time, the proposed research methodology allows to quantify the rate of hair growth, assess the morphometric characteristics of the hair stem and the ultrasound parameters of the skin within the hair apparatus.

Biological evaluation of the new tetrahydroacridine derivatives with potential ability to the treatment of Alzheimer's disease.

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Introduction

Neurodegenerative diseases constitute significant problem of global health due to incurable and progressive character of them. Alzheimer's disease (AD) plays the main role as neurodegenerative disease generally affecting elderly people, especially above 65 years old. Clinically AD is characterized by progressive decline of memory, learning processes, language and personality changes which reduce ability to basic activities of daily living. AD affects about 6% (47 milions of people) of the population in the world and statistics show that number of affected people will be rise to 131 million in 2050. The frequency of AD cases are correlated with the age which is considered as a basic risk factor. Despite of highly advanced medicine there is no effective cure so far. The first drug approved by FDA was tacrine. Nonetheless, the therapy with tacrine offers some benefits, serious side-effects including hepatotoxicity, gastrointestinal toxicity and hypotension forced FDA to withdraw tacrine from the market. Nowadays three reversible acetylcholinesterase inhibitors (donepezil, rivastigmine, galantamine) and one NMDA receptors antagonist (memantine) are a standard treatment of AD. Acetylcholinesterase inhibitors (AChEIs) can only slow the progression of disease and elevate daily living ability in patients but completely cure is still not possible.

Aim of study

The aim of the study was a biological evaluation of obtained tetrahydroacridine derivatives and define their inhibition potency for acetylcholinesterase (AChE) and butyrylcholinesterase (BChE).

Materials and methods

The biological evaluation of inhibition potency against AChE and BChE was performed using Ellman's method. Kinetic characterization of the most potent compound was also conducted using the same method.

Results

Based on the study of completely new synthesized derivatives were selected compounds with the best properties in inhibition of AChE and BChE and with the highest selectivity for both cholinesterases.

Conclusion

A novel compounds may be considered as a new potential drugs in treatment of Alzheimer's disease because of their inhibition potency against AChE and BChE compared to the standard.

Variability of tacrolimus and cyclosporine blood levels in adult kidney transplant recipients in long term after transplantation.

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Introduction

Tacrolimus (TAC) and cyclosporine (CsA) are calcineurin inhibitors most often used as immunosuppressant agents for prevention of organ rejection. Both drugs are characterized by narrow therapeutic index, with small differences between therapeutic and toxic doses. Therefore, drug level monitoring is required for these agents. Numerous factors, such as other medications, dietary supplements (including herbal preparations) and patients' diet, may influence their blood levels.

Aim of study

Evaluation of possible factors that may influence immunosuppressive drugs concentrations variability in KTx recipients.

Material and methods

A survey regarding use of dietary supplements (DS) and over-the-counter (OTC) medications was conducted among 78 KTx patients (27 F; 51 M) in long term after transplantation, with stable graft function, attending routine posttransplant outpatient visits. Patients' estimated glomerular filtration rates (eGFR) as well as TAC or CsA trought blood levels from five consecutive visits were obtained from medical charts. TAC therapeutic level range is 5 to 8 μg/l and CsA - 75 to 125 ng/ml. The impact of DS/OTC use on the variability of TAC or CsA blood levels was evaluated.

Results

The mean age of the population was 53.2±12.3 years and the mean time after transplantation was 5.8±1.8 years. 60 patients were treated with TAC and the other 18 with CsA. In the TAC group, 28.5% of the drug levels were outside of the therapeutic range (with 19.3% above and 9.2% below; min 2.6, max 11.8). In the CsA group, 40.2% of the drug blood levels were outside the therapeutic range (26.4% above and 13.8% below, min 39.4, max 149.9). The coefficient of variation (CoV) of TAC blood levels from five consecutive visits was 20.5%, whereas the CoV of CsA levels was 18.2%. There was no significant difference in CoV of TAC levels between patients who admitted to ingestion of OTC medications and patients who did not ingest any ($p=0.5$), or in patients that used or did not use DS ($p=0.3$). Similarly, no significant difference was found in CsA level CoV between patients ingesting OTC medications ($p=0.6$) or DS ($p=0.2$). Variability of CsA concentration was higher in women (CoV 23.9%) than in men (CoV 13.7%); $p=0.017$.

Conclusion

The use of OTC medications or dietary supplements does not significantly influence the immunosuppressive drugs' level variability in adult KTx recipients. Variability of CsA concentration is higher in women than in men.

PSYCHIATRY & PSYCHOLOGY

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The family conditions of adolescents with conduct and emotions disorders hospitalized on stationary ward - comparative analysis of 1990/1991 and 2014/2015.

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Introduction

In Poland, over the last twenty five years, there has been a shift which has redefined certain areas of social functioning including the functioning of families. These changes have impacted the way family takes care of children and the ability to provide them secure attachment. Redefinition and changes in roles and family positions are challenges for professionals who help children and adolescents suffering from psychiatric disorders. According to clinical observation there is an increase in occurrence of conduct and emotions disorders in population including the group of hospitalized children and adolescents which is probably caused by familial inability to manage crisis and conflict situations independently.

Aim of study

The aim of our study is to compare reasons for admission to ward, elements of psychopathology and families' situations (including relations among family members) in groups of patients with conduct and emotions disorders who were hospitalized on a stationary ward between 1990/1991 and between 2014/15.

Materials and methods

The research is a descriptive, retrospective study based on the analysis of medical charts of patients in the age group between 13 and 19 years old suffering from conduct and emotions disorder who were hospitalized on the stationary ward in the Department of Child and Adolescent Psychiatry, University Hospital in Cracow between 1990/1991 and between 2014/2015.

Results

Between 1990/91 there was 243 patients hospitalized on the stationary wards, 12% of this hospitalizations refer to adolescents with conduct and emotions disorders. Analogously - between 2014/15 there was 357 hospitalized patients and 28% of them with conduct and emotions disorders. We have also received the following frequency of factors describing the family situation: violence in 1990/91 - 32% and in 2014/15 - 42%; alcoholism in 1990/91 - 40% and in 2014/15 - 42%, family breakdown in 1990/91 - 52 % and in 2014/15 - 70%. The frequency of autoaggression among patients hospitalized in 1990/91 amounted to 44% and among patients hospitalized in 2014/15 - 80%.

Conclusion

Based on our results, there is a visible increase of hospitalizations of patients in the 13 to 19 age group in 2014/15 when compared to 1990/91. There is also an increase of hospitalized adolescents with conduct and emotions disorder within these groups. These observations as well as analysis of the other above-mentioned results may carefully indicate that families of adolescents with emotional problems experience increasing difficulties coping with crisis and conflict situations .These tendencies are a social problem for which the health care system is only partially prepared.

Psychopharmacology from a Polish clinicians' perspective – pilot study

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Introduction

Although, the mind seems to be no longer much of a mystery but cerebral mechanism that can be manipulated, it is still not entirely studied and understood. The complexity of syndromes, multiple etiologies, blurred boundaries of organic and functional disorders and hardly-measurable end-points explain why it is so extremely difficult to find validated molecular targets of drugs. Despite the fact that neuroimaging and genetic testing give hope for more objective methods in this very uncertain scientific terrain, there is still a long way to progress. Animal models are misleading, preclinical screens are not satisfactory, not to mention vast and costly clinical studies. This may be the explanation why major pharmaceutical companies seem to lose interest in the development of psychopharmacology, brushing aside prevalence and huge medical need, and engage in different fields of medicine.

Aim of study

The aim of the study was to evaluate what is lacking most in pharmacology used in therapy on the daily basis and emphasize hopes and wishes of the polish psychiatrists.

Materials and methods

The author's questionnaire was carried out during the International Medforum Psychiatry Congress 2016 in Wisla, Poland.

Results

109 psychiatrists, aged mainly 41-50 (31 men and 78 women) , were surveyed. Affective disorders, schizophrenia and anxiety disorder (except for OCD) were most frequent diagnoses made by the doctors while antidepressants was the major group of drugs they used in daily practice. Areas facing the biggest medical need to introduce new drugs were schizophrenia and dementia. Enhanced versions of existing drugs, but with fewer side-effects and completely new drugs were perceived as the most desired forms of pharmacology. Moreover features mostly desired for drugs where both high effectiveness and the least number of side-effects, preferably with simple dosing. Reasons playing the main role in slowing down the development of psychopharmacology are said to be lack of enough funding and legal difficulties.

Conclusion

Has the golden age of psychopharmacology already passed? 51.38% of respondents answered that it reached its peak in the last decade of XX century. On the other hand psychopharmacology still seems to be unsatisfactory and 37.62% of inquired doctors are looking forward to completely new solutions.

Salivary cortisol concentrations in patients with mental disorders in comparsion with a healthy control.

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Introduction

The hypothalamus-pituitary-adrenal axis (HPAA) plays a pivotal role in response to a range of external and internal factors often described as „stress". Growing evidence in a literature, suggest various dysregulations of HPAA, in course of numerous mental disorders, such as schizophrenia or anxiety disorders. According to the literature those patients seem to have elavated basal cortisol secretion, what might by caused by the diminution of glucocorticoid receptors' amount.

Aim of study

It was of the interest if cortisol concentrations in patients with mental disorders who under went treatment, differs from health individuals.

Materials and methods

Three groups of participants were included into the study. First group (study) consisted of 32 patients with diagnosed schizophrenia, 18 patients with anxiety disorders and control group which included 55 healthy individuals. Study was divided into two stages, first one (pilot) included only control group, and utilized cortisol concentrations measurement from saliva, blood and 24h urine sample. Second part (main study) involved both group although focused on a salivary cortisol concentrations.

Results

Mean salivary cortisol concentrations in patients with schizophrenia and anxiety disorders were significantly higher in comparison with results obtained from a health control ($p<0,05$).

Conclusion

Obtained results indicate that patients who underwent a treatment, and does not present notable clinical signs of schizophrenia, may have moderately lowered levels of salivary cortisol. This may be a reflection of relenting psychotic symptoms as well as a direct effect of atypical antipsychotic drugs on a HPA axis activity.

Evaluation of polymorphisms at positions G2168A of the ABCC1 gene in the group of patients with depression.

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Introduction

Depression is considered to be a civilization disease of the XXI century. The causes of depression development are not fully known. However, several factors that may contribute to the development of this disease were recognized, inter alia: chronic stress, high concentration of proinflammatory cytokines, lack of monoamine responsible for the regulation of the mood. It is also believed that genetic factors may increase susceptibility to the development of depression.

ABCC1 gene that encodes a protein MRP1. It is a ABC transporter which use the hydrolysis of ATP to provide energy to transport many kind of substrates. MRP1 is located in many tissues of our organism (lungs, kidney, bladder) and barriers (barrier blood-brain). One of the most frequently studied SNPs in ABCC1 gene is G2168A. Polymorphisms of the gene can alter the protein product which leads to loss of protective function and increase risk of diseases development. Also MRP1 is known as multidrug resistance protein so every change in gene ABCC1, like SNP, may influence into development of drug resistance and treatment failure.

Aim of study

The aim of the study was to asses polymorphisms at positions G2168A of the ABCC1 gene in the group of patients with depression.

Materials and methods

The material for the study consisted of 108 blood samples collected from patients with diagnosed depressive disorders (investigated group). While control group accounted for 101 blood samples taken from blood donors. For genotyping of ABCC1 at position G2168A PCR-RFLP method was used.

[Consent of Bioethics Committee of Medical University of Lodz No: No RNN/566/08/KB].

Results

Preliminary assessment of the polymorphism at position G2168A in the ABCC1 gene showed that GG genotype was dominant in both groups (control group 93%; investigated group 91%). The AA genotype was only present in the control group (2%), and that was statistically significant (p=0,00002).

Conclusion

Conducted analysis can reveal the existence of the relationship between polymorphism at position G2168A of the ABCC1 gene and the occurrence of depressive disorders. However, research requires further analysis.

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The influence of the treatment supported by NSAIDs on the effectiveness of pharmacotherapy of depression symptoms

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Introduction

Depression is an important clinical and economical problem around the world. Many theories trying to explain the appearance of depression have appeared. Lately, the so called "inflammatory theory" is gaining an increasing popularity. The increase of inflammatory parameters such as COX 2 enzyme, acute phase proteins or proinflammatory cytokines observed in patients with depression, brought the question whether anti-inflammatory drugs would be effective in the treatment of depression.

Aim of study

The aim of this study is to compare the effectiveness of the treatment of depression symptoms in patients using antidepressants with and without association with nonsteroidal anti-inflammatory drugs (NSAIDs).

Materials and methods

112 patients diagnosed with depression, treated in the Clinic of Adults' Psychiatry in Medical University of Lodz were subjected to query study which took into consideration patients' gender, age, education, place of residence, and the course of the disease. Furthermore, in each case the intensity of the episodes of depression was measured with Hamilton Depression Rating Scale (HDRS), which was performed twice: once during patient's admission to the ward and then after achieving clinical improvement, approximately after 8 weeks of pharmacological treatment. 26 patients (18 women and 8 men) were administered NSAIDs in addition to standard antidepressant therapy during their stay at the hospital. The control group of 26 patients was selected out of the remaining 86 patients. The effectiveness of treatment on both group of patients was then put in comparison based on HDRS results.

Results

Average HDRS results in patients not receiving accessory NSAIDs treatment decreased after hospitalization from 21,79 to 8,08 and among patients receiving NSAIDs from 24,27 to 7,23. The effectiveness of treatment seems to depend on gender- the associated treatment was more effective in men- consecutively from 20,87 to 7,62, and from 22,12 to 3,87 with NSAIDs, while among women from 22,19 to 8,22 and from 25,22 to 8,72 with NSAIDs. The difference of effects of treatment depending on used NSAIDs also turned out to be crucial. The study showed that the statistically relevant change of HDRS values was obtained among patients who used ketoprofen- average decrease from 33,00 to 3,50. Yet the use of ASA (acetylsalicylic acid) also brought better effects of treatment (23,37 to 6,12) in comparison with control group- from 21,79 to 8,04 ($p=0,01$).

Conclusion

The study showed higher effectiveness of the treatment of depression with antidepressants associated with NSAIDs, which was more remarkable within male patients. The results of treatment with ketoprofen seem to be most promising, however, due to the low number of patients receiving this drug, the confirmation on a broader group of patients is required. The results of the study indicate a new possible direction in the pharmacotherapy of recurrent depressive disorders.

Can dementia be surgically reversed? - Hakim's syndrome case report.

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Introduction

Dementia is a general term for a brain changes that cause a long term and progressive decline in a mental ability affecting the person's functioning and more advanced than one expected due to ageing. The cause of most dementia is irreversible and pharmacological treatment benefits are rather minor. There are only a few types of this disorder which can be curable and one of them is normal pressure hydrocephalus (NPH) also known as Hakim's syndrome. NPH occurs usually in the sixth and seventh decades of life and is characterized by the classical triad of the symptoms known as Adams or Hakim's triad: dementia or cognitive disorders, gait disturbance and urinary incontinence. Nonetheless the diagnosis is considered as difficult because none of the combinations of the cardinal findings mentioned above is pathognomonic and may occur among elderly. There are two types of NPH: idiopathic - about 60% of cases and secondary as an effect of central nervous system disorders. Imaging of a brain reveals ventriculomegaly due to temporary increased ventricular pressure caused by abnormal accumulation of cerebrospinal fluid (CSF).

Case Report

71-year-old female patient was admitted to the mental hospital, three months after the last psychiatric hospitalization, due to significant worsening of neurological symptoms, severe decline in cognitive function, aggression and newly occurred urine incontinence. During the first stay the main symptoms as dizziness, gait disturbance and falls, which she presented for about one year were regarded as related with Parkinson disease symptoms, which she was diagnosed with by a neurologist, iatrogenic methadone addiction and benzodiazepine abuse. In addition, the woman had a femur fracture due to fall in the ward. We gradually stopped giving mentioned above drugs to the patient and she was discharged with improvement and fracture healing. During the next hospitalization for the sake of lower MoCA test score and urine incontinence we conducted cranial CT which revealed dilated ventricles. With suspicion of NPH the patient was transferred to the neurosurgical department where the diagnose was confirmed by additional test and ventriculoperitoneal shunt was performed. Post-operative recovery proceeded smoothly, with gradual improvements in mental ability and motor functions.

Conclusion

NPH is potentially reversible cause of dementia but remains difficult to diagnose because deficits are often misinterpreted as a consequence of the old age. In case of decline of mental functions accompanied by worsening of neurological symptoms highlighting urine incontinence, diagnosis requires neuroimaging and radioisotope studies. If brain imaging reveals ventricular dilatation ventriculoperitoneal shunt should be considered. Noticeable improvement after CSF drainage is the confirmation of NPH diagnosis. As shown above correct diagnose and prompt treatment may result in significant reduction of symptoms and life quality improvement.

Influence of selected factors on MMSE and CDT results in patients above 60 years of age.

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Introduction

Dementia is defined as a gradual loss of intelectual capabilities and cognitive functions that may impair daily functioning. Regardless of ethiology, it is a progressive condition. Patients may however experience periods of stabilisation or partial remission. It is important to diagnose early signs of dementia in order to start pharmacological treatment and slow down disease's progression. Multimorbidity in the elderly leads to polypharmacotherapy and therefore to the need of a complex dosage regimen. In patients with dementia it is a real challenge.

Aim of study

To obtain information on incidence of cognitive disorders among patients aged over 60 and to analyse factors which may increase the risk of such disorders.

Materials and methods

A group of 115 primary care (NZOZ Vita Plus, Łódź) and hospitalised (Geriatric Ward USK WAM)patients aged over 60 was enrolled to this study (75 women - 65,2% and 40 men - 34,8%). Each patient performed tests: MMSE, GDS, CDT and completed a questionnaire concerning age, place of residence, marital status, family history of dementia, chronic diseases and medications.

Results

Education level in the group: 20% (n = 23) had basic, 51,3% (n = 59) secondary and 28,7% (n = 33) higher . Married were 45,2 % (n = 52) and single (never married or widowed) were 54,6 % (n = 63). 61,7% of patients had hypertension, 27,0% had diabetes, 9,6% were diagnosed with atherosclerosis and 9,6% of had a stroke in thepast. Mean score of GDS test was 9.2 points, of MMSE 25.7 and CDT 1.9.

Study showed that higher score in GDS correlated with worse result of MMSE ($p<0,05$). Age was an important factor because it has affected both MMSE (lower) and CDT results (higher) but only in group with basic education. Male patients achieved higher score in MMSE ($p = 0,0399$) and lower in CDT ($p = 0,0345$). MMSE test result was higher ($p = 0,0454$) and CDT result was lower ($p = 0,0230$) for married patients. The number of diseases correlated with GSD ($p<0,05$).

Conclusion

Our study showed that patients predisposed to dementia were : older females, patients with basic education and single, mostly widowed. Family physicians should pay a special attention to such patients and be aware of early dementia symptoms. Cooperation with patient's family or caregivers seems crucial to provide a proper care and improve compliance.

Body Dysmorphic Disorder - an underdiagnosed problem in aesthetic medicine.

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Introduction

Plastic surgeries and aesthetic medicine procedures have become increasingly popular and available recently. They are a significant aid for victims of accidents or scalds, whose bodies have been damaged due to unfortunate events. Cosmetic procedures also help to cope with complexes, improve and beautify the body. Among people who decide for plastic surgeries for the latter reason, there is a group of patients who obsessively magnify the flaws of their bodies or imagine such. Those people may suffer from body dysmorphic disorder and will not find a solution to their problem in any kind of plastic surgery or aesthetic medicine procedure. The prevalence of BDD is estimated to 2% in general population, and reach even 15% of patients seeking cosmetic surgery.

Aim of study

The aim of this study was to assess the prevalence of body dysmophic disorder among patients seeking plastic surgery procedures.

Materials and methods

A survey research was conducted on a group of 100 patients consulting plastic surgeon to make objective qualifications to the cosmetic surgery procedures. The respondents were asked to complete a questionnaire about demographic data, current and previous cosmetic procedures and Cosmetic Procedure Screening Questionnaire (COPS).

Results

Fully completed questionnaires were obtained from 87 cosmetic surgery applicants, 38 male (43.7%) and 49 female (56.3%). Almost 30% of the study group presents characteristics of dysmorphophobia (16% of men; 13,8% of women). Suspicion of body dysmorphic disorder was two times more frequent among patients qualified to cosmetic surgery procedures (40%) compared to patients who decided to undergo minimally invasive cosmetic procedures (19%; $p=0.03$). The most commonly indicated problem proved to be the abdomen (42,3%), skin (23%) and breast (15,4%). Obese patients (BMI>30) presented BDD more often (58.3%) compared to overweight or healthy weight patients, both 23% respectively ($p=0.001$).

Conclusion

Due to the frequency of incidence and significant underdiagnosement of dysmorphophobia, it is important to recognize such patients, especially among the visitors of esthetic and plastic medicine clinics.

Voice analysis in patients with mild cognitive impairment and Alzheimer's disease

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Introduction

Mild cognitive impairment (MCI) is a brain function syndrome involving the onset and evolution of cognitive impairments. It may occur as a transitional stage between normal aging and dementia. MCI is frequently seen as an early stage of Alzheimer's disease. Because of the increased risk of progression to dementia, patients with MCI should be diagnosed early.

Aim of study

The aim of the research is to develop a simple, inxpensive, non-invasive screening method, that allows diagnosis of the disease at its early stage.

Materials and methods

The first stage involves qualifying the patient to the appropriate group (experimental/control) according to known diagnostic criteria: NINCDS ADRDA (National Institute of Neurological Disorders and Stroke), biomarker evaluation of neurodegenerative process in cerebrospinal fluid and magnetic resonance imaging (MRI). The second stage involves laryngological examination, which includes: voice function analysis (videostrooscopy), hearing diagnostics and voice analysis in patients with early stage of Alzheimer's disease, using a specially designed Diagnova computer software. Exclusion criteria: deep hearing loss, past laryngological surgery, neuroinfection.

Results

Until now, voice analysis has been performed on the control group (30 participants) and the experimental group (20 participants). It has been shown that in the early stages of cognitive impairment the most visible phenomenon is "I have it on the tip of the tongue". Patients use different types of compensatory strategies, usually abandoning words or substituting them with synonyms. This kind of manipulation causes the patient's speech "empty", little informative and impoverished in terms of content.

Conclusion

Voice analysis appears to be a simple, non-invasive screening method, that allows diagnosis of the disease at its early stage. This method will allow the faster implementation of treatment and will improve the patient's prognosis. Furthermore, it is profitable from the economic point of view: the examination is inexpensive, accessible to everyone, it shortens the diagnostic process, allows faster treatment, which might decelerate the disease progression….

Comparison of TSH level in youths with schizophrenia, unipolar depression, bipolar disorder and conduct disorders

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Introduction

The link between thyroid function and mental disorders has long been recognized, especially in adult patients. There are still not many studies investigating the relationship between thyroid-stimulating hormone (TSH) anddifferent mental disorders in youths.

Aim of study

The aim of the study is to retrospectively compare the level of TSH in youth patients (Department of Adolescent Psychiatry) with schizophrenia, bipolar disorder, unipolar depression, conduct disorders and hyperkinetic disorders.

Materials and methods

The research involved 1107 hospitalized adolescent patients (702 women, 405 men, aged 12-18). All of them had TSH level measured at the beginning of their hospitalization and they did not take any supplemental thyroid therapy. There were 3 different analyses performed using Statistica Software 13.0:

a. The level of TSH was analyzed in the whole group of 1107 patients. We examined each patients' first hospitalization.

b. Then we selected patients diagnosed with one disorder from following groups: 1 – schizophrenia (F20), 2 – manic, hypomanic or mixed episodes in bipolar disorder (F30, F31.0, F31.1, F31.2, F31.6), 3 – depressive episodes in bipolar disorder (F31.3, F31.4, F31.5), 4 – unipolar depression (F32, F33), 5 – conduct disorders, mixed disorders of conduct and emotions (F91, F92), 6 - hyperkinetic disorders (F90). Then the level of TSH was compared between the groups.

c. In the third analysis we combined hospitalizations from groups 2 and 3 together into one group: bipolar disorder (F30, F31).

Results

The mean value of TSH (μIU/ml) in the whole group (n=1107) was 2,07 ± 1,1. The values of percentiles were as follows: 2,5th-0,55; 10th-0,89; 25th-1,3; 50th-1,9; 75th-2,64; 90th-3,46; 97,5th-4,76. There was found a negative correlation between TSH value and patients' age (p=0,00002). In the 2nd analysis (b) there was also found a relationship between groups of diagnoses and TSH value. Patients with bipolar depression (3) had higher values of TSH than patients with conduct disorders (5), (p=0,029). In the 3rd analysis (c) there was no statistically significant differences in TSH value among the groups.

Conclusion

Percentiles of TSH values in examined population are similar to centile charts for healthy population aged 12-18. Higher levels of TSH in bipolar depression subgroup (b) may confirm that it is worthy to consider supplementation of L-thyroxine in depressed individuals. The differences in TSH values among groups in 3rd (c) analysis were not found in contrast to adults from other studies. The explanation of this result may be that the population of psychiatrically hospitalized youth differs from adults who are hospitalized. Diagnoses in adolescents depend on many factors (non-typical clinical picture, coexisting factors, co-occurrence of suicidal behavior) and they often change into a different diagnosis in adulthood.

Pre-surgical depression: a silent threat.

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Introduction

As results from research, patients' good mental condition has an exceptional influence on the surgery's outcome in various aspects. It significantly improves convalescence, decreases the severity of pain (thus enabling lesser use of analgesics) and remarkably shortens the time of hospitalization which enables to reduce the costs of medical procedures. Unfortunately this field of patients' care is often neglected due to other preparations before the surgery.

Aim of study

The aim of the research was to determine, on the basis of various psychosocial factors, a group of patients, who are most subject to the occurrence of pre-surgical depression and therefore in an exceptional need for psychological preparation before the procedure.

Materials and methods

A survey research has been conducted on a group of 253 patients qualified for surgeries (including cardiosurgery, orthopedics, thoracosurgery, gastroenterological surgery and plastic surgery procedures). The survey consisted of a sociodemographic questionnaire as well as examined the patients with the State-Trait Anxiety Inventory (STAI) and Beck's Depression Scale. The study was approved by the Bioethical Commission of the Medical University of Silesia in Katowice.

Results

Answers were obtained from 253 people (percentage of answers- 83,6%); mean age 55,43 years. Average state-anxiety level was 41,89 points- 44,73 points for women and 39,40 points for men. Average trait-anxiety level was 36,24 points for all the group, 38,63 points for women and 34,14 points for men. 33,9% of patients presented moderate symptoms of depression and 8,4%- major depressive symptoms. A higher score state-anxiety inventory was presented in people who were engaged in informal relationships, the divorced and people who have offspring.

Conclusion

The study has determined several groups of patients who are exceptionally prone to present symptoms of depression due to the forthcoming surgery. Such patients require particular psychological care, and in some cases also pharmacological, in order to enhance their mental condition before the procedure and thus facilitate post-surgical convalescence….

Psychiatric manifestation after frontal lobe resection as a treatment of primary CNS lymphoma – case study.

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Introduction

Primary Central Nervous System Lymphoma (PCNSL) constitute about 2-4% of all tumours of the central nervous system and only 4-6 % of extranodal lymphomas. PCNSL Manifestation involves plethora of neurological and psychiatric symptoms.

Case Report

We present the case of a 71-years-old diagnosed with the malignant neoplasm of the left frontal lobe of the brain with multiple tumours in the left fronto-temporal and the right occipital areas. The histopatological examination revealed that tumor was Diffuse Large B-Cell Lymphoma (DLBCL). A month after the operation (left fronto-temporal craniotomy with resection of tumor in left frontal lobe), patient was admitted to the Department of Internal Medicine in the University Hospital in Cracow because of a fainting. After five days on the ward, patient exhibited risky behaviour in the form of self-defenestration. In the following days, the patient exhibited the signs of excitation, disorientation in time and space, jocular behaviour and had difficulties in verbal communication. Patient did not remember self-defenestration and denied any suicide attempts. Patient was also not aware of the malicious neoplasm or the brain surgery in the past. If released from the restraints, patient uncritically tried to jump out the window. Patient was transferred to the Department of Adult Psychiatry in the University Hospital after a week, complying the court's decision about the compulsory mode of admission. In that time, there were additional symptoms of delusions and visual hallucinations. The patient required an immediate radiotherapy because of the remains of the tumor cells in CNS despite the resection of the tumour. However, patient had no knowledge of his disease or the brain surgery – as a result, the patient did not agree to the radiotherapy, which cannot be conducted without the cooperation and conscious consent of the patient. After five weeks of individualized therapy, the patient had regained the partial criticism and the memory of the disease, brain surgery, and began to cooperate.

Conclusion

The presented case demonstrates the diversity of neuropsychiatric symptoms of PCNSL. The medical staff did not expect such violent manifestations of the disease as uncritical and repeated suicide attempts. Another aspect worth mentioning is the memory loss due to the progress of DLBCL, which made it impossible to implement the most optimal treatment of wide-spread tumours.

Diagnostic dilemmas: mixed personality disorder with psychotic symptoms – a case study

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Introduction

The aim of this article is to analyse the process of a psychiatric disorder lasting for 14 years. This case of the 34-year-old female patient illustrates diagnosis difficulties which might be encountered while differentiating mental disorders in which psychotic symptoms are present. These symptoms might hinder the real diagnosis if the full background is not considered.

Case Report

The 34-year-old female patient with no history of previous somatic problems. Single, unemployed, has completed secondary education. Since 2003 she has been hospitalised over twenty times in different Polish psychiatric clinics. In November 2016 she was admitted to the Clinic of Psychiatry in Bydgoszcz to continue the mixed personality disorder therapy. Over the years her diagnoses included: depression, delusional disorder, PTSD, paranoid schizophrenia, persistent delusional disorder, adjustment disorder; suspected about neurodegenerative disorder. Now she is suffering from imperative, commenting auditory hallucinations, anhedony, psychomotor retardation and problems with short-term memory. Hallucinations are poorly responding to pharmacological intervention and strongly influence her functioning. The disease started when she was 20 with an episode of severe depression. 4 years later appeared auditory and visual hallucinations. In the next years she suffered mainly from delusions of reference and of mind being read. The interview revealed also two suicide attempts and episodes of self-injuring. In her youth she was sexually abused and at the age of 15 raped by her cousin. As far as her background is concerned, her family relations are difficult, a dysfunctional mother-daughter relationship since early childhood.

Conclusion

Mental illnesses with psychotic symptoms such as auditory hallucinations may cause diagnostic problems. Special attention must be paid to a fact that productive symptoms may occur as a part of personality disorder. Their presence does not confirm the diagnosis of schizophrenia or other disorders from schizophrenia spectrum. It is widely known that psychotic symptoms can be a part of personality disorder, especially in a case of borderline personality disorder. The presented case study shows that it is also possible for hallucinations to occur with the mixed personality disorder. The presence of auditory hallucinations can be a consequence of many traumatic events which she has experienced during her life. The variability of diagnoses in psychiatry is not a negative phenomenon and usually not a sign of psychiatrist's incompetence. A diagnosis of the specific mental disorder may be instable and change frequently according to the point in time in which we are evaluating the patient's psychic status.

Facial expressions in patient with schizophrenia

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Introduction

Across multiple studies, individuals with schizophrenia are usually considered to have lowered observable facial expressions in comparison with a healthy persons. Theroretical wiritngs include plenty of descriptions of such phenomenon, although no regular studies were conducted in this field. This is mostly due to serious difficulties in reconstruction of human emotions in a way susceptible to the further statistical analysis.

Aim of study

Evaluation of facial expressions of a person with schizophreania utilizing Human Facial Modelling Lab in Polish-Japanese Academy of Information Technology in Bytom.

Materials and methods

A case-study of a patient with schizophrenia, who underwent an evaluation of facial expressions, based on a data provided by a computer reconstruction of his facial expression. Obtained parameters were compared with a healthy volunteer, matched for gender and age.

Results

Facial expressions in patient with schizophrenia were weaker than in a healthy volunteer.

Conclusion

Human Facial Modelling lab seem to be a credible tool in facial expressions analysis. Results of our study seem to support hypothesis about lowered observable facial expressions in patients with schizophrenia, although further studies on a larger group of patients are necessary.

Mental health disorders among patients with lung diseases.

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Introduction

Chronic diseases raise the risk of mood disorders. Patients with chronic pulmonary disease struggle with severely impaired functionality, somatic and psychogenic pain.

Aim of study

The aim of our study was to assess the prevalence of depression in population of patients hospitalized in Pulmonary Department in Katowice and determine the impact of depression on different aspects of life.

Materials and methods

The study was conducted on basis of Beck Depression Inventory (BDI) and author's questionnaire concerning quality of life. 111 patients hospitalized in Pulmonary Department in Katowice were included, 58 women and 53 men. Spirometry, blood gases measurement and anthropometric tests were used. All statistical analyses were conducted using Statistica v12.

Results

Patients with BDI score <10 (n=70, 63%) and patients with BDI score >10 (n=41, 37%) did not differ in age, 54,3 (SD=13,0) vs 59,9 (SD=10,2) respectively, p=0,08. Patients with mood disorders presented higher scores in MRC dyspnea scale (2,1+/-1,3 vs 0,8+/-1.0, p=0,00), however groups were similar in pulmonary function (FVC, FEV1, Tiff%). Patients with severe mood disorders had disturbed perception of their body weight and appearance, moreover they declared lower satisfaction in their sexual life. Depressive symptoms were also related to nicotine addiction. Lower mood was related to intensified presentation of somatic symptoms,such as dyspnea. Activity of patients with severe mood disorders was limited ,especially in fields of sport activity and house activity. Women had higher BDI scores than men (p=0,037).

Conclusion

Mood disorders are frequent among patients with lung diseases. Undiagnosed and untreated depressive disorders may cause decrease in life quality and exacerbate symptoms of somatic disease.

How dyspnea can affect mental health disorders and sexuality? A retrospective study.

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Introduction

Dyspnea is one of the most frequently observed symptoms in patients with pulmonary diseases. Patients with shortness of breath often have a concomitant depression. There are also concerns with sexuality among people with dyspnea.

Aim of study

The aim of this study is to examine the relation between depression, breathlessness and sexual functioning.

Materials and methods

Individuals were assessed with modified Medical Research Council scale (mMRC) to determine the degree of dyspnea and Beck Depression scale(BDI) to evaluate depressive disorder. Sample was categorized with mMRC: 0-1 and 2-4. A questionnaire including sociodemographic data and information about sexual functions was conducted. Measures of exercise capacity, spirometry and blood gases were also obtained.

Results

The study included 109 patients (56 males and 53 females) with lung diseases. Patients with mMRC: 0-1(n=69) and 2-4(n=40) differ in:6 MWT distance(452± 99 vs 347 ± 113.1 [m];p=0.01, respectively), BDI(7,5± 6.9 vs 13± 8.2, p=<0.05,respectively) and assessment of relationship with partner (4.1± 1 vs 3.7± 3.3 [%], p<0.05, respectively. A correlation between mMRC score and relationship with a partner was observed (r= -0.27, p<0.05). Statistical analysis also reveals positive correlation between mMRC score and BDI score (r=0.4; p<0.05). Patients with more advanced dyspnea did not complain about any kind of discomfort in regards to their sexuality(p=0.7).

Conclusion

Screening for depression may be necessary in patients with lung diseases. Paying attention to patients mental wellbeing can improve quality of lung diseases treatment.

PUBLIC HEALTH 1

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Usage of Internet as a source of medical information among adults

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Introduction

People who seek medical advice are very much likely to use the Internet as a source of health–related information. According to the latest data from Central Statistical Office of Poland 80.4% of Polish households have access to the Internet. Due to the fact that the quality and credibility of on-line medical information is disputable and depends on its source, it may result in numerous health-related problems such as drug overuse, patient's noncompliance and troubles in doctor-patient relationship.

Aim of study

The aim of this study was to obtain information on the scale and type of medical information sought by patients over 18 years old on the Internet.

Materials and methods

Participants were recruited during their visit to a primary healthcare clinic in Lodz, Poland (NZOZ Poradnia Lekarzy Rodzinnych VitaPlus) and *via* the Internet. They completed an author's proprietary questionnaire on paper or on-line. It contained basic socio-demographic questions and others concerning the usage of the Internet as a source of medical information. Only those who confirmed searching the Internet on health-related topics completed the part of questionnaire concerning the type of information sought.

Results

The survey group consisted of 301 participants, of whom 68,7% were women and whose median of age was 34 (min 18, max 77). As much as 93.3% of the participants confirmed the usage of the Internet as a source of medical information. Out of them, 77.6% claimed to use this information in everyday life. Almost three-quarters of respondents (71.5%) rated the credibility of this information as good or rather good. This positive rating of Internet medical information correlated with age ($p=0.0005$) and was more common among older survey respondents. Participants were most likely to seek information on analgesics (78.3%), drugs against the symptoms of common cold (53.7%) and dietary supplements (45.9%). Among other frequently searched contents were: drugs' prices (63.7%), side effects (52.3%), effectiveness (51.6%) and contraindications (44.8%). The most frequent health concerned searches were slimming diets (74.7%), physical exercises (64.1%) and healthy diets (62.6%). More than a half (53.4%) of those who search the Internet on medical topics claimed to seek on-line for information on possible diseases based on their own symptoms and 41,3% search for other patients' experience with the same disease.

Conclusion

Our survey shows that the percentage of patients using the Internet as a source of medical information is high (93.3% in our convenience sample). They most often search the Internet to find information on OTC drugs and health-related lifestyle issues. Doctors should be aware that many patients (53.4% in this study) may seek diagnosis on-line on their own.

Are risk factors of lifestyle diseases a threat to medical students?

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Introduction

Chronic stress, small amount of sleep, unhealthy lifestyle and stimulants are the most common risk factors of lifestyle diseases such as type II diabetes, metabolic syndrome, heart diseases and cancer. As medical students we were interested in risk factors exposure in medical students on our university.

Aim of study

Our purpose is to evaluate levels of stress and overtiredness and its connection with stimulants intake in medical students.

Materials and methods

The anonymous survey among 194 first (98) and sixth year (96) medical students was used to analyse levels of stress, overtiredness and amount of sleep. We also analysed factors that lead to escalation of stress and tiredness levels. We collected the data about the alcohol, caffeine and tobacco intake in examined group.

Results

We achieved 194 surveys (98- first year students; 96- sixth year students). We extracted two independent groups. The first study group consisted of 160 students with elevated stress level whereas the second study group consisted of 55 students with elevated tiredness level who sleep less than 7 hours per night. We analysed the stimulants intake in both groups. Among respondents 77% felt the highest level of stress due to studies. 82% of students feel stressed often and very often. In first study group 13% of respondents are smokers. 38% of them connected smoking with elevated stress level. 49% of students from first study group drink alcohol, 41% of them to reduce stress. 28% of responders feel overtired during the day and sleep less than 7 hours per night. Y% among them is dissatisfied with the amount of sleep. Our study showed that in second group 36% of students drink daily more than two cups of coffee, 61% drink coffee due to tiredness and sleep depravation. 77% of students connected higher coffee intake with studies.

Conclusion

This study shows that level of stress among medical students is disturbing. What is more, in our study group stress is often a reason for smoking. Almost half of students declare alcohol intake due to stress. High intake of caffeine is treated as a way to fight against overtiredness and sleep depravation in more than half of students.

Relation between occurrence of irritable bowel syndrome and stress in the medicine students and of other faculties of polish universities

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Introduction

Irritable Bowel Syndrome (IBS) is a chronic disease occurring in up to 20% of the world's population. IBS is a psychosomatic disorder resulting in a malfunction of bowels and is strongly connected with stress. Studying at university might trigger disease.

Aim of study

1) To compare intensity of stress between medicine students (MS) and of other faculties (N-MS)
2) To evaluate risk of developing IBS in the examined groups and its probable relation to the stress level.
3) To answer if it's necessary to implement prophylaxis amongst students at risk groups

Materials and methods

A survey-based research was performed on students aged 19-26. The questionnaire concerned studies, demographic data, lifestyle and psychosomatic well-being.
The stress level was evaluated with Perceived Stress Scale (PSS-10) form.

Results

We received a total of 878 respondents (Male = 182, Female = 695, N-MS = 334, MS = 543). The research showed no difference between MS and N-MS risk of IBS, as well as in the number of students seeking medical consultation of IBS symptoms between the examined groups.
Research proved that in the last year of MS the stress level is significantly lower than in the 1st year ($p=0.001$). Students who performed physical exercises for more than 5 hours weekly have lower stress level than those who exercise less than 1.5 hour weekly ($p=0.0046$).

Conclusion

There is no difference in risk of IBS between MS and N-MS. Physical activity is an effective method of IBS prophylaxis.

Evaluation of young adults' attitudes towards the elderly. Society's Attitude Towards the Elderly in Poland.

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Introduction

As a result of demographic aging of the Polish society there is a need to diagnose the situation through the study of public opinion on the perception of the elderly.

Aim of study

To determine attitudes of young adults between 18-35 years of age towards older people.

Materials and methods

A cross-sectional study - conducted by Department of Geriatrics Nicolaus Copernicus University Ludwik Rydygier Collegium Medicum in Bydgoszcz in the form of an anonymous questionnaire published in open source on-line survey application LimeSurvey. 225 people participated in the study. The following research tools: personal inquiry form of socio-demographic data; Kogan's Attitudes Toward Old People Scale and Implicit Association Test were used.

Results

The Kogan's Attitudes Toward Old People Scale mean score was 80.68 points. (positive statements 40.70 points, negative 39.97 points). Internal consistency based on the result of Cronbach's alpha was 0.622. There has been no significant difference between the sexes. The mean respondents felt age was 22.45 years. The mean age they wanted to live to was 84.43 years (the difference between the sexes $p = 0.042$). The respondents mean age which they would like to have, if they could choose was 20.66 years (the difference between the sexes $p = 0.049$). The mean age at which respondents agreed that old age begins was 60.91 years (the difference between the sexes $p = 0.042$).

Conclusion

Young adults in Polish society have slightly positive attitude towards older people regardless of gender. The mean age of which responders would like to live to or would like to have is dependent on gender. The men wanted to live to a higher age, and have a lower age than women. Those claiming the greater age as the threshold of senility characterized by a higher acceptance of the elderly. Those who were and felt older chose higher age, they would like to have. People feeling older pointed lower age they would like to live to, while older people have recognized a higher age as the threshold of old age.

Facts and myths about water consumption: Medical students' views and opinions

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Introduction

Water is an essential ingredient of human body. It has a variety of functions and the proper functioning of the body requires its adequate supply. There are many common beliefs about water, many of them are false.

Aim of study

The aim of the study was to assess the knowledge and beliefs of medical students on the benefits and potential risks of drinking water.

Materials and methods

The survey was conducted in the form of an online questionnaire consisting of 30 questions. The students were asked to mark on 0-10 scale to which extent they agree with each fact or myth about water intake. Theorems were previously assessed by medical authorities in the report "Facts and myths about water prepared in collaboration with Żywiec Zdrój S.A." published in 2012. The survey was completed by 441 (318 F, 123 M) students of medical universities, mostly from the faculty of medicine (64.85%).

Results

More than a half of respondents (54%) estimated their daily fluids intake at 1-2 L/day, 42% > 2L /day and only 4% < 1L /day. Most women drank 1-2 L/day (58.2%) whereas men (57.7%) consumed more than 2 L/day. 37% estimated the amount of pure or mineralized water drunk per day between 0.5-1L, 28% 1-1.5L, 18% admitted drinking less than 0.5L, 11% 1.5-2L, and 6% drank more than 2L of water a day. 62% of respondents believed the optimal daily fluids intake for men should be 2-2,5 L, 63% estimated daily fluids intake for women between 1,5-2 L.

44% believed that being thirsty is not a good indicator of dehydration, 18% had no opinion, 38% admitted that thirst appears only when a person is already dehydrated. The majority of students (58%) did not believe that drinking water can help prevent heart diseases, 28% did not have an opinion, 18% believed the statement was correct. 77% stated that drinking calcium-rich (hard) water is healthier than drinking soft water, 16% did not have a fixed opinion and 7% marked hard water as healthier than soft water. 43% admitted that there are diseases that require a limitation of water consumption, but 41% denied this statement, 16% could not unequivocally decide. 88% denied statement that drinking water does not prevent dehydration, 7% did not have opinion and 5% thought the statement was correct. Also 88% denied tap water being unhealthy, 7% had a neutral opinion and 5% believed tap water is unhealthy. The opinions about drinking water to prevent or combat infections were equally divided (34% positive, 34% neutral, 32% negative). Out of 23 detailed questions students correctly judged 13 facts and myths, were wrong about 3 and did not have an established opinion about 7 facts and myths.

Conclusion

The knowledge of medical students about the benefits and risks associated with water consumption is generally satisfactory, although in some aspects belief in myths still prevails. A substantial percentage of medical students do not have an opinion about proper hydration.

Assessment of the level of physical activity in different age groups in Lodz voivodeship - the key to the effective preventive methods

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Introduction

The level of physical activity is a modifiable risk factor which is important in the prevention of cardiovascular diseases, diabetes, obesity and many others non-communicable diseases. Physical activity includes all activities related to the exercise and movement (muscle work), during which the heart rate increases and breathing speeds up. These include in particular physical exercise (sport) and effort associated with daily activities (walking, cycling). The World Health Organization recommends at least 150 minutes of moderate-intensity exercise per week or at least 75 minutes of high-intensity activity per week. This is the absolute minimum to keep the fullness of health and well-being.

Aim of study

The aim of the study is to evaluate the level of physical activity among the adult population in Lodz voivodeship in different age groups.

Materials and methods

The analysis is based on the part of WOBASZ II study results. The survey was conducted in 2013-2014 and involved 276 participants, aged over 20 years old, inhabitants of Lodz voivodeship. The part of WOBASZ II questionnaire, which is the focus of attention, includes 11 single-choice questions referring to free-time physical activity, physical activity at work and job and associated with commuting to work or university and 8 questions about demographic features. The results of this study have not been previously published.

Results

The most of participants (52,54%; N=145) declare daily physical activity lasting minimum 30 minutes continuously. The highest percentage of people who are active every day 13,77% (N=38) belongs to the group of age 35-44 years. The most frequent reason responsible for not taking exercise on a regular basis is lack of time, over 15% of study group (N= 44) declare this. On the question "how often are you active" the most common answers are every 2-3 days, 26.02% (N = 38) or daily, 24.65% (N = 36). The 11,23% (N=31) of people, mostly women, spend less than 15 minutes daily on commuting physical activity. Over 5% (N=15) participants of the survey reported that their work was physically demanding and therefore they believe they do not need any additional physical activity.

Conclusion

Insufficient physical activity is an important issue of public health in Poland. Nearly half of the study participants do not achieve recommended dose of daily physical activity.
The analysis shows that public health specialists in Lodz voivodeship should mostly focus on the group over the age of 44 years. Appropriate methods of health promotion activities encouraging to regular physical activity are really necessary especially in the old population with increasing problem of non-communicable diseases.

Assessment of public awareness of tick-borne diseases and evaluation of GPs' advice concerning post-exposure prophylaxis in Poland

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Introduction

Ticks are becoming increasingly recognised as important vectors of pathogens in our region. Geographic expansion as well as changing climate conditions contribute to growing numbers of infected ticks. The increased prevalence has led to much confusion among patients, making tick-borne diseases a matter of concern.

Aim of study

The aim of this study was to assess the level of knowledge about tick-borne diseases within the Polish population and to evaluate GPs' advice regarding post-exposure prophylaxis.

Materials and methods

Between January 5 and March 20, 2017, we carried out an online survey among 368 respondents. The questionnaire consisted of: five questions referring to demographics, seven questions designed to measure the respondents' awareness of tick-borne diseases and six questions regarding their own experience. A score of 0 to 4 was given to each respondent on the basis of the number of correct answers dealing with general knowledge about tick-borne diseases. Statistical calculations were performed using Statistica v12 and Microsoft Excel.

Results

The mean score describing the participants' general knowledge was 2.90 (max, 4.00). The group comprising respondents with higher education and university students achieved significantly better scores (U Mann-Whitney test, $p<0.01$), with the mean of 2.96, as compared to those with lower education (mean score, 2.57). Interestingly, contact with social awareness campaigns did not have any impact on the number of correct answers (U Mann-Whitney test, $p>0.05$).

Merely 43.80 % of the study participants knew of the possibility of getting vaccinated against tick-borne encephalitis. Only 40,20 % answered correctly when asked about the proper method of removing a tick from the skin. 49.72% of the respondents reported having been bitten by a tick at least once. There was a substantial difference ($p<0.05$) in the prevalence of tick bites between inhabitants of the countryside (65.00 %) and those living in urban areas (47.30 %).

Among the respondents who consulted the GP after exposure, 52.63 % were not prescribed an antibiotic, 10.52 % were advised to take one dose, and 36.84 % received a prescription for an antibiotic for a longer period of time. 48.68 % responded that their GP did not provide any information considering risks and prophylaxis after exposure to a tick bite.

Conclusion

Our study has shown that the knowledge about tick-borne diseases in the Polish population is insufficient. Nevertheless, the level of education appears to have a higher impact on the awareness of the issue than contact with the relevant social campaigns. Therefore, more effective campaigns should be conducted. Furthermore, physicians should be more attentive to the issue of providing the explanation to their patients and recommend proper post-exposure prophylaxis

Priority directions of health promoting schools activity for improving the health in Eastern European countries

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Introduction

Ukraine, like other countries of Europe, takes part in overcoming this problem, in the search for effective mechanisms for the implementation of health-saving and health forming technologies. So, today school of Eastern countries such as Poland, the Czech Republic, Hungary, Ukraine and Russia participate in the project activities of the world health organization «The European network of health promoting schools» accorfing to which all schools should become health promoting Schools and later the Schools of health. But due to the different socio-economic situation of the countries, the development of these schools has different priorities, so for better performance it is necessary to study the experience of European countries.

Aim of study

to study the priority directions of health promoting activity of health promoting schools in the countries of Eastern Europe: Poland, the Czech Republic, Hungary, Ukraine and Russia.

Materials and methods

analysis of scientific and theoretical and methodological literature.

Result

The priority directions of health promoting schools activity for improving the health in Eastern European countries are under review: Poland and Russia – wellness-sports, for the Czech Republic and Hungary – preventive, for Ukraine – preventive-educational. The preventive line provides the foundation of the preventive measures system and impact of risk factors on the development of diseases; improving-sports complex activities as sports orientedand the wellness on elimination of expressed risk factors, and the complex of actions for thepatients' rehabilitation; preventive-educational direction is considered from the point of view of the benefits of the educational component (motivation on health maintenance, preventive care).The special attention is paid to the analysis of theoretical and legal bases of national networks of health promoting schools European countries activities. The main aspects are determined andlegislaed including: goals and objectives of the establishment and activity of the European network of health promoting schools; the main directions of its activity; forms and methods; management structure of activity and interaction and cooperation within the European network of health promoting schools. Determined that the idea of the project of the European network of health promoting schools is a further development of the WHO strategy , developed in the Ottawa Charter, the programme «Health for all», «Health – 2020» and «Europe – 2020».

Conclusion

Thus, the analysis of normative-legal documents of the activities of health promoting schools in the Eastern Europe countries and analysis of the research project «Student youth's health andbehavioral orientation», has allowed to define priority directions of their activity: for Poland and Russia – wellness-sports, for the Czech Republic and Hungary – preventive, for Ukraine – educational

Sanitary quality evaluation of the parks in Łódź in the context of public health risks – preliminary studies

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Introduction

Progressive anthropopression and absence of physical activity promote development of numerous metabolic, cardiovascular and musculoskeletal disorders. The health-conscious inhabitants of cities can perform outdoor exercise such as walking, running or cycling in parks. Unfortunately, the lack of information about air quality and possible biological contamination in those places may lead to allergic, infectious and invasive diseases. Moreover, in the past year the significant deterioration of air quality in a form of smog consisting of products of burning fossil fuels and industrial activity, was observed in urban areas, which can substantially affect citizens' health.

Aim of study

The aim of the studies was the sanitary quality evaluation of parks in Łódź during the autumn period.

Materials and methods

The studies were conducted in Łódź in 3 randomly selected parks: Piłsudski Park, Źródliska Park and May 3rdPark. The following three sanitary quality factors were included:

1. The biological evaluation of air quality to determine the presence of potential allergens and microbiological contamination.
2. The microbiological and parasitological evaluation of soil quality.
3. The sanitary examination (detection of faecal contamination) of water reservoirs located in the parks examined.

Obtained results were compared to valid standards: PN-Z-04111/02:1989, PN-Z-04111/03:1989, Soil Quality Standards by Parnakow & Mayer, PN-EN ISO 7899-2 and PN-EN ISO 9308-1. The statistical analysis of obtained data was made with STATISTICA software.

Results

The total number of bacteria in the air indicated 122.77 cfu/m^3 (Piłsudski Park), 332.01 cfu/m^3 (Źródliska Park) and 349.33 cfu/m^3 (May 3rd Park). The presence of fungi in the air was observed only in the Piłsudski Park. The isolated fungi belonged to 14 species, among others: *Alternaria alternata* and *Aspergillus fumigatus*. The total number of bacteria in the soil was: 21834.83 cfu/g (Piłsudski Park), 3920 cfu/g (Źródliska Park) and 3562.22 cfu/g (May 3rd Park). In the analyzed water, the presence of faecal bacteria was observed: coliforms at the level of $9.5x10^4$ cfu/100ml (Piłsudski Park), $20x10^7$ cfu/100ml (Źródliska Park) and 15 cfu/100ml (3rd May Park) and faecal streptococci at the level of 14 cfu/100ml (Piłsudski Park), 4 cfu/100ml (Źródliska Park) and 9 cfu/100ml (May 3rd Park).

Conclusion

The level of microbiological air contamination in all parks did not exceed the standards. The soil was poorly polluted (III degree of pollution) only in Piłsudski Park. The soil in other parks was unpolluted. The number of faecal bacteria in water exceeded the permissible values in Piłsudski Park and Źródliska Park. Analysis of sanitary indicators reveals the pollution of human origin in Piłsudski Park and Źródliska Park, while the human-animal origin in May 3rd Park.

Awareness of the air pollution: changing knowledge and attitudes among inhabitants of Wrocław

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Introduction

Air pollution is one of the biggest problem of today's world. The proper knowledge and attitudes should help in improvement of understanding, that protection of evironment and health policy have to be more targeted and effective.

Aim of study

The aim of this study was to assess the awareness and behaviors towards air pollution among inhabitants of Wrocław and evaluate how has it changed during the year.

Materials and methods

An online survey was filled out by 844 respondents (307 people in February 2016 and 537 February 2017). Personal information and questions concerning the knowledge, practices towards ambient air pollution and health were contained in questionnaire.

Results

28,3% of our responders, who answered in 2017 were men, 71,7% women. Average age was 25,2 years old. 47,1% got higher education. 23,4% of responders were students or graduated from the Medical University, 21,3% attended high school, 18,8% University of Technology. Group of respondends in 2017 was not statistically different from group who answered questionnaire in 2016.

33% of respondends assessed air quality in their place of residence as sufficient, 30%as bad, 16,9%very bad, almost the same said that air has good quality. Subjective evaluation of air quality worsened since the last year. Knowledge about main source and season whan air is mostly polluted has improved in comparison to the 2016.The vast majority of respondents (84,6%) felt, that air is mostly polluted in winter months, and for the most (57,4%) inapropiate heating of households is main source of air pollution. Nearly all of respondents agreed that smog has a bad impact on human health. 46% respondents felt that air has woresend since last year, for 38,3% it hasn't changed.

For the most respondents the best way to improve air quality in our region is to establish high fines for inapropiate heating of households. Implement more restrictive law for factories and electrical power and heating stations was also imortant, in almost the same degree as forbidding combustion

Internet was the primary source for obtaining knowledge about haze and it's impact on health in both years. For most respondents level of public information is not enough, although it has improved during the year. Education was the main factor associated with the level of knowledge about air pollution ($p < 0.05$).

Conclusion

Resident's knowledge about air pollution has improved in comparison to the year before. It is visibly stronger health protection awareness and enthusiasm for air pollution control among inhabitants of the Lower Silesia region. The less-educated residents are the targetable population for improving the environmental awareness.

The future of health care – mobile medical applications

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Introduction

Mobile applications (apps) are software programs that operate on smartphones and other mobile communication devices. Medical applications for smartphones are increasing in number of users and became commonly use in health care. The medical applications may help people manage their own health and promote health lifestyle. Health care applications are dedicated to patients, medical students and medical professionals. The development of medical apps could also improve health care and provide valuable health information. Despite of positive outcome in health care, common use of medical apps has some disadvantages. The growing number of mobile medical apps has drawn the attention of US Food and Drug Administration (FDA), which has started to control the health care apps.

Aim of study

The aim of the study is to analyze the development of mobile medical applications and illustrate their diversity in terms of healthcare topic, target audience and functions. The aim of the study is also to present a possible benefits and risks of health applications.

Materials and methods

International medical reports and articles were analyzed to assess the benefits and disadvantages of using smartphone's medical applications.

Results

The results of study shows a great diversity of medical applications. Health care applications, which are dedicated to medical professionals focus on disease diagnosis, drug reference, medical calculators, literature search and medical training. There are many applications containing educational material for medical students. The patient oriented health care applications help in chronic disease management and quality of life monitoring. Applications dedicated for health people focus on cancer prevention, health education, physical condition and eating habits. The main advantages of medical applications are improving health care, enhancing patient self-management and creating a health habits. The system of personal data storing, unclear instructions, reliability of applications are the possible risks of using health applications.

Conclusion

Many medical applications have been developed and used by medical professionals and patients. There are many advantages of using smartphones health apps in medical practice. However, the diversity of medical applications and enlarging number of users involve improving reliability and quality of health care mobile applications

Homosexuality orientation and its perception in the point of view of polish university students

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Introduction

Depression, suicidal ideation and attempts are more likely in the group of homosexual than heterosexual adults. This could be explained by the high level of emotional distress which could lie within stressors related to having a stigmatized identity among society.

Aim of study

The aim of the study was to characterize social factors contributing for homosexuality perception of students of Polish universities and to investigate the role of different variables of shaping their attitude towards otherness.

Materials and methods

The study covered 7438 students, (29,5% men) from different fields of study (mean age 22, age bracket 18-30). Research was founded on original questionnaire which consisted of questions that allowed to compare attitudes between various groups (based on gender, social and economic status, sexual orientation and religious beliefs).

Results

Higher rate of acceptance of homosexuality was found in the group of women (75,01% vs. 69,83%). Also, people who live in cities with more than 50 thousands inhabitants (76,10% vs. 70,77%), the group with bisexual orientation (95,55% vs.70,72% of group with heterosexual orientation) and the group that do not affiliate their religious beliefs on sexual life (80,33% vs. 59,59%) tend to have more tolerant attitude towards homosexual people. Grading of acceptance of homosexuality orientation, homosexual marriages and children adoption by homosexual couples has been observed.

Conclusion

The strongest factors contributing for homophobic attitude seems lie within religious beliefs and sexual orientation. Most of the students do not accept children adoption by people of homosexual orientation.

Frequency and pattern of cigarette and e-cigarette smoking among medical and non-medical students

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Introduction:

The electronic cigarette an "e-cigarette" gaining on popularity, especially among young people.

Aim of study

We sought to assess the prevalence of cigarette and e-cigarette smoking among students in Poland as well as analysis patterns of smoking and e-smoking.

Materials and methods

A population based survey was performed, in a group of 3800 students from three Universities in Katowice, Poland. The questionnaire, created for the purpose of the study, included questions on cigarette and e-cigarette smoking habits.

Results

Completed questionnaires were obtained from 3000 students aged 21.5±2.1 y-rs: 1380 medical (M) and 1620 non-medical (N-M) with the response rate 78.9%. Ever e-cigarette use declared 47.2% of respondents (41.5% M, 52% N-M; $p<0.001$). Traditional tobacco smoked regularly 15.1% (M:13.7%; N-M:16.2%; $p=0.001$), e-cigarettes 1.5% (M:1.2%; N-M:1.7%; $p=0.1$) and 2.1% (M:1.3%; N-M:2.7%; $p=0.007$) were dual smokers. The overall frequency of e-smokers was 2.5% among medical and 4.4% non-medical students ($p=0.005$). Only 4.5% (M:3.6%; N-M:5.3%; $p=0.02$) of respondents believed that e-smoking is safe for health and that opinion was shared by 30.5% of e-smokers and 3.6% of subjects who do not use e-cigarette ($p<0.0001$). Only 21.1% of e-smokers support e-smoking prohibition in public places, compared with 65% of those who do not smoke e-cigarettes ($p<0.0001$).

Conclusion

Non-medical students more often use both types of cigarettes compared to medical students. Almost one-third of e-smokers believes that e-cigarette is safe for health. Pattern and opinion about cigarette and e-cigarette use depends on education profile.

Mercy killing or assisted suicide? – individual opinion of euthanasia of Polish university students

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Introduction

As the palliative medicine is developing, we conquer the question of how long should we take action to postpone natural death. What is more, many of patients die prolonged and painful deaths, receiving unwanted, expensive, and invasive care. Regarding that euthanasia comes as an option for the patients in terminal state.

Aim of study

The aim of the study was to assess and compare perception of euthanasia in the groups based on gender, type of faculty and belief of students from Polish universities.

Materials and methods

In the study took part 9686 people (79,90% women and 20,10% men) in the age of 19 to 35. They were divided into medical (11,40%) and non-medical (88,60%) brand. They were asked to fill the original survey which consisted of questions about demographic and religion data and their attitude towards euthanasia.

Results

The acceptance of euthanasia in the terminal state of cancer is higher in the group of women (75,36% vs 67,8% of men, $p<0,000$), non-medical students (74,7% vs.67,12% of medical, $p<0,000$), non-believers (93,08% vs.58,14% of believers, $p<0,000$). In the situation of total paralysis acceptance is also higher in the group of women (55,39% vs. 51,46% of men, $p<0,000$), non-medical students (55,65% vs.46,47% of medical, $p<0,000$), non-believers (75,48% vs. 37,57%% of believers, $p<0,000$). The same pattern is observed in the case of personal situation of terminal state of cancer and total paralysis.

Conclusion

The strongest impact on individual perception of euthanasia lies within religious beliefs. The groups that showed the highest acceptance rate of euthanasia are women, non-medical students and non-believers. Majority of students accept euthanasia as possible option for people at the end of life.

The Ethics of future doctors - does it differ from general opinion of society? Study on abortion, in vitro fertilisation perception of medical students

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Introduction:

In vitro fertilization (IVF) as well as abortion are widely discussed social issues. Doctors as people who carry out certain medical procedure are directly involved in these subjects. Point of view of future medics may alter beliefs of these topics and therefore clinical implications.

Aim of study

The aim of the study was to assess attitude towards IVF and abortion of medical students from different Polish medical universities.

Materials and methods

There were 1219 medical students who participated in our research (69,57% women; 30,43% men) from 12 medical universities in Poland (age bracket 19-35). Research was founded on original questionnaire which consisted of questions comparing attitude towards IVF and abortion in regard with conscience clause, personal situations and legalisation. A pilot study covered 30 students from Medical University of Silesia.

Results

Higher number of students decided for gynecology specialization (95,45% vs. 88,58% not sure of their medical future) consider that in vitro fertilization should be legal in our country. Students rather stand for production of bigger quantity of (embryos 62,14%) of freezing them and their later adoption (60,27%) or their destruction (59%). Students are consistent in the terms of necessity of abortion at life-threatening (93,12%) or health-threatening (66,98%) situation of mother and in the case of lethal defects (85,06%) or severe defects (51,95%) of fetus. The situation of abortion after rape is acceptable by majority of students (73,85%) in contrary to very bad social situation (31,15%). Most of the future gynecologist are prepared for performing abortion at any situation.

Conclusion

Most of the medical students agree with usage of in vitro fertilisation method despite limitations concerning number of created embryos, their freezing and destruction. Students decided on specialization of gynecology are more likely to suggest and perform in vitro fertilisation. Future gynecologist are prepared for possible performing abortion in the case of fetus defects that are life- or health-threatening for mother or fetus or in the case of rape. Religious beliefs shows huge impact on disagreement for elaborated procedures.

Pregnancy termination - individual opinion of polish university students in regard with gender, religious beliefs and type of faculty

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Introduction

Among the 208 million women estimated to become pregnant each year worldwide, 41% (or 85 million) of pregnancies are unintended. The subject of pregnancy termination is one of the most controversial. The public opinion have never been measured in objective way as well as potential factors that may contribute for individual approach towards abortion.

Aim of study

The aim of the study was to assess attitude in different groups of students from Polish universities. towards pregnancy termination in every possible circumstances.

Materials and methods

There were 9686 people (79,90% women and 20,10% men) from different fields of study who took part in our research. We divide student into two groups: medical (11,40%) and non-medical (88,60%) branch of study. The questionnaire consisted of original questions which were first tested on a group of 30 students from Medical University of Silesia. Questions about attitude towards abortion in different situations (health problems' or threat to life, rape or social life) were involved in the survey.

Results

54,64% of non-medical students and 58,42% of medical students declare their Roman Catholic beliefs. Mean age of interviewee were 23 in group of men and 24 in group of women. 90,21% of women and 85,05% of men consider that abortion should be legal in the situation of threat to mother's life, while only 46,60% of women and 35,23% of men accept it in the hard financial situation of mother. In the group of medical students 93,12% stand for abortion in the threat of mother's life. Only 25,63% of medical students agree to abortion on the mother's demand. 89,61% of people who do not declare religion affiliation approve abortion in the situation of danger to mother's health in the comparison to 54,20% of students who are believers.

Conclusion

Mostly medical and non-medical students stand for abortion in the situation of threat to mother's life or mortal fetus defect as well as in the case of rape. Medical students and women accept abortion in this cases more often than non medical students and men. Less than half of interviewee students in two groups consider that abortion should be legal in hard financial situation of mother or on mother's demand. People who declare religion affiliation more often disagree to abortion even in the hardest cases like danger of mother's life or mortal fetus defect

PUBLIC HEALTH 2

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Incidence of type 1 diabetes in children in Lodz Province

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Introduction

Type 1 diabetes is a chronic autoimmune disease affecting children. Its prevalence has been reported to increase worldwide. There is a need for assessment of its incidence in Lodz Province to help shape local healthcare strategies.

Aim of study

The aim of the study was to investigate incidence rates of type 1 diabetes in pediatric population (0-14 years old) in years 2007-2016 in the Lodz Province in Poland and to compare the incidence rates of this disease by demographic factors.

Materials and methods

The data were collected from the prospective patient register of new cases of type 1 diabetes from referential tertiary centers of pediatric diabetology in the Lodz Province in Poland. Patient`s gender. age and habitation status were recorded. Diabetes diagnosis was defined as the first date of insulin administration. Demographical data were obtained from the Central Statistical Office of Poland.

Results

In the study period. there were 771 new cases of type 1 diabetes (including 414 boys and 480 urban-based children). Total incidence rate for 2007-2016 period was 21.71 cases per 100 000 children (CI95% 20.18 to 23.25). There was no significant difference between incidence rates for boys and girls [20.57 (18.43 to 22.72) vs 22.81 (20.61 to 25.02). p=0.1533]. Incidence in urban areas was higher than in rural areas [22.99 (20.93 to 25.05) vs 18.4 (15.85 to 20.22). p=0.0015]. Between the periods 2007-2011 and 2012-2016. incidence rate of type 1 diabetes increased with borderline significance [20.21 (18.13 to 22.29). vs 23.25 (20.98 to 25.51). p=0.0524].

Conclusion

The incidence rates of type 1 diabetes among pediatric patients show increasing tendency over the last ten years. Incidence rates are higher in urban areas than in rural. Diabetes epidemiology should be taken into account when planning healthcare strategies.

Amyotrophic lateral sclerosis - epidemiological descriptive study.

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Introduction

Amyotrophic lateral sclerosis (ALS) is a severe, progressive, degenerative motor neuron disease. The incidence of ALS is about 7 per 100,000 people and about 4-5 new cases per 100,000 people are reported each year. 5% of cases occur before 30 years of age, and before the age of 45 it is 10%. Patients aged 70+ are 20%. About 50% of patients die within 30 months of onset of symptoms, 15% to 20% of patients survive over 5 years, and only 10% it of patients live more than 10 years. Other data indicate that 25% of deaths occur in 2 years after diagnosis, 50% of patients live 3-4 years and only around 20% more than 10 years.

Aim of study

Carrying out epidemiological descriptive study of deaths and mortality of ALS is the first step in getting to know the profile of the Polish population of patients. The results of the study together with the data on morbidity will allow to better predict the needs of the public health sector.

Materials and methods

We used public demographic database for Poland published by Polish Central Statistical Office including years 2002-2013 - data on population status and deaths due to ALS are encoded according to ICD10 as G12.2. In analysis we used descriptive statistics and epidemiological indicators as: calculated per 100.000 mortality rate (MR), female/male mortality rate (F/Mm) and female/male death rate (F/Md). Indicators were calculated for the population during the analysed period, also for the 5-year age group, then by sex and residence. In paper we used graphs to illustrate findings.

Results

Between 2002-2013 in Poland, the average death rate for ALS was 281.5/year. During the analysed period, deaths trends were irregular until their high growth in 2012-2013 (max = 358 deaths). MR shows a similar but slightly increased trend. Mean F/Md (1.06) does not indicate the predominance of any sex, what was confirmed by the calculated MR (0.74=F; 0.75=M). Deaths were recorded in a wide range of patients age. Among women, 97% died in the 45-84 year old group and 96% of men passed away in the 40-84 years old group. Approximately half of female deaths were observed in 60-74 years-old group and accordingly in 55-69 years-old group for males. Maximum MR occurred in older age groups than maximum of deaths and their profile is slightly different in trend. 2/3 of deaths were recorded in the cities.

Conclusion

The profile of MR calculated among 5-year age groups is different than typical ones for old age diseases - MR after reaching its maximum, decreases with age. Difference between trend of deaths and MR (in age group) can be explained by the demographic profile of Poland – deaths occur more often in groups with numerous population (demographic peak). It can be assumed that the peak of deaths in age groups will continue to move towards the oldest groups until it reaches the MR fall. That can be explained by the demographic shift, with the aging population.

Epidemiology of deaths and mortality due to Alzheimer's disease in Poland 2002-2013.

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Introduction

Alzheimer's disease (AD) is incurable and the patients' lifespan varies between 5-15 years. The most often direct cause of death are secondary illnesses e.g. pneumonia and infections. A long duration of AD means many working hours in the health care system that increase the costs of providing care: indirect, direct.

Aim of study

Epidemiological descriptive study of deaths and mortality due to AD. Comparing obtained data with information from disease registries will significantly help improve knowledge about Polish population with AD.

Materials and methods

Demographic databases published by the Polish Central Statistical Office since 2002 to 2013, containing data on population status and deaths coded according to ICD10 as AD and subtypes: Early Onset (EOAD); Late Onset (LOAD); Other AD (OAD); Unspecified AD (UAD). Deaths were analysed using descriptive statistics and epidemiological indicators as mortality rate (MR) per 100,000 population, female/male death rate (F/Md) and female/male mortality rate (F/Mm) calculated over the years and among 5-year age groups for the general population, sex and by residence.

Results

In Poland, 2002-2013, the number of deaths due to AD increased 1.8 times. MR is characterized by a similar trend. The average F/Md is 2.16 while F/Mm 2.04. Between 2002 and 2006, average 93% of AD deaths are coded as UAD with maximum in 2006 (97%). Since 2006 there has been a systematic decline in the incidence of UAD deaths until 2011-2013, when the AD death rate has been stabilized at 78% - UAD, 10% - OAD, 9% - LOAD, 3% - EOAD (despite the further increase in the total number of deaths and MR). Among 5-year age groups, the first deaths are noticed in the age of 55-59, however, starting from 70-74 group occurs a dynamic increase with age. The MR is the highest among 85+ people and the highest number of deaths appears in the group of 80-84, then decrease with age. The exception is the EOAD in which the peak of deaths and MR are registered in the 70-74 age group after which a fall is recorded. Approximately 68% of deaths is noticed in cities and this percentage is constant. A similar tendency is demonstrated by the MR. There is no difference in the number of deaths between the village and the city according to sex.

Conclusion

The increase in the number of deaths may be due to the baby boom entering the oldest age group. Reasons for the increase of MR should be seek, i.a. in more accurate filling of deaths cards, increased morbidity or improved diagnostics. The latter can be the main reason for the decline in deaths due to UAD. On the other hand, decreases in deaths and MR among younger age groups may be the result of improved medical care that reflects the prolonged lifespan with the disease. Assuming that the disease affects both sexes equally the explanation of higher F/Md and F/Mm, can be greater mortality among AD male patients due to other diseases e.g. cardiovascular disease and cancer.

Prevalence and clinical patterns of allergic diseases among elderly people attending the third age university

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Introduction

Allergic diseases have been reported not to be less frequent among elderly population as compared to younger subjects, but many allergic conditions seem to be underdiagnosed. Although allergic diseases can significantly deteriorate quality of life in the elderly, the epidemiological data, especially in case of food and drug hypersensitivity reactions have not been well studied.

Aim of study

To assess the prevalence of allergic diseases including asthma, rhinitis, atopic dermatitis, drug hypersensitivity and food hypersensitivity reactions among the elderly people attending the third age university.

Materials and methods

The study questionnaire was distributed among 200 individualsaged over 60 years who attended the Academy of Healthy Ageing (3rd age university courses), one of the initiatives of the Healthy Ageing Research Centre. Thequestionnaire was based on questionnaire previously used in the European Community Respiratory Health Survey (ECRHS) and included also questions on the history and clinical spectrum of drug and food hypersensitivity reactions. The study protocol was reviewed and approved by the Local Bioethics Committeeand informed consent was obtained from all participants.

Results

By the time of abstract submission 81 patients returned questionnaires (73 women and 8 men, the mean age was 70.2±6.4). The prevalence of physician diagnosed asthma was 18.5%, and the majority of asthmatics (86.7%) received current treatment. The prevalences of physician-diagnosed rhinitis and atopic dermatitis were 19.8% and 13.6%, respectively. Drug-induced hypersensitivity reactions were reported by 28.4% of participants, but only in 2.5% subjects drug allergy was diagnosed by physician. The most common drugs causing the reaction were antibiotics (45%) and 2.5% of patients reported severe reactions requiring hospitalization. Similarly, 29.6% of participants reported food hypersensitivity reaction, but physician-diagnosed food allergy was reported by only 3.7% of participants.

Conclusion

These preliminary results show high prevalences of allergic diseases and hypersensitivity reactions among elderly subjects. Large majority proportion of patients with drug and food hypersensitivity reactions has not been referred to allergologists. Underdiagnosis of allergic reactions could potentially lead to unintended re-exposure to the culprit drug or food and to unnecessary "avoidance strategy", resulting in more expensive and ineffective treatment.

Knowledge, attitudes and behavior regarding antibiotics use and misuse among adults in the community of Poland

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Introduction

Antibiotics are perceived as strong, effective drugs, but they are believed to be undermine immunity. Moreover they cannot cure everything. Antibiotics do not work against illnesses that are caused by a virus. They do not help to cure common cold, flu or runny nose. There are many types of antibiotics. Each works a little differently and acts on different types of bacteria. Their mechanism of action is based on killing or inhibiting the growth of bacteria, by influencing its metabolism.

Aim of study

Analysis of the dependence between the knowledge and the risk of mistakes and the occurrence of side effects in the use of antibiotics among adults in Poland.

Materials and methods

The research group consisted of 346 people aged 18-64, including 208 K and 138 M. All of the respondents completed online questionnaire, which included the mechanisms of action, treatment regimens and side effects of antibiotics. Statistical analysis correlated the knowledge of patients with abnormal antibiotic use and the occurrence of adverse reactions.

Results

20% of the surveyed re-use the previously prescribed antibiotic without a medical visit.18% of the respondents do not sip antibiotics with water and 24% of people have consumed alcohol during treatment, 98% of them were men. 58% of people admitted to break the antibiotic treatment, while 92% do so after the resolution of symptoms. 57% of the respondents think that antibiotics are used to treat flu and colds. 27% of the respondents happened to ask the doctor for an antibiotic just in case.

Conclusion

The study showed that the level of knowledge is still not sufficient. Antibiotics are often misused and patients decide on using them as a self-treatment without consulting the doctor.Coordinated efforts to educate health care professionals, campaigns against self-medication, stricter rules for drug sales and advertising, and restricted use of certain antibiotics may contribute to rational antibiotic use among Polish people

Knowledge and opinions of pharmacists about generic and biosimilar drug substitution

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Introduction

Polish law obliges the pharmacist to inform the patient about the possibility of purchasing a cheaper replacement drug with the same INN name. The process of automatic drug substitution at the pharmacy level takes place without knowledge of the prescribing doctor. Unlike in most EU countries in Poland automatic drug substitution is not restricted to small molecule drugs and their generics but also applies to biologics and biosimilars. Compared to small molecule drugs that consist of chemically identical active ingredients, biologic drugs are vastly more complex. Although biologics are recognized as generally safe, potential risks associated with automatic drug substitution of original products with biosimilars include immunogenicity and interference with the obligatory long-term pharmacovigilance programs.

Aim of study

The aim of the study was to assess the opinions of the pharmacists on the automatic drug substitution of different classes of medicines at the pharmacy level.

Materials and methods

A self-designed, web-based survey https://zamianalekow.webankieta.pl/ was conducted among pharmacists and pharmacy technicians not affiliated to hospitals. Questions addressed the professional experience, knowledge and opinions of pharmacists about generic and biosimilar drug substitution.

Results

260 pharmacy employees from 4 voivodships in Poland took part in the survey. 227 had a master degree in pharmacy and 33 were pharmacy technicians. Among the survey responders, as much as 58.1% were not familiar with the issue of biosimilars. Only 9.1% of pharmacy technicians and 46.8% pharmacists had in their opinion a considerable knowledge about biosimilars.

The responders pointed out 3 main reasons for automatic drug substitution: the cost of prescribed medicine, patient request, and lack of the reference drug in the pharmacy. Most commonly substituted drug classes were antihypertensive, lipid-lowering, proton pump inhibitors and antibiotics. 74.3% of pharmacists would not offer a substitution to the patients after organ transplantation or requiring immunosuppressive therapy. Among the responders 63.6% believed that the substitution must never occur for the medicines acting on central nervous system, 84.7% had the same approach to anticonvulsive drugs, 46.7% to antiarrhythmic and 85.8% to any immunosuppressive drug.

The greatest differences in opinions were noted with respect to the regulations on generics of small molecule drugs and biosimilars to original biologic drugs. 43.6% of pharmacists claimed that the substitution of generics and biosimilars should have the same regulations and 17.2% have no opinion about that.

Conclusion

The main reason for automatic drug substitution at pharmacy level is the cost of prescribed medicines. Pharmacists are aware that automatic drug substitution carries a certain risk, but they are not familiar with the possible risks associated with biological drug substitution

Assessment of knowledge among reproductive-age women in Poland regarding infectious diseases during pregnancy and their outcome

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Introduction

Infections during pregnancy are major causes of maternal and fetal morbidity and mortality. Taking into consideration the growing number of anti-vaccine movements, the issue appears to matter even more. The group of most frequent pathogens includes the rubella virus, the varicella-zoster virus and *Toxoplasma gondii* which preventive methods are available.

Aim of study

The aim of this study was to assess the level of knowledge about infections during pregnancy and their consequences in the group of reproductive-age women in Poland.

Materials and methods

Between January 17 and March 19, 2017, we conducted an authorial online survey designed for reproductive-age women. The questionnaire comprised five questions appertaining to demographics, three focused on actions taken by women in terms of prevention and eight intended for evaluation of the respondents' knowledge about three infectious diseases: rubella, varicella and toxoplasmosis, as well as their possible impact on the course of pregnancy and following consequences. Additionally, survey responses were assigned scores ranging from 0 to 8, reflecting the number of correct answers. Statistical calculations were performed using Statistica v12 and Microsoft Excel.

Results

A total of 267 surveys were included in the analysis. The mean score of correct answers was 4.96. Our analysis showed that inhabitants of cities with the population exceeding 200,000 achieved significantly better scores (U Mann-Whitney test, $p<0.01$), with the mean of 5.20, as compared to those living in the countryside or smaller cities, 4.52 respectively. Furthermore, those who obtained higher education and those studying at a university got considerably higher scores (U Mann-Whitney test, $p<0.05$), with the mean of 5.09, while the mean score of less educated respondents was 4.09. No correlation was found between the experience of ever being pregnant and the obtained score. Our evaluation revealed that the group who graded their knowledge as 1–2 (on a scale of 1 to 5) reached statistically lower scores (U Mann-Whitney test, $p<0.001$), with the mean of 3.86, while those whose self-assessment fell within the 3–5 range gained higher scores (mean, 5.32). 56.60 % of the respondents selected the answer stating that there was no possibility to develop the rubella virus infection more than once in a lifetime.

Conclusion

Our assessment shows that the level of knowledge concerning infections during pregnancy is insufficient. Furthermore, the educational status and the place of residence appear to affect the women's awareness, whereas the experience of ever being pregnant does not seem to be an important factor. It is, therefore, crucial to spread the knowledge about methods of prevention and possible outcomes of infectious diseases during pregnancy, especially among the reproductive-age women.

Evaluation of accessibilities for people with disability in primary care units in Opole

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Introduction

According to World Health Organization(WHO) disability is any condition of the body or mind (impairment) that makes it more difficult for the person with the condition to do certain activities and interact with the world around them. People with disabilities have the same health needs as non-disabled people. Furthermore they also may experience additional health problems, both because of poverty and social exclusion, and also because they might be vulnerable to secondary conditions, such as urinary tract infections. In Wroclaw, there are more than eighty-five thousand disabled people. In many cases, they are unable to access public healthcare services buildings, because of the lack of parking areas, automatic entrances, elevators adapted to wheelchairs or accessible corridors.

Aim of study

The study was aimed to evaluate functional access to primary care units in Opole for persons with disabilities.

Materials and methods

We analyzed 58 primary care units in Wroclaw and their accessibilities for disabled persons, especially wheelchair users and people with limited walking abilities, including: ramps, elevators, automatic doors, restrooms, wheelchairs and corridors. The number of disabled people in Poland is 4.7 million, which accounts for 12.2% of the country's population. In the district of Opole is together more than 13,000 people with disabilities.

Results

Restroom for disabled was present in 65% of cases. Wheelchairs were available in 52% of primary care units. Corridors and elevators were adapted for physically impaired persons in 79% and 24% of assessed units respectively. Automatic doors were present in only 10% of evaluated places. Ramps were present in 69 % of cases. 19 % of primary care units had 5 or more of evaluated accessibilities.

Conclusion

A significant number of primary care units in Opole is not adapted to the needs of people with disabilities. These people, due to their state of health, are more likely to need health care and still face many difficulties in accessing primary care physicians

Crimes against sexual freedom in 2010-2016 based on material from Department of Forensic Medicine Medical University of Lodz

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Introduction

Crimes against sexual freedom in Poland subject to prosecution are listed in art. 197-200 of the Criminal Code. The reportability of crimes against sexual freedom is not known, but the literature suggests that in many cases law enforcement agencies are not notified.

Aim of study

Rating forensic medical opinions issued by the doctors of the Medical University of Lodz Department of Forensic Medicine in terms of age, sex, knowledge of the perpetrator, place of the incident, injuries including those located in the genital area, the time elapsed between the incident and the examination, the type of intercourse or another sexual act. Comparison of the results with other publications concerning the same issue, for example paper from Department of Forensic Medicine Collegium Medicum in Bydgoszcz (Forensic medical examinations conducted on complainants of sexual assault in the Forensic Medicine Institute, Collegium Medicum in Bydgoszcz, Nicolaus Copernicus University in Torun, between 2006 and 2013. Archives of Forensic Medicine and Criminology 2014; 64 (3): 137–146).

Materials and methods

A descriptive study of medico-legal opinions of the years 2010-2016, issued by the Medical University of Lodz Department of Forensic Medicine, involving the cases where crimes against sexual freedom of the persons with decision for research from law enforcement agencies – prosecutors Office or Police.

Results

We analyzed medico-legal opinions issued at the Department of Forensic Medicine, Medical University of Lodz in 2010-2016. There were 42 cases in which committing crimes against sexual freedom was suspected. In 95% of cases they were reported by women, and in 5% by men. Most victims reported the crime later than 48 hours, but within 7 days after the event. In 14% of cases they were persons under 15 years of age. The predominant age groups were 11-20 and 21-30 years, the fewest cases were recorded in the 51-70 and 0-10 age groups. The injuries suffered by the victims in most cases resulted in an impairment of a bodily organ function for a period no longer than 7 days.

Conclusion

Rape is a significant social problem, whose victims are mostly women. Both Polish government agencies and international institutions deal with the issue of crimes against sexual freedom. There are indications that a significant proportion of crimes against sexual freedom is not reported to law enforcement, therefore, the activities of State and non-governmental organizations, aimed at informing the public about their rights, should be emphasized.

Premature mortality due to malignant neoplasms of the digestive system in Poland in 2000-2014

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Introduction

Malignant neoplasms are the second most common cause of death in Polish populations, following diseases of the cardiovascular system.

Recently, the increasing incidence of malignant tumors is observed in Poland, but this trend is also present in other European countries. In 2000 in Poland it was 300.3 cases of malignant neoplasms per 100,000 inhabitants and in 2013 it was already 411.5, while the average for EU was 448.6 and 556.0, respectively.

On the other hand, mortality rates due to these diseases are improving- in 2000 it was 217.3 per 100,000 Poles and in 2013 it was 187.6. However, these numbers exceeded the average for EU (188.4 in 2000 and 162.9 in 2013), what is of a concern.

The highest share in mortality due to malignant tumors in Poland have neoplasms of the lungs, followed by colorectal cancers. Among most frequent malignant tumors are also other neoplasms of the digestive system, i.e. tumors of stomach or pancreas.

To assess the socio-economic aspects of mortality, besides the ratios used conventionally, it has become increasingly common to apply potential measures, like SEYLL (*Standard Expected Years of Life Lost*).

Aim of study

Analysis of years of life lost due to premature mortality caused by malignant neoplasms of the digestive system in Poland in 2000-2014.

Materials and methods

The study was based on a dataset containing information from 5,601,568 death certificates of Polish residents who died between 2000-2014. The data on deaths caused by malignant tumors of the digestive system (C15-C26 according to ICD-10) were used for the analysis. The SEYLL was used to assess lost life years.

The study was financed by Medical University of Lodz (503/6-029-07/503-61-001).

Results

In 2000-2014 cancers of the digestive system were the cause of 390,685 deaths of Poles, accounting for 28.6% of all deaths due to malignant neoplasm in the analyzed time. In the group of men there were 213,041 deaths, which resulted in 4,407,302.2 lost life years (158.6 per 10,000 males), and in the group of women there were 177,644 deaths, which caused 3,121,385.1 lost life years (105.3 per 10,000 females). A man who died due to malignant neoplasm of the digestive system over the studied period lost on average 20.7 years, and a woman 17.6 years.

The highest number of lost life years due to studied diseases was noted for malignant neoplasm of the colon (30.9 per 10,000 inhabitants), and the lowest for malignant neoplasm of the small intestine (0.8 per 10,000 inhabitants).

Over the analyzed time, for neoplasm of the colon the increasing trend of lost life years per person was observed. On the other hand, the trend was on the decrease for tumors situated in anus and anal canal. It was also declining for stomach and for liver.

Conclusions

Malignant neoplasms of the digestive system are among the biggest health problems in the Polish population. SEYLL provides accurate data on premature mortality due to these diseases.

The impact of gynecological cancer treatment on self-esteem and sexual life

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Introduction

One of the most fundamental and long-term aspects of life after cancer treatment is a sexual health. The prevalence of sexual dysfunctions after oncological treatment range 40-100%. Disorders of sexual response (e.g. reduced lubrications, dyspareunia, orgasmic dysfunction) and disorders of desire and motivation are the most common problems for female oncological patients. The treatment of gynecological cancer may result in sexual health issues of pain, loss of sensation, vaginal dryness, difficulty in reaching orgasms. Moreover, female patients report the changes in their feelings of femininity, mood, self-esteem and sexuality.

Aim of study

The aim of the study is to assess a self-esteem and sexual life of women treated for endometrial and cervix uterine cancer.

Materials and Methods

Study group included 39 women who underwent oncological treatment (surgery and/or radiotherapy and/or systemic treatment) in Lower Silesian Oncology Center. The patients were diagnosed of endometrial cancer (20) and cervix uterine cancer (19), mean age in investigated group was 54 (± 10,9). Sexual health was assessed with the use of quality of life questionnaire.

Results

18 of questioned patients felt less attractive and 27 assessed their feelings of femininity as "low". 25 women resumed sexual intercourse, difficulty in climax occurred in 7 patients. In analyzed group of patients pain during sexual intercourse was present in 15 women.

Conclusion

Patients treated for gynecological cancers requires a multidimensional and holistic approach, sexual health is an integral and vital part of their life. Therefore it shouldn't be omitted during deciding on most appropriate treatment method.

A chance for reproduction - in vitro fertilisation in the eyes of Polish university students - do we really know public opinion?

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Introduction

Rather than a medical issue, infertility is seen as a developmental crisis, stressful situation and personal tragedy experienced not only by couples but also by individuals. In vitro fertilization is one of the possible option to realize wish of having a children. This matter is widely discussed by polish society and brings a lot of controversial opinions.

Aim of study

The aim of the study was to asses and characterized differences in perception of in vitro fertilisation in the groups based on gender, religious beliefs and type of faculty between students from Polish universities.

Materials and methods

9686 students took part in our survey (79,90% women and 20,10% men) in the age bracket 19-35. They were asked to fill the original questionnaire which consisted questions including their personal and demographic data as well as their attitude towards in vitro fertilization. Students were divided into two groups: medical (11,40%) and non-medical (88,60%). A pilot study were conducted on a group of 30 students from Medical University of Silesia.

Results

54,64% of non-medical students and 58,42% of medical students declare their Roman Catholic beliefs. 89,11% women and 80,74% men consider that IVF should be legal in our country. 70,60% of women and 61,33% of men claim that they would consider this method of therapy in case of own infertility. In the group of medical and non-medical students essential differences in the field of in vitro fertilization, their legality and refundation were not observed. In the group of Roman Catholics only 56,90% would carry out this medical procedure in comparison to 83,25% of students who are not Roman Catholics.

Conclusion

Most of the students think that in vitro fertilization should not be legally prohibited. Many of them would consider this kind of medical procedure in case if they have problems with infertility. In the group of students who declare religion affiliation method of in vitro fertilization is less admissible than in the group of non-believers. Women are more tolerant than men in the field of this infertility medical therapy

The evaluation of dialysed patients opinions on usage of eHealth technologies as a source of medical information

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Introduction

With the usage of modern technologies (eg. smartphones, tablets, laptops) patients may monitor the level of their physical activity or follow their dietary regimen. Mobile devices might be tools to monitoring the progress of exercises and reaching an established goal. However, at the same time patients might be vulnerable to unverified, false and harmful information found on the Internet concerning their health and conditions.

Aim of study

The aim of this study was to determine the dialysed patients opinions on modern methods of access to health-related information, including mobile technologies and eHealth and on usage of these to increase patients compliance and physical activity.

Materials and methods

The study was performed with author's proprietary survey. The survey was performed as required in Declaration of Helsinki by the patient's bed. Participants were recruited in nephrology departments in Lodz, Poland.

Results

The study group consisted of 85 dialysed patients whose mean age was 67,7 (SD-14,1). The mean time of patients dialysis therapy was 3 years (min. 3 moths, max. 14 years). Only four participants (4,9%) had a renal transplant.

From the study group 79,9% claimed to usage of mobile devices (12,9% had 4 devices, , 4,7% - 3, 23,5% - 2 and 38,8% -1). From them 42% have access to the Internet, 27,8% use it every few hours and 30,6 once a day. From the ones that do not use the Internet on their own, 55% have access to it with help of relatives living with them. Most of the patients (69,4%) having access to the Internet did not confirm searching medical information on-line, but 33% of them asks their family members to do so for them. Only 17,6% of those who use the Internet directly or indirectly rates the on-line found health related information as credible and might use it without medical consultation. One-fifth of the participants search for medical information before a visit to a doctor and 26% verifies on-line the information acquired from a doctor. Most of the patients (88%) see themselves as well complying. Only 18,8% of survey participants agreed to using a mobile application to monitor their diet or physical activity.

Conclusion

Most of the dialysed patients in the study have access to mobile technologies, but only 42% of them claim to have access to the Internet. Some of them search for health-related information on-line but they tend to doubt its credibility. This group of patients does not seem interested in usage of modern technologies to monitor their health

Should we recommend e-cigarette as an effective tool in smoking cessation?

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Introduction

E-cigarette is advertised as an effective tool in smoking cessation, however available evidences regarding it are inconsistent.

Aim of study

The aim of the study was to assess the role of e-cigarette use as a tool to quit or reduce smoking.

Materials and methods

A population based survey was performed, in a group of 3800 students from three Universities in Katowice. Self-prepared, previously validated questionnaire, included questions on e-cigarette smoking habits.

Results

Completed questionnaires were obtained from 3000 students (response rate 78.9%; mean age=21.5±2.1 y-rs) of which 70% were female (F) and 30% were male (M). E-smoking was declared by 3.5% of respondents (F:3%, M:4.9%; p=0.01), wherein 1.5% of respondents smoked e-cigarettes only (F:1.3%; M:1.8%; p=0.3) and 2.4% of subjects were dual smokers (F:1.6%; M:3%; p=0.01). Almost one-third (33.7%) of e-smokers used e-cigarettes as an aid to quit smoking. Only 13.8% of e-smokers tired to give up e-smoking. Almost half of e-smokers (48.8%) tends to give up e-smoking in the nearest future. Reduction in cigarette consumption (mean 6.5±5.0 cigarettes/daily) was observed by 50.8% of dual smokers. Non-nicotine e-liquids were used by 4.4% of e-smokes. Since they started e-smoking, constant concentration of nicotine in e-liquid was indicated by 61.4% of e-smokers, 12.5% increased (mean 8.7±5.1 mg/ml) and 26.1% reduced (mean 8.2±3.5 mg/ml) nicotine content in usually used e-liquid. Among e-smokers, 48.8% reported an addiction to e-cigarettes.

Conclusion

Smoking cessation was not the main reason for e-cigarette use among most of e-smokers. Low percent of e-smokers who use a non-nicotine e-liquid and almost half of e-smokers who declared addiction to e-cigarette, suggests that e-cigarette is rather an additional source of nicotine than effective tool in smoking cessation.

The influence of medicolegal autopsy reports in judicial proceeding in cases of deaths caused by deliberate action of the perpetrator

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Introduction

Murders, fatal beatings and intentionally inflicted injuries with fatal outcome are examples of deaths caused by deliberate action of the perpetrator. A murder is a crime involving deprivation of human life. In case of a fight or a fatal beating, as well as intentionally inflicted injuries with fatal consequences, we do not deal with a murder because the fatal result is unintentional.

In crimes against life it is of most importance to carefully analyze the evidence in order to find the truth hiding behind them. Medicolegal autopsy is one of the procedure that is implemented to get information about the victim's death and about circumstances in which death has occurred.

Aim of study

The aim of the study was to analyze the influence of medicolegal autopsy reports as well as to evaluate the opinions presented by the court appointed experts in cases which death was caused by the deliberate action of the perpetrator.

Materials and methods

For the purpose of the study, all autopsy reports prepared by the Department of Forensic Medicine at the Medical University of Lodz in the years 2007-2012 were analyzed. The cases in which the results of the autopsy clearly indicated deaths due to murders or fatal beatings were identified. Thirty cases were selected for further in-depth analysis. A Relevant courts and prosecutors' offices were asked for the complete case files.

Results

While studying the case files , it was noted that male victims were predominant. Death of the victims most often occurred at the site of the incident – mostly in victim's flat. The most frequent causes of death included: stabbing wounds of the chest, strangulation and blunt head trauma . Suspect was most often known to the victim – it was a family member or the person who was living with the victim in a concubinage. It has been noted that the defendants were charged most often under Art.148 and 156 of the Penal Code.

Conclusion

Medicolegal autopsy is a necessary procedure in cases of crimes against life. The evidence delivered with its help is an important element which often can determine the outcome of the court trial.

SURGERY 1

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Portal vein D-dimers concentration as a prognostic factor of overall survival time in the pancreatic adenocarcinoma: a single center prospective study

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Introduction

Pancreatic ductal adenocarcinoma (PDAC) is a highly lethal disease with a 5-year survival rate around 5%.As pancreatic cancer is not diagnosed until it reaches an advanced stage, major part of the patients are disqualified from potentially curative resection.Recently performed studies have proved that D-dimer level (DD) is a strong prognostic factor of patients' survival.

Aim of study

The aim of the present study was to investigate the possible associations between DD level in the portal vein and survival time in patients with PDAC.

Materials and methods

We performed a single centre prospective study. We enrolled 62 patients operated on due to pancreatic cancer. We collected blood samples from portal vain and peripheral blood intraoperatively and measured the levels of standard biomarkers: Ca125, Ca19-9, Ca15-3 and D-dimers. The statistical analysis was performed using Kaplan- Meier survival model and Cox regression model.

Results

The study group consisted of 62 patients (mean age: 63 +/- 7; Male: 37 Female: 24). Their median time of survival (OS) was 7mo 25d.

The analysis of survival in the Kaplan-Meier model showed that portal DD>= 2700 ng/microL was a significant prognostic factor (DD portal=2700- 13mo 26d p=0,05). CA19-9 >= 200 IU/mL, Ca125 >=20 IU/mL and Ca15-3 >= 24 IU/mL had a statistically significant impact on the patients' prognosis:
(CA19-9=200- 5mo 8d p=0,009),
(Ca125=20- 4mo 17d p=0,022) and
(Ca15-3=24- 5mo 8d p=0,038).

The multivariate analysis in the Cox regression model showed that portal DD >=2700 ng/microL (HR: 0,359 95%CI 0,182-0,708p=0,003) and Ca15-3 >= 24 IU/mL (HR: 2,33 95%CI 1,23- 4,42 p= 0,009)remained the significant prognostic factors of the survival time.

Conclusion

Our study indicates that pre-treatment portal vein DD level is associated with the overall survival time. In the future it may be used as a significant prognostic factor among patients with PDAC.

Extremely rare life-threating complication of acute pancreatitis

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Introduction

Acute pancreatitis (AP) is a potentially life-threatening condition with unpredictable evolution. Extremely rare AP co-exists with abdominal aortic aneurysm (AAA). It is estimated that among gastroenterological complications associated with ruptured abdominal aortic aneurysm (rAAA) AP occurs in 0.7% and significantly increases the mortality rate. Both, AP and rAAA are risk factors for developing serious infections and abdominal compartment syndrome (ACS).

Case Report

We report a case of 65-year man with severe AP complicated by rupture of AAA, which was treated by open abdomen (OA) with application of negative pressure wound therapy (NPWT). The patient was diagnosed with AP based on typical ultrasound and laboratory findings. During the 4th day of hospitalization, the patient's condition deteriorated, epigastric pain had intensified, and clinical symptoms of the hypovolemic shock occurred. Computed tomography angiography indicated ruptured AAA (rAAA). Emergency surgery of rAAA was performed. Immediately, after surgery the negative pressure wound therapy was founded into abdominal wall. The duration of NPWT was 30 hours. Good results of AP treatment were achieved and it was no presence of acute compartment syndrome or other complications. The patient was discharged in good general condition on the 14th day home. During 6-month follow-up there was no evidence of clinical or radiological symptoms of prosthesis infection.

Conclusion

rAAA caused severe AP is extremely rare but life-threatening condition and requires prompt and accurate diagnosis. Application of NPWT in OA therapy allowed to improve control and effectiveness of removing fluid from abdominal cavity and thereby to prevent development of direct IAH and ACS. NPWT also helped in initial rapid closure of the surgical wound and, in protection against intraabdominal infection

Classical operation or laparscopy? Comparison of Hem-o-lock usage and classical appendectomy method

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Introduction

Appendectomy is one of the most popular surgical procedure in the world. Over the years and with technological advancement, laparoscopic surgery has become more common by using for example polymeric clips Hem-o-lok type.

Aim of study

Presentation of the laparoscopic appendectomy method with using the Hem-o-lok clip. Comparison of the efficacy, early and late surgical complications between classic operation and laparoscopy with Hem-o-lok using.

Materials and methods

The study included 60 patients with appendicitis treated at the Department of Thoracic Surgery, General Surgery and Oncology. 29 of them were operated with classical operation method and 31 with (usage laparoscopy containing Hem-o-lok clip. The research tool was retrospective data analysis from patients' medical histories.

Results

Among the analyzed data the average hospitalization time was 2,61 days for laparoscopy and 2,79 for classic operation. The amount of early postoperative complications was 21% for the classic method and 0% for the laparoscopy. The number of postoperative visits for laparoscopic surgery was significantly lower (average 1,29) in comparison to the classical method (average 5,48). None of the patients required re-operation.

Conclusion

It has been shown that the average hospitalization time was approximately 2,7 days, which was mainly caused by the economic factor. Number of laparoscopic early complications was slightly lower compared with the classical operation. However, the number of late complications based on the visits in surgical clinic was significantly lower, which indicates a beneficial effects and suggests the use of Hem-o-lok type clips during the laparoscopy.

Surgical treatment of large iliac artery aneurysm in patient with comorbidities

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Introduction

Most of iliac artery aneurysms (IAA) occur in the common iliac artery. Solitary IAAs are very rare, more often they coexist with abdominal aortic aneurysm. Because a propensity for life-threatening rupture depends on diameter increases, patients with IAAs should be referred for vascular evaluation and repair if need.

Case Report

An 67-year-old male with multiple comorbidities was admitted to the hospital due to presence of rest pain in left lower limb, radiating from the groin to the ankle, that increased in last three weeks. Past medical history: type 2 diabetes, arterial hypertension, permanent atrial fibrillation, chronic obstructive pulmonary disease, ischemic heart disease, renal and prostatic cancer, 45 pack-year smoking history, status post resection of right external iliac and femoral artery aneurysm with prosthesis implantation. Physical examination on admission: patient in fair general condition with immobile, painless mass in left lower abdomen without pulsation, anaemia in blood test. The angio-CT scan showed abdominal aorta dilatation up to 33 mm and multiple bilateral aneurysms, including enormous (195 mm in diameter) left external iliac artery aneurysm with parietally blood clots, filling the area of left lower abdomen, causes the displacement of the aorta to the right side. The aneurysm also includes left femoral artery. The perioperative risk of death assessed by P-Possum score was 25,5%. After the optimization of the treatment of comorbidities, the aneurysmectomy of left external iliac artery with implantation of the prosthesis was performed. The hospitalization was prolonged due to wound infection (Acinetobacter baumannii) treated successfully with antibiotics. The patient was discharged in good condition with healed wounds.

Conclusion

Typically unruptured aneurysms of abdomen and pelvis arteries may remain completely asymptomatic or the symptoms may be uncharacteristic unless they become large, therefore it is essential to screen patients at risk for aneurysm especially similar to our patient – white, old males with multiple atherosclerosis risk factors and conduct regular reexamination in patients with aneurysm in anamnesis.

Is watchful waiting the best strategy for all elderly patients with inguinal hernias?

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Introduction

The European Hernia Society recommends watchful waiting strategy, especially for older patients or those with major comorbidities. However, inguinal hernia incarceration is associated with significant morbidity in this group.

Aim of study

The aim of the study was to find a group of patients that could benefit from elective hernia repair rather than watchful waiting strategy.

Materials and methods

A total of 488 patients aged 60 and older undergoing inguinal hernia repair at the Department of General and Colorectal Surgery, Medical University of Lodz between 2006 and 2016 were involved in our study. We analyzed information about patients including age, medical history, mode of admission, comorbidities, type of intervention, applied anaesthesia and 30-day surgical outcomes.

Results

Out of 488 included patients, 46 (9,4%) underwent emergency and 442 (90,6%) elective surgery. Complications developed in 47 (9,6%) (20 in elective and 27 in emergency group). Multivariate logistic regression revealed that factors significantly associated with the development of the complications were emergency operation (OR=22,9; 95%CI [10,5-49,8]; p<0,001) and Charlson Age-Comorbidity Index (CACI) (OR=1,41; 95%CI [1,2-1,7]; p<0,001). According to ROC curve analysis, CACI appeared to be the most adequate predictor of the occurrence of complications after emergency surgery for inguinal hernia (AUC=0,837; p<0,001). The best cutoff point with maximal Youden Index was 5 (78% sensitivity and 84% specificity). Among the patients with Charlson score of 5 and above, an emergency surgery significantly increases the risk of complication development (OR=92,6; 95%CI [23,1-370,3]; p<0,001). There was no association found between higher CACI score and presence of complications in the elective surgery group (p=0,187).

Conclusion

Results of our study suggest that elective inguinal hernia repair should be taken into consideration in elderly patients, especially those with Charlson Age-Comorbidity Index of 5 and above. Among patients with comorbidities, urgent surgery significantly increases morbidity, whereas elective surgery results in fewer complications. Avoiding the necessity of emergency surgery seems to be more effective than watchful waiting in prevention of postoperative complications in this group.

Elevated levels of CA19-9 and Ca125 predicts overall survival time in the pancreatic adenocarcinoma

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Introduction

Pancreatic cancer (PDAC) is the fourth cause of cancer-related death worldwide. Its late manifestation and aggressiveness are associated with a very low rate of survival. What is more, the length of survival and the frequency of recurrence of pancreatic adenocarcinoma varies significantly regardless of the treatment.

Although many studies have demonstrated the association between elevated levels of biomarkers such as Ca 19-9, CEA, Ca125 and PDAC, there is no consensus on their utility.

Aim of study

The aim was to investigate whether pre-treatment levels of cancer biomarkers can be adopted as prognostic factors of PDAC patients' overall survival (OS).

Materials and methods

We retrospectively analysed the data concerning patients admitted to our Department due to the initial treatment of PDAC. We identified 129 eligible patients, as they had a full pre-treatment panel of biomarkers assessed. The patients' OS was measured from the date of admission. The statistical analysis was performed in Kaplan-Meier survival model and Cox regression model.

Results

The study group consisted of 129 patients (men: 81; female: 48). The patients mean age was 62 +/- 9,5 years, while the median OS was 7mo 12d.

In the age-adjusted Kaplan-Meier analysis, Ca125 >= 20IU/mL was a significant prognostic factor ($Ca125_{<20}$ median OS- 10mo 3d vs. $Ca120_{>=20}$- 4mo 17d p=0,001).

Similarly CA19-9 >= 200 IU/mL had a statistically significant impact on the patients' prognosis ($CA19\text{-}9_{<200}$ median OS- 8mo 3d vs. $CA19\text{-}9_{>=200}$- 4mo 20d p=0,001).

Multivariate analysis in the Cox regression model demonstrated that factors such as Ca125>=20 (HR: 1,79 95%CI 1,21-2,66 p=0,004) CA19-9>=200 (HR: 1,79 95%CI 1,97-2,67 p=0,005) and age>=60 (HR: 1,57 95%CI 1,05-2,42 p=0,028) remained the significant prognostic factors.

Conclusion

Our study proves the utility of the pre-treatment assessment of Ca125 as its level is tightly correlated with OS. It may be hypothesized that the pre-treatment measurement of both CA19-9 and Ca125 can provide the valuable information about patients' prognosis.

Rare adenocarcinoma of the appendix synchronously with colon cancer.

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Introduction

Malignant neoplasms of the appendix are extremely rare and occur approximately in 0.12 per 1,000,000 person/year. Cancer of the appendix can result in appendicitis or perforation of the appendix. Therefore, most common symptoms of primary appendix cancer are very similarly to acute appendicitis. Moreover - appendiceal neoplasms are seldom diagnosed before or during appendectomy, while 1,5% specimens reveal primary cancer.

Case Report

Eighty-five-year-old woman admitted to surgical department for abdominal pain and lower gastrointestinal bleeding. During hospitalization, the patient developed acute coronary symptoms and was transferred to cardiology. She returned to the department of surgery with peritonitis. Surgery revealed inflammatory infiltration and perforation of the appendix. Local excision was done. Appendix with inflammatory tissue was send for histopathology. Recovery from peritonitis and wound healing process took longer than usually. Histopathology: adenocarcinoma of the appendix.

A month later the patient was admitted for radical surgery and right hemicolectomy was performed. As a part of staging, colonoscopy was done. The test reveled infiltrating mass about 15 cm from the anus. The tissue sample showed adenocarcinoma on histopathology. CT scan was performed.

A palliative colostomy was completed with laparoscopic technique. The patient was transferred to Oncology Center. Primary adenocarcinoma of the appendix and adenocarcinoma of the colon developed synchronously and independently.

Conclusion

Vigilance for rare neoplasm is mandatory in patients with typical symptoms. Diagnosis of rare disease does not necessarily exclude another simultaneous common disease/ neoplasm and full workup should be completed prior to redo surgery.

Correlation between concentration of suPAR, cyfra 21.1 and Gal 3 in patients with squamous-cell carcinoma of the lung

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Introduction

According to the World Cancer Report (2014) lungs are the most common cancer localization in population of highly-developed and medium-developed countries. Squamous-cell carcinoma is a type of non-small-cell lung cancer. One of the distinctive features of the disease is occurence of distal micrometastases which may appear undependently of clinical stage. In result local therapy is uneffective in 50% of patients even with unadvanced stage of cancer. Considering the facts mentioned, there is a necessity of early diagnosing and detectability among patients who are admitted to the ward.

Aim of study

The aim of the study was to compare the concentration of three markers: suPAR, cyfra 21.1 and Gal 3 in serum of patients suffering from squamous-cell carcinoma . The research concerned correlation between level of the markers and the clinical stage of cancer.

Materials and methods

The blood tests of a group of patients from Thoracic Surgery Ward was researched in terms of concentration of neoplastic markers: suPAR, cyfra 21.1 and Gal 3. The patients were divided in six groups with similar average age and quantity of members. The groups from 1 to 4 consisted of patients suffering from squamous-cell carcinoma in increasing stages of development. The fifth group included patients with benign lesions in lungs (such as hamartoma, fibroma, cyst). The sixth researched group was the control group with healthy patients.

Results

Inclusively, 104 patients were examined. The average age was 64,68 years old (28-86). Average concentration of suPAR in ng/mL: group 1 – 3,85; group 2 – 4,07; group 3 – 4,51; group 4 – 4,43; group N (benign lesions) – 3,31; control group – 2,60. Average concentration of Gal3 (ng/mL): group 1 – 14,27; group 2 – 12,81; group 3 – 10,32; group 4 – 13,66; group N – 8,07; control group – 6,44. Average concentration of cyfra 21.1 (ng/mL): group 1 – 4,09; group 2 – 2,87; group 3 – 5,62; group 4 – 10,89; group N– 2,44; control group– 1,48. After comparison between groups: 1, 2, 3, 4, N and control group it turned out that concentration of suPAR in statistically significant way is different from control grup in groups 2, 3, 4. Amount of Gal3 - 1, 2, 3, 4. Concentration of cyfra 21.1 – in groups 3, 4. Difference between group N and control group was not statistically significant for any of markers.Multivariate analysis in the Cox regression model demonstrated that factors such as Ca125>=20 (HR: 1,79 95%CI 1,21-2,66 p=0,004) CA19-9>=200 (HR: 1,79 95%CI 1,97-2,67 p=0,005) and age>=60 (HR: 1,57 95%CI 1,05-2,42 p=0,028) remained the significant prognostic factors.

Conclusion

Of all tested markers Gal3 demonstrated the highest effectiveness in case of squamous-cell carcinoma of the lung in all groups of clinical stage. Combination of results of tests for all three above-mentioned markers might in the future contribute to abridgment of diagnostic track in case of above-mentioned carcinoma.

The value of protein level determining in blood plasma in patient with perforated gastroduodenal ulcer

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Introduction

Peptic gastric or duodenal ulcer becomes complicated with perforation in 6.5 % of cases [1]. The blood sampling is performed with determination of serum protein in process of finish examination of the patients. By the way it wasn't determined the information value of this factor in diagnostic complex of perforated gastroduodenal ulcer in available resources.

Aim of study

Estimation of informative value of serum protein level in perforated gastroduodenal ulcer.

Materials and methods

We have analyzed case histories of 34 operated patients, which received treatment in HI "UCHFA c. Grodno" in 2014-2015 years concerning perforated gastric or duodenal ulcer for achievement of given aim. Case histories were analyzed on serum protein level. For statistical analysis it also took duration of in-hospital stay, day of temperature normalization, diameter of perforation, and result of microbiology inoculation from abdominal cavity, gender, patient age, peritonitis severity, perforated ulcer localization, duration of operation, and day of subfebrile temperatures, disability group.

Statistical manipulation of results was performed by using software package Statistic 10.0. Differences between groups were evaluated with nonparametric coefficient of Spearman rank correlation in given 5 % mistake probability.

Results

Statistical analysis showed that the protein level in blood plasma in perforated gastroduodenal ulcers does not depend on the length of in-hospital stay of the patient, age, sex of the patient, the severity of the operation and duration of peritonitis, the day of temperature normalization, results of microbiological cultivation from abdominal cavity, ulcer localization. At the same time, the larger perforation holes were observed in patients with lower protein levels (r= 0.5). A direct correlation was identified between the severity of the operation and decreasing of the serum protein level (r= 0.3). A more serious disability group was typical for patients with lower protein level (r= 0.4).

Conclusion

1) The level of serum protein is an indirect measure of perforated ulcer diameter.

2) The initial decrease in serum protein on admission of the patient with perforated gastroduodenal ulcer indirectly evidences about more severe concomitant diseases (disability group) and the need to perform more extensive surgery.

The neutrophil-to-lymphocyte ratio has influence on perioperative complications in patients with colorectal cancer.

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Introduction

Colorectal cancer (CRC) is one of the most common tumor in worldwide population. This type of cancer is associated with a higher rate of surgical complications. Our study was planned to determine whether the neutrophil-to-lymphocyte ratio (NLR) is a predictor of oncological outcomes in CRC patients. However, it is not obvious connection between NLR and cancer-specific survival in colorectal cancer.

Aim of study

The aim of the study was to evaluate the association between the neutrophil-to-lymphocyte ratio and the presence of perioperative complications in patients after colorectal surgery

Materials and methods

We retrospectively analysed medical records of 60 patients with various colorectal cancers, treated in the Department between January 2014 and December 2015. Out of them, 49 had a complete morphology. We checked their laboratory tests to establish NLR and occurrence of complications.

Results

Our study consisted of 49 patients (18 females and 31 males, mean age 72 years). Complications developed in 17 patients (34,7%). 6 patients had infectious complications, 3 had intestinal obstruction, 2 had complications connected with lungs, 6 developed eventration and 5 had other complications. The results also showed that patients with NLR>5,2 were expected to have a larger tumor.

Conclusion

Our results show that NLR is a useful prognostic indicator for perioperative complications of colorectal cancer patients. In our study pre-operative NLR=5,2 is mean value in patients, who developed complications and poorer long-term survival. However, complications were noted in the patients with lower level of NLR too. We still need more information of this issue, because unambiguous assessment is difficult to explain.

Combination of neutrophil to lymphocyte ratio (NLR), CA19-9 and Ca125 distinguish pancreatic cancer from benign pancreatic lesions.

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Introduction

Differential diagnosis of focal lesions in the pancreas is difficult due to similarities in clinical presentations and radiological imaging. Its effectiveness is very important, because only proper early diagnosis of pancreatic cancer (PDAC) enables surgical treatment which is the only curative management option. Moreover, PDAC is the fourth cancer-related cause of death worldwide with the 5-year survival rate of only 7%.

Aim of study

The aim of this study is to investigate whether the neutrophil to lymphocyte ratio (NLR) taken together with the concentration levels of Ca-125 and Ca19-9 biomarkers can enhance the differential diagnosis between PDAC and benign pancreatic lesions (BPL).

Materials and methods

We have conducted a retrospective analysis of the data concerning the patients admitted to the Department due to either pancreatic adenocarcinoma (PDAC) or benign pancreatic lesion (BPL). We have taken into consideration 250 patients (158 males and 92 females). As for the clinical data, we have obtained data on patients' age, gender, lesion type (PDAC vs BPL, lesion's resectability) and pre-treatment assessment of neutrophils and lymphocyte, Ca125 and CA19-9.

Results

166 patients (102 males (M), 64 females (F) mean age of 62 years) had pancreatic adenocarcinoma (PDAC) and 84 patients (56 M, 28F mean age of 55 years) had a benign pancreatic lesion (BPL). We have observed statistically significant differences in groups' mean levels of NLR (NLR_{PDAC}= 3,88 vs NLR_{BPL}=3,7 p=0,001) CA19-9 ($CA19\text{-}9_{PDAC}$= 705 IU/mL vs $CA19\text{-}9_{BPL}$=60,5 p<0,0001) and Ca125 ($Ca125_{PDAC}$= 46,25 IU/mL vs $Ca125_{BPL}$=12,82 p<0,0001). The difference in the mean age was also statistically significant (p<0,0001). Taking into account this promising distribution, we have constructed a panel test consisting of NLR, Ca125, Ca19-9 and age. Logistic regression model was applied as a framework for the proposed test. The ROC curve built for the model achieved the area under curve (AUC) of 0,794. This results in specificity of 60,71% and sensitivity of 79,5% for the optimal cut-off point. These values are favorable in comparison to CA19-9 with the clinical cut off point (>=36IU/mL), which achieves specificity of 77,38% and sensitivity of 52,4%.

Conclusion

Our study proves that high neutrophil to lymphocyte ratio together with Ca125 and CA19-9 can efficiently differentiate PDAC from other non-malignant lesions. Although, the proposed test fails to reach exceptionally high specificity, its relatively high sensitivity can potentially exclude patients with BPL from aggressive surgical management.

Most common causes of massive large intestine bleeding, endoscopic and radiological findings. 5 years data collection from single center experience.

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Introduction

Massive large intestine bleeding is life threatening, and very expensive to manage, pathology. It usually leads to hospital admission to an intensive care unit, with invasive diagnostic evaluations, blood component transfusions, and consumes significant medical resources. [Lisa L. Strate, Ian M. Gralnek, Management of Patients With Acute Lower Gastrointestinal Bleeding, 2016 guidelines]. When medical management and endoscopic therapy are inadequate, endovascular intervention can be lifesaving. In these emergent situations, it is important for the interventional radiologist to be well versed in the multidisciplinary pre-angiographic work-up, the angiographic presentations of lower gastrointestinal bleeding, and the endovascular therapeutic options. [Rakesh Navuluri, Lisa Kang, Thuong Van Ha, Acute Lower Gastrointestinal Bleeding, Departament of Radiology, University of Chicago Medical Center, 2012]..

Aim of study

To find out the most common large intestine bleeding causes in Riga East University Hospital, Interventional radiology department archive data and correlation between computed tomography angiography (CTA), digital subtraction angiography (DSA) and fibrocolonoscopic (FCS) diagnostic results.

Materials and methods

21 patient, who were hospitalized in Riga East University Hospital were included in this retrospective study. All included patients had 2 following criteria - massive large intestine bleeding and DSA with or without endovascular embolization. Patients allocated into 4 groups - vascular, anatomical, neoplastic and inflamatory pathologies causing large intestine bleeding. Vascular pathologies were statistically compared to the other groups. CTA, DSA, FCS findings were assessed. Bleeding location and cause were analyzed. Data were analyzed using SPSS and MS Excel programs.

Results

Vascular pathologies n=8 (38,1%), anatomical pathologies n=8 (38,1%), neoplastic n=7 (33,3%) and inflamatory disease n=3 (14,3%). Statistically significant frequency difference vascular pathologies have only to inflamatory disease (p=0,006). According to neoplasia (p=0,398) and anatomic (p=0,595) vascular pathologies do not have statistically significant incidence difference. Diagnostic result of CTA with DSA coincidence were 93,8%, CTA with FCS 66,7% and DSA with FCS 60%. CTA coincidence with DSA is statistically more frequently than CTA with FCS or DSA with FCS ($p<0,0005$ for both). CTA coincidence with FCS do not have statistically significant difference to DSA with FCS coincidence (p=0,179).

Conclusion

Vascular pathology is statistically more frequent cause of massive large intestine bleeding than inflamatory diseases. CTA can be recommended as a first line diagnostic test before DSA in patients with massive large intestine bleeding to verify bleeding localization, manage time and contrast consumption prior to endovascular approach.

Usefullness of ultrasonography in diagnosis of acute appendicitis

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Introduction

Ultrasonography is nowadays one of the most common imaging during diagnosis the patient directed to emergency surgery. In case of acute appendicitis, ultrasonography can confirm the diagnosis, or exclude it by finding other organ patology.

Aim of study

The aim of this retrospective study was to demonstrate the usefulness of the USG as a recommended imaging modality to confirm pathological appendix visualization in comparison to clinical patient's examination, described in Alvarado score, pre-operative serum C-reactive protein (CRP) level, and post-operative pathology examination of appendix.

Materials and methods

104 patients admitted for suspect acute appendicitis and operated on ER in Department of Endocrine, General and Vascular Surgery in Kopernik Hospital in Łódź, between January 2016 and January 2017, were included. All the patients were older than 18 years. Patients with periappendiceal abscess or cured conservatively were excluded from research. The patients were divided in two groups: I – with described appendix pathology and pre-operative clinical state described at least 5 points in Alvarado score; II – without described pathological ultrasonography signs and pre-operative clinical state described at least 5 points in Alvarado score. They were compared between, according to: sex, age, CRP level, appendix pathology and Alvarado score. Collected data were statistically analysed and compared in discussion with enabled publications from last 2 years (2016-2017).

Results

The Ist group of 57 patients indicated statistically significance ($p<0.05$) for described pre-operative serum C-reactive protein (CRP) level and post-operative pathology. There was no significance accord to sex and age between groups. Similar results was also described in publications.

Conclusion

Using ultrasonography is helpful and can be a trusty way of diagnosing acute appendicitis on ER, because of significally connected examination score and studied pathology.

Preoperative level of CA19-9 and Neutrophil to Lymphocyte Ratio to predict overall survival time in patients with pancreatic ductal adenocarcinoma

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Introduction

Pancreatic ductal adenocarcinoma (PDAC) is the most common malignancy of the pancreas and the fourth cause of cancer-related death worldwide. The cancer is usually asymptomatic in its early stages, therefore detection can be difficult. First manifestations of the disease are usually observed when the cancer is unresectable.

Aim of study

The aim of the study was to define prognostic factors for survival in patients with pancreatic cancer. Favourable prognosis prior to the surgical intervention and rapid recovery create an opportunity to start chemotherapy which could prolong patients' life. In consideration of patients suffering from an unresectable pancreatic carcinoma, it provides us with certain knowledge of their prognosis.

Materials and methods

We enrolled 147 patients to the study. We retrospectively analyzed patients' data on age, gender, PDAC resectability. We also obtained information on their pre-treatment CA19-9 level and Neutrophil to Lymphocyte Ratio (NLR). As for follow-up, we received information from the appropriate department of Ministry of Internal Affairs concerning patients' status. Overall survival time (OS) was calculated from the day of admission to the hospital to last day of follow-up (i.e. receiving data from Ministry of Internal Affairs). In order to assess prognostic factors, survival analysis in the Kaplan-Meier survival model was carried out. Log-rank test was used to compare the factors. Cox proportional hazards model was applied for the multivariate analysis.

Results

The study group consisted of 147 patients. During statistical analysis cut-off points for prognostic factors were chosen: CA19-9>= 250IU/mL was recognized as significantly increased, NLR >= 4 was considered as high. As a result of analysis both proved to be significant prognostic factors ($CA19\text{-}9_{<250}$ median OS- 8mo 14d vs. $CA19\text{-}9_{>=250}$- 4mo 20d p=0,001); ($NLR_{<4}$ median OS- 8mo 12d vs. $NLR_{>=4}$- 3mo 4d p=0,002). Furthermore, also PDAC resectability proved to be statistically significant factor ($PDAC_{resectable}$ median OS- 13mo 23d vs. $PDAC_{unresectable}$- 5mo p=0,001). On the multivariate analysis all the factors were statistically significant- CA19-9>=250 (HR: 1,77 95%CI 1,22-2,56 p=0,003), unresectable PDAC (HR: 1,61 95%CI 1,05-2,47 p=0,028) and NLR>=4 (HR: 1,48 95%CI 1,01-2,16 p=0,042).

Conclusion

Our study proves that elevated ratio of neutrophil to lymphocyte can be used as a prognostic factor for survival in patients with pancreatic tumor. This is essential because positive forecast before operation and fast recovery allow to initiate chemotherapy which could increase life expectancy of patients with pancreatic carcinoma. Furthermore, this factor could be useful to define stage of disease.

SURGERY 2

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Conservative Treatment of Constipation in Patients Living with a Colostomy

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Introduction

Constipation in persons with an intact gastrointestinal tract is defined using Rome III Diagnostic Criteria as fewer than 3 bowel movements per week, straining to pass stool on at least 25% of bowel movements, lumpy or hardened stool on at least 25%. We reviewed the literature and found no clear definitions or criteria for diagnosing constipation in patients with an ostomy.

Aim of study

The purpose of this study was to determine the effect of a conservative regimen for treatment of constipation in persons living with a colostomy.

Materials and methods

The study sample comprised 38 patients with a colostomy who were diagnosed with chronic constipation. Patients at our Stoma Outpatient Clinic underwent baseline evaluation and those with symptoms of constipation (prolonged periods between bowel movements, pasty of hardened fecal effluent and associated symptoms such as abdominal discomfort or bloating received individualized dietary recommendations that typically included an increase in dietary fiber and fluid intake, along with a simultaneous intake of fluids. The outcomes of dietary changes were evaluated during a follow-up visit 3 months later. If dietary changes alone did not improve constipation symptoms, we prescribed a psyllium based bulk-forming agents, an osmotic stool softener, and probiotic. If this proved unsuccessful, a prokinetic agent such as metoclopramide taken three times daily was prescribed as a third line intervention.

Results

Dietary interventions alone were deemed successful in 55.3% of study subjects (n=21); 17 patients required additional treatment. Statistically significant more patients were found between successful and unsuccessful dietary modifications in two groups: whole patients with dietary modifications (p=0.00055) and patients with diverticulosis (p=0.0003). In these two groups, more patients were successfully treated with dietary modifications. Additionally, among subjects with diverticulosis, 15 out of 25 (60.0%) responded to treatment with dietary modifications alone as compared to 6 out of 13 subjects (46.15%) of patients who underwent stoma surgery for colorectal cancer or other causes (p=0.004).

Conclusion

Dietary modifications alone relieved constipation in more than half of a group of 38 patients with constipation. We therefore recommend a trial of dietary modifications prior to initiation of pharmacotherapy and/or irrigation in patients with a colostomy.

Surgery Treatment of Constipation in Patients Living with a Colostomy

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Introduction

Stoma is an intestinal stula created in emergency or by elective indications, and it is done to drain out the digestive tract content. In some patients there is a disturbance passage of gastric contents through the stoma, which may take the form of chronic constipation or even periodic subileus that will sooner or later require surgical treatment.

Aim of study

The aim of the study was the assessment of the causes and method of treatment of constipation in patients with intestinal stoma.

Materials and methods

A total of 331 patients with stoma followed by Ostomy and Proctology Out- patient Clinic were included in the study in the years 2011-2014. The study included 146 women and 185 men and the average age was 61.3 ± 12.7 years. Within the entire froup, 273 patients had the end stoma performed whereas in 58 patients the loop stoma was created. The highest percentage of patients were the ones with diverticulosis and colorectal cancer, i.e. 132 and 114 patients respectively. A stoma was created in 35 patients due to in ammatory bowel disease (IBD), in 23 patients because of cancer, in 14 as a result of injuries and in 13 due to rectovaginal stula.

Results

Out of the entire group subject to study (331 patients) 93 patients (28.1%) suffered from constipation. 50 patients with constipation required surgical intervention. The most common indica- tion for surgical treatment was the parastomal hernia (36 patients, 72%), other indications were the narrowing of the stoma (5 patients, 10%), its collapse (6 patients, 12%) or prolapse (3 patients, 6%). Parastomal hernia was responsible for 84% of constipation within the stoma and 86.1% were treated with laparotomy (31 out of 36 patients). Other causes of constipation were the stomal stenoses (5 pa- tients), collapse of the stoma (6 patients) and stomal prolapse (3 patients). All patients were treated surgically with a good nal result.

Conclusion

Constipation associated with dysfunction of the stoma in most cases should be treated surgically. Parastomal hernia is the most common cause of constipation in the stoma. Treatment should be performed in due time because of the possibility of developing complications, especially dangerous one is a strangulated parastomal hernia and ischemia of stoma.

Therapy of the head and neck venous malformations with Nd:YAG laser

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Introduction

Venous malformations are second most common vascular malformations. Mainly localized in neck and head, also, may extend into oral cavity causing series of problems like; haemorrhage and thrombosis, pain, cosmetic defects. Abnormal vessels have distorted and distended walls by means of irregularities in smooth muscle cells which surround endothelial layer. Size of anomaly progressively continues with time, as the pressure rises and depresses and may cause range of complications further in life. As venous malformations are present in dermal layers of skin, they are visible with naked eye as bluish lesion which is easily compressed and may be assimilated as spot or web. Laser therapy of venous malformations is relatively new as it's been out only for a decade and not everything is clear, therefore, that research may prove important factor in broad image of the therapy.

Materials and methods

Overall 17 patients (aged 1-19 years, mean 8,) with venous lesions on head and neck areas were treated from 2014 to 2016 at Department of Pediatric Surgery and Oncology, Medical University of Lodz. 15/17 (88.24%) were females and 2/17 (11.76%) were males. Lesions were localised mainly on cheeks and around lips but also, some were found intraorally and on forehead. All patients had at least one laser therapy, nevertheless, some patients also had sclerotherapy and even surgical excision. Laser treatment was done with 1460nm long-pulsed Nd:YAG laser. Output energy ranged 30-220 J/cm2, aplicator diameter varied 1.5-9mm and pulse time from 3 to 20ms. Sclerotherapy was performed with 2%Polidocanol. To assess effect of laser treatment, an analysis was performed by means of a questionnaire with scales from 1-3 and percentages. 6 questions included: localisation of malformation, decrease in size after therapy estimated in % value, evolution of pain caused by malformation, any side effects after treatment.

Results

Until now only nine out of 17 patients answered the questionnaire and the results showed 0-90% decrease in volume (mean 45%). None of the patients had pain induced by malformation before or after treatment. Only single patient had posttreatment intermediate pain. 3 out of 9 patients had side effects like slight burn of skin or mucosa, with no scaring, one headache. Rest of the patients had no posttreatment symptoms. Following results are being proceeded.

Conclusion

Nd:YAG laser used as a single treatment shows various degree of results depending on malformation size and location. Therapy definitely decreases volume, diminishes pain and changes colour of the lesion. 6 patients require additional sclerotherapy to reduce the lesions. Best results were visible on face regions such as cheeks, forehead as well as intraorally. Treatment with Nd-YAG laser seems to be safe alternative for surgery with minor side effects.

Huge problems of a small patient - difficulties in the therapy of hypoganglionosis

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Introduction

Hypoganglionosis is a rare disorder that is seen in about 5% of all neuronal intestinal malformations. It can coexist with Hirschprung disease (HD) or be an isolated condition. Among scientists there is a broad agreement that within Hirschprung disease and allied disorders (ADHD) hypoganglionosis is the most difficult entity to be diagnosed and distinguished from HD. The etiology of the pathological condition is not clear. It may be connected not only with defect in enteric neuronal precursor migration but also with later cells' death of unknown origin, for example autoimmunitive process. The condition has poor prognosis and often needs multiple surgeries.Enterocolitis of the newborn has been reported to be the most serious complication of isolated hypoganglionosis.

Case Report

2,5-year-old boy was admitted to Department of Paediatric Surgery, Traumatology and Urology in Poznań due to recurrent gastrointestinal obstruciton episodes. During infancy he was diagnosed with HD and transanal rectosigmoid resection was performed. At the age of 18 months the patient presented with a few episodes of acute enterocolitis. Due to repeating entercolitis and subileus episodes the decision on performing laparotomy and exposuring end ileostomy was made. On admission in January 2016 the patient presented with strong abdominal pain and constipation. The next laparotomy was performed. Peritoneal adhesions were released and purulent intestinal content was evacuated. Mapping of the colon was performed because of suspicion of hypoganglionosis . During postoperative period there were no complications. Despite problems in feeding patient's diet was expanded. The boy also suffers from diabetes mellitus and celiac disease. It can enhance enterocolitis and leads to consideration of autoimmunitive origin of hypoganglionosis.

Conclusion

ADHD are complex problems and need advanced treatment delivered by experienced clinicians. In the presented patient the autoimmune etiology of coexisting problems cannot be excluded and affect the enteric nervous system contributing to hypoganglionosis. Not only hypoganglionosis but also celiac disease can escalate entercoloitis and influence the condition of the patient.

Rare adenocarcinoma of the appendix synchronously with colon cancer.

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Introduction

Urinary reconstructive procedures are required in patients undergoing cystectomy. Currently urinary diversions can be divided into two categories: continent diversions such as orthotopic neobladder or Indiana pouch reservoir and incontinent such as ileal conduit urinary diversion or cutaneous ureterostomy. Bricker ileal conduit is standard procedure in patient with contraindications for continent urinary diversion. Neobladder is similar in function to urinary bladder, urinary reservoir is made of small part of detubularized small intestine and is connected to the urethra. The criteria for most appropriate diversion are still discussed due to different advantages and complication of each method.

Aim of study

The aim of the study was to compare different urinary diversions after cystectomy including pre- and postoperative factors

Materials and methods

A group of 122 patients who underwent cystectomy due to bladder cancer was retrospectively assessed. Because of incomplete medical data, six patients were excluded from the study. Therefore the study group consisted of 116 patients. The mean age was 65.9 (±10.4) years old. The group consisted of 94 men (81%) and 22 women (19%). Statistical analysis was performed and Kaplan-Meier curves were used to asses survival.

Results

Bricker ileal conduit was the most common procedure, it was performed in 93 patients (80%). neobladder method was chosen in 17 patients (14,6%) and cutaneous ureterostomy in 6 (5%). The mean age was significantly lower ($p<0,001$) in patients with neobladder than ileal conduit, 56.3 and 66.9 years old respectively. Cutaneous ureterostomy was performed mainly in older patients – mean age was 77.5 (69-81) years old. Neobladder was created in 16 men (94%) and 1 women (6%). One-year overall survival was significantly higher (log-rank test $p<0,05$) in patients with neobladder (93.5%) comparing to ileal conduit (70%).

Conclusion

Neobladder is a good alternative to Bricker ileal conduit, although it requires patient's cooperation and longer rehabilitation therapy. It might be preferred method, especially among patient up to 60 years old.

Analysis of secondary surgical interventions after abdominal surgery in Leśniowski- Crohn's disease patients

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Introduction

Leśniowski- Crohn's disease (CD) is a transmural and granulomatosus condition which may affect any part of the gastrointestinal tract. The course of the disease is affected by multiple factors which may exacerbate the disease. Surgical procedures are often crucial in reducing symptoms and improving patients' quality of life. Simultaneously, possible predictive factors for consecutive surgical interventions continue to remain uncertain.

Aim of study

E The aim of this study was to analyse the rate of secondary surgical procedures in management of CD patients after previous abdominal surgery. The research aimed at evaluating predictive factors for consecutive surgeries in patients with CD.

Materials and methods

The study included 28 patients with CD treated at Department of General and Colorectal Surgery between 2011 and 2016. All the qualified patients underwent at least two surgeries, first in abdominal cavity, due to exacerbation in the course of disease. The medical data was collected in a retrospective manner basing on hospital records. The analyzed parameters included patients' age, sex, disease duration and essential data on primary and secondary surgical intervention comprising of date, cause and extent of surgery, admission type and postoperative complications.

Results

A total of 28 patients were enrolled, 15 (53,6%) females and 13 (46,4%) males. The average age of patients at diagnosis was 29 years (28.6y females vs. 29.4y males). Among 15 patients (9 women/ 5 men) diagnosed or whom pharmacotherapy was applied in years preceding the year of the first operation the mean period between diagnosis and the first surgery was 4,4 years (women 5,11/ men 3,29). The most prevalent type of first operation was distal ileectomy combined with right hemicolectomy (7/28). The most frequent type of second surgery was segment of small intestine resection (6/28). The mean interval between first and second surgery was 55.9 months (women 64.9 / men 45.5). In patients aged 40 (4 patients) 21.2 months. A higher rate of complications after urgent surgeries, compared with planned has been noted (60% vs. 39.1% in first operation, 33.3% vs. 16% in second operation).

Conclusion

The time between the first and the second surgery is significantly shorter in group of patients aged >40. The period between the first and the second surgery is shorter in males. Urgent surgeries are associated with higher risk of complications.

Liposuction and lipofilling in Barraquer-Simons syndrome: a report of two cases.

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Introduction

Barraquer-Simons syndrome is a rare form of progressive lipodystrophy typically affecting the face, upper limbs and thorax to mid-thigh level caudally. The initial presentation and subsequent operative management of two females aged twenty-six and forty-nine affected by this disorder is described. Both patients complained of facial lipoatrophy and adipose tissue hypertrophy in the extremities. Both patients reported an improvement in aesthetic outcomes, enhanced psychological well-being and a high level of satisfaction after a combination of liposuction and Coleman fat transfer. For optimal long-term results, procedures may need to be repeated to counteract disease progression and fat graft resorption.

Case Report

Case 1: A previously fit and healthy twenty-six year old female was referred to the plastic surgery department by her general practitioner complaining of a disproportionate enlargement of her thighs and posterior arms relative to her body habitus and a loss of volume in the malar and infra-orbital region. Thigh circumference was stipulated by the patient as actively restricting her mobility and had resulted in the development of early degenerative changes in the knees. Following initial assessment, a clinical diagnosis of Barraquer-Simons syndrome was made. The patient underwent a total of three operations consisting of liposuction of the extremities and Coleman fat transfer to the face over the course of the following two years with good effect.

Case 2: A 48 year old female was referred from primary care with a 3 year history of progressive volume loss in the facial region affecting the patients' confidence resulting in limited social interaction. Moderate hypertrophy of the subcutaneous tissues of both anteromedial thighs was noted on clinical examination and a diagnosis of Barraquer-Simons syndrome was made. She underwent a total of two operations comprised of Coleman fat transfer to the face and liposuction to the extremities. Her psychological well-being has greatly improved and she is due to be discharged back to primary care.

Conclusion

Barraquer-Simons syndrome can be successfully managed with a combination of liposuction and Coleman fat transfer, offering hope to patients and clinicians alike in the management of this rare form of lipodystrophy. The technique offers low donor site morbidity, less scarring, short operative time and length of inpatient stay, whilst being technically easy to perform and simultaneously addressing the issue of disproportionate abundance of adipose tissue in the lower extremity. Improved aesthetic outcomes, enhanced psychological well-being and high levels of patient satisfaction can be obtained after a single procedure, however optimal long-term results are likely to be achieved only after multiple procedures performed at regular intervals due to natural fat graft resorption on a background of a progressive disease process.

Usage of Self-Gripping Meshes in the Laparoscopic Trans Abdominal Pre-peritoneal (TAPP) Repair of Inguinal Hernia

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Introduction

TAPP is one of the recommended methods for inguinal herniorrhaphy. It is known that mesh mechanical fixation is associated with pain; moreover, fixation devices increase operation costs. Using self-gripping meshes without fixation is a good alternative.

Aim of study

Assess the patients' well-being after laparoscopic TAPP plastic using ProGrip self-gripping meshes

Materials and methods

77 patients with were operated with TAPP method. The self-gripping mesh with multiple resorbable polylactic acid microgrips on one side was used. Follow-up was done by phone and by visit. Complications, hospital stay, discomfort, pain (VAS-visual analogue scale), foreign body feeling, recurrence and satisfaction with procedure were assessed.

Results

Median patients age was 53 (IQR=63-43) years. None of patients had postoperative complications. Mean follow-up was 19 months with maximum 53 months. There were no recurrences. Most patients were highly satisfied with operation (10 points of 10 possible) and all (77) patients would recommend this operation to others. 56 patients had follow-up 1 year and more. After 1 year, only 2 (3.5%) had mild inguinal pain (1-3 VAS), 2 (3,5%) had mild or moderate discomfort during physical activities and 1 (1,8%) had non-constant foreign body feeling. None of patients had discomfort in rest, severe or moderate pain and skin sensitivity problems.

Conclusion

Our study demonstrates that TAPP inguinal hernia repair using self-gripping mesh is safe technique with low chronic pain and recurrence rates. This method is cost-effective because of non-expensive mesh and no needs for mechanical fixation.

Reconstructive Plastic Surgery in Bangladesh

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Introduction

Plastic surgery was introduced first in Bangladesh by Dr. Ronald J Garst in NITOR. With the help of reconstructive plastic surgery, form and function of the body and the aesthetic appearance can be restored like after an accident, cancer surgery or congenital malformations as a result lives can be saved and changed. Although this branch of surgery was neglected for a long time in government hospitals, recent establishment of Plastic surgery dept. in medical college hospitals have boosted its activity. So in this paper, we will discuss about the revolution of reconstructive plastic surgery in SOMCH and give a glimpse of the kind of work going on this department.

Case Report

The research was cross sectional and we took convenient type samples. We retrospectively viewed 12 trauma and cancer reconstructive cases between July 2015 and June 2016. We will discuss post operative outcome of trauma and cancer cases reconstructed with various pedicles and free flaps. Post operative follow up was done according to procedure. Flap survival, functional gain and restoration of form on discharge were considered as successful outcome.

Conclusion

Plastic surgery is not only about aesthetic surgery which is the tip of the iceberg. The important and real need in our country is the reconstructive surgery. The aim of this presentation is to convey the importance of reconstructive plastic surgery in a country like ours.

The role of depression in the surgical treatment of patients with colorectal cancer

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Introduction

Colorectal cancer is the third most common cancer detected in men and second in women worldwide and still remains one of the main causes of death from cancer. The most effective treatment of colorectal cancer is surgical removal of the tumor with an adequate margin of healthy tissue. Meanwhile, a significant number of patients experience depression induced by the disease and intensified by the perspective of surgical treatment. Depression is not only a mental disorder but has a significant impact on somatic symptoms and may influence outcomes of surgical management.

Aim of study

The aim of the study was to evaluate the association between preoperative level of depression in patients with colorectal cancer and the type of treatment used. The project was focused on estimating basic determinants between the patient's mental health and the implemented treatment.

Materials and methods

After taking into account the exclusion criteria, 35 patients with colorectal cancer qualified for surgery at the General and Colorectal Surgery Clinic were included in a prospective study. Patients' age ranged from 62 to 87 years (mean age of 72,2y). Beck's depression scale was used to assess the severity of depression. Patients filled out questionnaires the day before surgery. Essential data was collected with particular emphasis on the treatment applied up to 30 days of postoperative period.

Results

The study group consisted of 16 males and 19 females. The average age was 72,2 years. Depression was recognized in 20 patients (57%). It was more frequent in women (65%) than in men (35%). Postoperative complication in the form of wound infection occurred in one patient with the highest depression level among the study group. In 23% of the patients the tumor was inoperable, 50% of them were depressed. Among 12 patients (34%) qualified to stoma surgery 7 suffered from depression. We also observed a positive correlation between the size of the tumor and the level of depression in patients before the operation.

Conclusion

Our study emphasizes patients mental comfort before operation as a significant factor of their treatment. Unfortunately, it is often dismissed in a process of diagnosis and therapy. Ignoring psychological status of the patient may lead to negative impact on the recovery

Very Small Intracranial Aneurysms – efficacy of endovascular treatment

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Introduction

Technological progress of noninvasive neuroimaging allows investigation and treatment of smaller pathologies. Thus very small intracranial aneurysms [VSIAs] can be extracted from the group of intracranial aneurysms. As aneurysms can lead to subarachnoid haemorrhage [SAH], it is crucial to diagnose them before they burst to minimise neurological complications and death.

Aim of study

Retrospective study was carried out to assess clinical condition of patients with VSIAs and to evaluate methods of treatment, its outcome and complications.

Materials and methods

From the group of 533 patients with intracranial aneurysms, 36 cases of VSIAs were selected. Inclusion criteria were any dimension of the neck or the sack <3mm, endovascular embolization carried out for treatment and digital subtraction angiography for radiological imagining. Distinction between presence and absence of SAH was made. Cases were analysed on completeness of occlusion, patients' recovery, hospitalization length and differences connected to the usage of stents.

Results

Main locations of aneurysms were anterior communicating artery (14,39%) and internal carotid artery (11,31%). SAH was present upon admission in 10 patients. Complications occurred in 14 cases, 7 of which were after SAH. Stents were used in 50% of cases. Complete obliteration was achieved in 75% of procedures. Average Montreal Scale Score was 1.29. Median hospitalization period was 5 days. 26 patients arrived at follow up examination with Montreal Scale Score 1 observed in 20 of them.

Conclusion

We have found radiological and clinical outcomes of endovascular treatment of VSIAs to be effective, with no late complications nor death. The recovery was good with fair success rate.

Foot ulcers – growing problem?

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Introduction

Foot ulcers are a common complication of mostly poorly controlled diabetes and poor circulation in general, forming as a result of tissue breakdown and exposure of the layers underneath. Due to its frequency, difficulties in therapy and chronic pattern trophic foot changes remain an important social, epidemiological and clinical problem. Without prompt and proper treatment, a foot ulcer may require hospital treatment and further severe complications such as deep infection, gangrene and amputation.

Aim of study

The goal of this work was to assess and present the situation of polish population considering foot ulcers epidemiology, surgical management and funding in 2011-2015.

Materials and methods

This was a cross-sectional analysis of polish population focused on surgical management of foot ulcers. To evaluate the prevalence and indirect healthcare costs associated with this condition, data accumulated by Polish National Health Fund in the years 2011-2015 were studied.

Results

In 2015 in Poland 176'860 patients were treated due to foot ulcers. The overall cost of medical care among this group was estimated at nearly 85 million PLN. More than 95% (168 162) of individuals received treatment in outpatient specialist care and only 4,5% (8040) were hospitalized. At the same time, total expenditures associated with hospital stay almost tripled the costs associated with outpatient care (62 534 550,48 vs.21 864 721,1PLN). General surgery departments still constitute majority (93,17%) of all specialty units during hospitalizations. Insulin dependent diabetes and arteriosclerosis represent the most common admission cause (21,17% and 17,75% consecutively).

A significant increase in hospitalization rate can be observed. In 2015 compared to 2011 an increase of approximately 35% was noted (8828 vs. 6570 patients) with simultaneous total cost growth from 48 mln to 62,5 mln PLN. Trophic changes appear to be more prevalent in men than women (64,15% vs. 35,85%) and in patients over the age of 60 (62,05% of treated).

Conclusion

The number of patients with foot ulcers among polish society is constantly growing. Vast majority of hospitalized patients require surgical intervention, which significantly strains health care system budget and present numerous risks for patients. A distinct imbalance between funds allocated for hospitalization and outpatient specialist care can be observed. Considering the scale of the issue, a thorough reevaluation of current treatment and financing strategies should be imposed.

Influence of duodeno-jejunal omega switch, in combination with high fat and control diets, on body mass and lipid accumulation in the liver in Sprague-Dawley rats

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Introduction

The liver is one of the most important organs in fat metabolism. A high fat diet can contribute to non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH) because of the negative impact on GLP1-r expression. After bariatric surgery GLP-1 levels increase. Due to presence of GLP-1 receptors on rats' hepatocytes, this phenomenon leads to activation of genes involved in insulin sensitivity and fatty acid β-oxidation, which has a direct effect on hepatocytes.

Aim of study

The aim of this study was to assess the effect of duodeno-jejunal omega switch surgery on body mass and lipid accumulation in the liver in Sprague-Dawley rats, in regard to diet type.

Materials and methods

22 seven-week old male SD rats were randomly assigned to 2 groups. The first one (n=14) was on a high fat diet (HFD) for one month, while the other (n=14) was fed a normal chow diet (CD) for that time. During the surgery a transection was conducted distally to the duodenal bulb and the distal part of the transected duodenum was closed. A second incision was performed in the first half of total small intestine length. An isoperistaltic end-to-end anastomosis was performed between the duodenal bulb and the selected loop. Liver tissues were analysed by TEM. In order to indirectly quantify fat content, obtained images were analysed statistically. From each photograph total surface of all fat droplets was calculated from each photograph, with respect to the whole tissue area. Body weight was measured before and after surgery.

Results

In the HFD/HFD group after DJOS surgery, only single small lipid droplets were observed in hepatocytes. In comparison, more numerous lipid droplets of various sizes were found in samples from the HFD/SHAM/HFD group. Besides that, liver tissue showed normal structure in samples from both groups. Weight changes were compared between DJOS and SHAM groups for each diet profile. Statistically significant differences were observed for HFD/HFD and HFD/CD groups ($p < 0,001$). Differences in CD/HFD and CD/CD groups were not significant. Before surgery, within the two diet groups, body weight was similar in animals undergoing both procedures.

Conclusion

In the short term DJOS surgery was found not to reduce body weight in the studied groups. However, this type of surgery prevents lipid accumulation in the liver for HFD/HFD groups without any changes in hepatic tissue ultrastructure. Therefore, DJOS surgery seems to lead to improvement of lipid homeostasis.

The role of magnetic resonance imaging in the diagnosis of acute surgical presentations of obstetric patients

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Introduction

The management of the pregnant patient presenting with acute abdominal pain is one of the greatest challenges confronting the general surgeon, as he must be constantly aware that there are in fact two patients that need to be taken into consideration – the foetus and the mother. He must also appreciate the physiological and anatomical changes that occur during pregnancy as well as be able to recognize how they can affect patient presentation, investigation and management. These factors can make the diagnosis and management of routinely encountered surgical conditions difficult. In recent years, magnetic resonance imaging has been shown to be a valuable tool in the assessment of this patient population, allowing for safe and accurate visualisation of the underlying pathology.

Aim of study

Our aim was to establish the diagnostic value of magnetic resonance imaging (MRI) in obstetric patients presenting with signs and symptoms suggestive of surgical pathology – specifically acute onset of abdominal pain. In addition the sensitivity of MR examinations in visualising surgical pathology in this population was assessed and current literature was reviewed.

Materials and methods

Pregnant patients who underwent an MR scan of the abdomen or pelvis with the purpose of investigating an acute surgical problem within a district hospital in a four year period were included in the study. Patient age, trimester of pregnancy and the reasons for surgical referral were noted. The impact of the MRI on the further management of the problem was recorded including information regarding any operative treatment that was carried out as a direct result of the radiological findings. The accuracy of imaging was quantified by comparing the diagnosis suggested by the MRI report with the diagnosis provided in the patients' hospital records at the time of surgical discharge. In patients who were managed non-operatively, the failure of conservative treatment was also taken into account.

Results

22 patients were included into the study, of which 12 patients were investigated for appendicitis, 4 for urinary tract pathology, 2 for hepatobiliary pathology, 2 for an exacerbation of inflammatory bowel disease, 1 for bowel obstruction and 1 for intra-abdominal abscess formation.

Conclusion

MRI scans of the abdomen and pelvis are useful in visualising surgical pathology in obstetric patients**.** MRI has shown to be particularly accurate when determining the presence of appendicitis, Crohn's disease and adnexal pathology in this population, circumventing the need for ionising radiation

TECHNICAL MEDICINE & BIOENGINEERING

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Markers of epithelial-to-mesenchymal transition reflect tumor biology according to patient age and Gleason score in prostate cancer

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Introduction

Prostate carcinoma (PRAD) is one of the most frequently diagnosed malignancies among men worldwide. Although, the chances of developing PRAD increase with age, more and more prostate tumors are found in younger men. It is well-known that androgen receptor (AR) plays a pivotal role in a vast majority of prostate tumors. However, recent evidence emerged stating(or showing) that estrogen receptors (ERs) may also contribute to prostate tumor development and growth, either independently or in concert with the AR. Moreover, progression and more aggressive phenotype of prostate cancer may be associated with differential expression of epithelial-to-mesenchymal transition (EMT) markers.

Aim of study

We aimed to assess the significance of receptors status as well as EMT marker genes expression among PRAD patients in accordance to their age and Gleason score.

Materials and methods

We obtained TCGA expression profiles (RNAseqV2, RSEM normalized) of 497 patients regarding 43 genes implicated in EMT and 3 hormone receptors (*AR, ESR1, ESR2*) as well as clinical characteristic. To determine the relevance of patients' age and Gleason score and their association with hormone receptors and EMT markers. Then patients were divided patients into four groups according to their age: under 50, within 51-60, 61-70, and above 70 years old. Regarding Gleason score we divided patients into 5 groups: Gleason 6, Gleason 7, Gleason 8, Gleason 9, Gleason 10. Next, we grouped PRAD patients according to relationship between the set of variables (age, Gleason score, receptors and EMT markers expression) in different combinations. The analysis was applied using R package *FactoMineR*.

To generate heatmaps we used R packages: *gplots*, *RColorBrewer* and*NMF*.

Results

MFA showed distinct grouping of PRAD patients divided into four age categories according to expression level of *AR*, *ESR1* and *ESR2* with the most distinct partitioning of the group of age less than 50 years old. Further investigations indicated opposite profiles of EMT markers between all study groups, especially the group aged under 50 years old. Moreover, analysis revealed that expression of EMT markers regardless patient age is strongly associated with Gleason score within PRAD cohort. Finally, we found opposite profiles of epithelial vs mesenchymal markers in the youngest group. We found elevated expression of *KRT18, KRT19, MUC1* and *COL4A1* in tumors of 50 years and younger patients vs *CTNNB1, SMAD2, SMAD3, SNAI2, ZEB1* and *MMP3* which expression was higher in older groups.

Conclusion

Our results show distinct biology of prostate cancer in accordance to patient age. The group of age under 50 years old has been shown as the most divergent regarding both hormone receptor signaling and EMT markers expression. We also found molecular signature potentially explaining the biology of Gleason 10 tumors as well as showed how the expression of particular EMT genes is changing amongst age groups.

Cancer procoagulant: Is it the future new early stage tumor marker? Optimization of the isolation of this mysterious protein with the use of ion-exchange chromatography in FPLC system.

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Introduction

Tumors constitute one of the most serious problems in twenty-first century, which causes enormous numbers of deaths every year. The amount of those suffering from cancer could be dramatically reduced by introducing a habit of periodic health examinations and, as a result, increasing early recognition of the disease. Cancer markers are produced in body in case of cancerous lesions. They are mostly used for monitoring of outcome of therapy and tumor growth. If their concentration in body fluids is elevated, it means that tumor process is progressing and most likely metastasis have already been developed. Unfortunately, currently used markers appear in a body only at a moment of significant development of cancer. A great solution to this problem would be to find a suitable factor whose presence would indicate that cancer is present in a body, but in its initial stage. Very promising protein that can function as a tumor marker in the future is cancer procoagulant (CP), detected in many types of cancer lesions. The only healthy tissue from which it can be isolated is fetal membranes but later it disappears from a mysterious cause.

Aim of study

The main goal of the project was optimization of cancer procoagulant isolation with the use of ion-exchange chromatography. Another subject of my assessment was efficiency and effectiveness of using ethanol as solubulizer and its specific concentration.

Materials and methods

Cancer procoagulant was isolated from human amnion-chorion membranes. Initial purification was based on extraction followed by centrifugation of sample. Extracts were purified by low pressure chromatography. Obtained crude preparations were solubilized with 18% ethanol and then subjected to chromatography on a FPLC. The CP ctivity of the sample was examined by a three-stage chromogenic assay and the protein concentration was determined by Lowry protein assay.

Results

In my study, it has been evidenced that the CP activity is stable when stored at 4°C diluted with 18% ethanol. It seems that use of lower ethanol concentration as a solubilizer is completely justified and can successfully replace more expensive solubilizers. The active and purified fractions of the cancer procoagulant were successfully produced.

Conclusion

Perhaps the same protein or its isoforms would prove to be an effective marker in early stages of cancer development. The next step for a better understanding of CP biology should be sequencing of the protein to learn detailed amino acid sequence. The recombinant protein obtained by molecular biology techniques could be used in larger clinical trials.

Production of scFv-TCK26D and PAI-1 variants in E. coli expression strains

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Introduction

Plasminogen activator inhibitor 1 (PAI-1) and thrombin activatable fibrinolysis inhibitor (TAFI) are the main fibrinolytic inhibitors. Elevated PAI-1 and TAFI levels are risk factors for myocardial infarction and coronary artery disease. Various antibodies and antibody fragments that can be used to control the activity of PAI-1 and TAFI, e.g. scFv-TCK26D6 that inhibits plasmin- and thrombin-mediated TAFI activation, have been developed.

Aim of study

To obtain sufficient quantities and enable investigation of the biological function and structure of the protein, the SUMO-fusion expression system was adapted to test for high-level cytoplasmic expression and easy purification of scFv-TCK26D6, PAI-1 WT, PAI-1-W175F and PAI-1-stab.

Materials and methods

Rosetta 2(DE3)pLysS and Rosetta-Gami 2(DE3)pLysS *E. coli* strains were used as a host for expression of scFv-TCK26D6 and PAI-1 variants. IPTG and auto-induction were used to induce expression of the target proteins. In order to purify HIS_6-SUMO-scFv-TCK26D6, immobilized metal ion affinity chromatography (IMAC), SUMO hydrolase treatment, subtractive IMAC and ion exchange chromatography were used. IMAC and ion exchange chromatography were required for the purification of scFv-TCK26D6 expressed in *E. coli* periplasm. HIS_6-SUMO-PAI-1 variants were purified by IMAC, SUMO hydrolase treatment and HiTrap SP column purification. After incubation with tPA, the conformational distribution of the PAI-1 variants was determined by SDS-PAGE densitometry measurement. The activity and functional half-life of the PAI-1 variants were determined with a chromogenic assay.

Results

scFv-TCK26D6 was expressed as inclusion bodies in the *E. coli* cytoplasm, whereas periplasmic expression resulted in obtaining 0,26 mg of soluble protein. The optimized PAI-1 purification procedure allowed to obtain 54,55 mg of PAI-1-W175F, 76,09 mg of PAI-1-stab and 41,54 mg of PAI-1 WT. PAI-1 activity was determined to vary from 64 % to 92 %. The half-life of PAI-1 WT, PAI-1-W175F and PAI-1-stab was 134 min, 4 h and 162 h respectively.

Conclusions

To obtain high yields of soluble scFv-TCK26D6 in the *E. coli* cytoplasm, different expression strains with particular properties should be tested. Although the two-step PAI-1 purification process described here is sufficient for obtaining high yields of active PAI-1, with functional half-lives similar to those described in literature, this method still needs further optimization to separate active and latent forms of PAI-1.

Shoot cultures of Dracocephalum forrestii W. W. Smith in the nutrient sprinkle bioreactor.

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Introduction

Dracocephalum forrestii is a perennial plant belonging to the *Lamiaceae* family. This species is endemic to northwest region of Yunnan province, China. The plant, important for traditional Tibetan medicine, is widely known as "Quinglan" and usually used as adstringent, antipyretic or diuretic agent. The ethanolic extract of *D. forrestii* shows significant anti-inflammatory and antioxidant properties. Phytochemical analysis demonstrated that many groups of medicinally important constituents and secondary metabolites, such as flavonoids, lignans, monoterpenoids, triterpenoids and phenolic acids were produced in the plant.

Aim of study

The main aim of the study focused on the proliferation of shoots at the laboratory-scale sprinkle bioreactor. In the future, the plant material will be used for evaluation of metabolite production.

Materials and methods

The shoots of *D. forrestii* were cultivated in nutrient sprinkle bioreactor. The liquid MS (Murashige and Skoog) medium supplemented with IAA (indole-3-acetic acid; 0,2 mg/l) and zeatin (2,0 mg/l) was used. The multiplication medium was delivered for 40 s (60 ml per each delivery) with 2,0 min breaks between deliveries. The culture period was 5 weeks.

Results

After 5 weeks, almost 900 shoots of *D. forrestii* were harvested, which gives a multiplication rate about 27 shoots per single explant. However, most shoots formed in bioreactor had hyperhydraceus leaves. The biomass of shoots grown in bioreactor increased about 120 g/l (for fresh weight) and 9 g/l (for dry weight) and was roughly 64 and 50 fold increase over to initial inoculum, respectively.

Conclusion

The obtained results demonstrated the possibility of using the nutrient sprinkle bioreactor for *D. forrestii* propagation. However, further studies are needed to optimize the flow profile to overcome the hyperhydricity syndrom of shoots.

Effects of use of intracranial aneurysms 3D models in education of medical students

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Introduction

Three-dimensional (3D) printing is a technology which first emerged in engineering, that produces 3D objects through a process of adding layer upon layer of materials, based upon a virtual or computer generated model of the original, which in turn, is derived from data segmented into series of two-dimensional cross sections through surface scanning or photogrammetry. Its ability to directly manufacture complex objects using high-resolution digital data allows bypassing of conventional manufacturing processes of producing highly accurate models, in less time and at a reduced cost.

The use of 3D printing has seen expanding interest in the medical fields due, in no small part, to the obvious marriage of 3D printing with high resolution tomographic radiological imaging. Medical applications of 3D printing have already been extensively described in the fields of prosthetics, surgical simulation, pre-surgical planning, and patient education.

An intracranial aneurysm is a cerebrovascular disorder in which weakness of the wall of a cerebral artery causes localized ballooning of the blood vessel. The most popular localization are the arteries of the circle of Willis. Recognizing the exact localization of the intracranial aneurysm basing on computer tomographic angiograms can be a problem for students.

Aim of study

Assess the effect of use of intracranial aneurysms models performed in education of students.

Material and methods

The 3D aneurysm models of 5 cases were made with a prototyping technique according to data from 3D computed tomographic angiograms of each patient. Students were divided into research and control group. In the research group 3D prints of aneurysms were used. The educational tools in control group were limited to computed tomographic angiograms. After that, we assessed the level of understanding of the anatomy.

Results

The understanding of anatomy of brain vasculature and aneurysms was better in the research group.

The role of nano-TiO2 particles in the activation of the mitochondrial pathway of apoptosis in human neutrophils.

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Introduction

Titanium dioxide (TiO2) is a widely used compound in the human environment. Due to its numerous properties, it is used in many areas. It is exerted in water management, food, pharmaceutical, and other industries. Recently, nanoparticles of this compound are becoming increasingly popular. Interest in nano-TiO2 is growing especially in bioengineering. New uses for this material are being discovered in medicine, in the area of surgery and implantation. Studies show that such widespread use of this compound can also have a negative impact on the human body, including the immune system. There were observed the role of these particles in regulating the activity and survival time of immunologically competent cells.

Aim of study

The aim of the study was to determine the ability of nano-TiO2 particles to induce apoptosis of human neutrophils via mitochondrial pathway.

Materials and methods

In order to determine the effects of nano-TiO2, human neutrophils were incubated in the presence of these particles. Cells isolated from whole blood of 12 healthy donors were used in the study. A microscopic assessment was performed to determine the percentage of apoptotic cells. The results obtained were compared to the results of the control groups. The Western Blot method was used to express the proapoptotic proteins of the mitochondrial pathway (Bax, Omi / HtrA2, Smac / Diablo and AIF).

Results

The microscopic assessment showed a slight increase of neutrophils apoptosis in the presence of nano-TiO2. Research have also demonstrated a change in expression of proapoptotic proteins. There was an increase in expression of AIF and Smac / Diablo proteins. There was no significant change in Omi / HtrA2 protein, but Bax expression was decreased.

Conclusion

Nano-TiO2 particles may potentiate the apoptosis of human neutrophils by altering the expression of mitochondrial proapoptotic proteins on the AIF and Smac / Diablo-dependent pathways.

Protein extraction from formalin-fixed, paraffin-embedded tissue sections: Quality evaluation for Western blot analysis

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Introduction

Formalin-fixed and paraffin-embedded tissue (FFPE) sections can be recognized as one of valuable materials to analyze humans' diseases. This is useful for storing very old research materials and allows to create a sort of archive, also it enables to explore, compare the older proteins from freshly collected. FFPE permits draw a conclusion about protein content as well as carry out a study at different times without damaging the research material.

Aim of study

The development of efficient methods of protein extraction from FFPE for their analysis by Western blot technique.

Materials and methods

The study was conducted on paraffin-embedded tissue slides (FFPE) containing postoperative neoplastic tissue. From the blocks 1mm tissue sections were cut and deparaffinized by the addition of octane followed by centrifugation. The next step was to add methanol and re-centrifugate. The upper layer of octane and methanol was removed and the residue tissue was dried under the hood. 20 mM Tris-HCl buffer, pH 7, containing 2% SDS was added to deparaffinized FFPE tissues, then boiled for 40minutes and incubate for 2hours at 60^0C. After these operations, extraction was completed and protein content in the supernatant was analyzed by polyacrylamide gel electrophoresis with SDS (SDS-PAGE). Extracts showing visible protein fractions in electrophoretic separations were further analyzed by the Western Blot method with the use of selected antibodies.

Results

In order to create a good FFPE protein isolation methods that would give satisfactory results, it was necessary to carry out a series of tests and control of the conditions. The best protein extraction was achieved with the use of 20 mM Tris-HCl buffer, pH 7, containing 2% SDS with boiling for 40 minutes followed by incubation at 60^0C for 2 hours. Despite boiling, antigen recovery was efficient as confirmed by Western blot analysis. The research done unequivocally showed that 2% SDS is an essential component used to isolate proteins from the FFPE tissue section during heating. The samples tested without 2% SDS showed poor performance regardless of heating conditions.

Conclusion

Our study indicates that the presence of SDS is critical for antigen recovery as well as heating appears to be the most important aspect of any protein extraction workflow, as the heat is necessary to allowed for hydrolysis of methylene crosslinks.

Additive manufacturing in laparoscopic liver resections - a pilot study

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Introduction

Additive manufacturing (AM) has been found to be beneficial on multiple stages of treatment process in surgical departments. Most importantly, 3D-printed models offer surgeons precise preoperative planning due to possibility of making each model patient-specific. They can also be used in patients' education and after the treatment itself, medical education may be facilitated. Surgical resections are the basis of radical treatment in patients with liver tumors and their complexity makes it necessary to provide extra visualization tools, especially with minimally invasive approach, such as laparoscopy.

Aim of study

Our pilot study evaluates the efficacy of three-dimensionally-printed models in preoperative planning, intraoperative guidance and their impact on short-term clinical outcomes. Also, study examines patiens' knowledge about their disease and the surgery after the standarized talk utilizing models.

Materials and methods

Patients' computed tomography (CT) scans were acquired and further processed with the low-cost approach previously described by authors. Anatomical structures from CT scans were segmented with appropriate algorithms and open-source software. After virtual mesh finishing and rendering, liver models were printed on 3D printer, utilizing fused deposition modeling (FDM) fabrication technique, with polylactic acid (PLA) filament. Printed and assembled parts created a scaffold, subsequently filled with transparent silicone to finish the model. To quantitatively assess short-term clinical outcomes, all suitable data were collected. For surgeons' and patients' opinions, questionnaires were created and statistical analysis was performed.

Results

Three-dimensional, personalized, low-cost models of livers were printed, provided to surgeons for preoperative planning, intraoperative guidance and later used to educate patients. Early reports suggest that AM may be beneficial on all stages of treatment process. Models helped surgeons with recognizing spatial relationships and preparation for procedures. Moreover, they were described by patients as significantly helpful in understanding the surgery, disease and basics of liver anatomy and physiology.

Conclusion

3D-printed models are a step forward towards personalized and digitized medicine. Combining physical 3D models with standard medical imaging or rendering techniques is a unique approach that provides surgeons with additional, immersive visualization of complex spatial anatomy which is an important issue in laparoscopic liver surgery. Still, time of models development is a limitation that makes AM unable to be used in emergent cases. Further analysis is required to evaluate potential clinical benefits of using this technology.

Capsules From Fish

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Introduction

Can capsules (Pharmacy) from fish gelatin be a safe alternative to capsules from animal gelatin?

Aim of study

So in this paper, we will discuss the effectiveness of an alternative capsule from fish gelatin for all the people around the world which will be cheaper and greatly useful for our body.

Materials and methods

Independent variables: Boiled water

Dependent variables: Gum Tragacanth, Titanium Oxide, Fish scales, bones and fins, Mortar and pestle, Beaker, Sorbitol

At first, we have to take necessary quantities of fish scales and bones, boil them at a temperature of *130-140 degrees* and triturate the disinfected fish bones and scales with a mortar and pestle. Then we will mix the resulting powder with *GumTragacanth* and *sorbitol* to make it gummy or sticky and mix *Titanium Oxide(.0425gm/1kg)* with the mixture. Now, if we dip a metal inside this mixture, we will get fish capsules.

Results

Fish scales, bones and fins are regarded as kitchen waste but we can reuse them through recycling to keep the environment clean and healthy. Capsules made of animal gelatin can not exist in more than 15 degrees but capsules from fish gelatin can exist upto 30 degrees. An interesting thing is that it can prevent acidity for upto 12 hours and it is proved theoretically.

Conclusion

The aim of this presentation is to create an eco-friendly environmental system that will help turn kitchen waste into something that can save millions of lives.

Role of chitosan conduit in peripheral nerve regeneration

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Introduction

Peripheral nerve injury is a common problem concerning both internal and surgical patients. Most often cause, next to the metabolic lesions (e.g. in diabetes, uraemia), is trauma injury. Most serious problem in trauma injury is a dysfunction caused by total fracture of nerve and its myelin sheath. It is an intdication for surgical operation, because lack of intervention may cause movement impairment and muscle atrophy.

Aim of study

The goal of this of this research is an evaluation of effectiveness of the biopolymer conduits in rat's ischiadic nerve regeneration. The animal model is representing situation of complete fracture of the nerve and its sheath in human body.

Materials and methods

We used four groups of eight rats each. First group consists of rats with biopolymer conduits with chitosan fibers. Rats in second group underwent autograft transplantation instead of placing the conduits. To follow the process of regeneration, we observed morphological differences in legs, autotomy, histological changes and physiological parameters of gait measured by Catwalk XT.

Results

Mass of the muscles, inflammation, aututomy, growth of neural fibers observed under the optical microscope in research groups were statistically different from the results in control groups.

Conclusion

Creating prosthesis that could ease the process of nerve regeneration and prevent from creating neuromas, would protect the patien from additional suffering like donating the autograft or neuropathic pain caused by neuroma.

Fatty acid profiling in mice model of breast cancer (4T1) using GC-MS/MS

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Introduction

Breast cancer is the most frequently diagnosed form of cancer and the second leading cause of death in Western women. Death, and most of the complications associated with breast cancer, are due to metastasis developing in regional lymph nodes and in distant organs, including bone, lung, liver, and brain [1]. Fatty acids are carboxylic acids with straight chain hydrocarbon containing 4-24 carbon atoms. They are present in all organisms as triglycerides and lipid components of cell membranes. Fatty acids can be saturated and unsaturated (mono- and polyunsaturated).The action of polyunsaturated ω-3 fatty acids in the body is multidirectional. For example positive effects of ω-3 fatty acids are: anti-inflammatory and antiallergic activity, anti-cancer activity or antidepressant. It is believed that fatty acids can directly or indirectly have influence on initiation and promotion phase of carcinogenesis.

Aim of study

The aim of the study was to assess the profile of saturated, monounsaturated and polyunsaturated fatty acids in mice lungs with metastatic breast cancer (4T1) by GC-MS/MS. Lipidomics is a relatively young field of analytical chemistry and it is possible that selected fatty acids may be good biomarkers in the detection of tumor lesions.

Materials and methods

Gas chromatography-tandem mass spectrometry (GCMS-TQ8040, Shimadzu, Japan) was applied for targeted profiling of fatty acids in mice lungs. The samples were prepared using 10 µl homogenized lungs which were extracted using chloroform-methanol mixture 2:1 (v/v) and derivatized by 10% methanolic sulphuric acid solution to get methyl esters of fatty acid, with methyl heptadecanoate as an internal standard.

Results

In the study of about forty compounds of saturated (*e.g.* methyl laurate, methyl tricosanoate, methyl behenate) and unsaturated (*e.g.* methyl petroselate, methyl elaidate, methyl nervonate) fatty acids were determined using GC/MS/MS method. The varied changes in concentration of saturated and unsaturated fatty acids in the following weeks of tumor development was observed. Concentration of saturated fatty acids decreases several times as compared to control animals, however, during the course of the disease is maintained at a constant level. In the results of polyunsaturated the differences of fatty acids were not significant, compared to monounsaturated molecules where concentration was lower in the fourth and fifth week of tumor growth.

Conclusion

Done analysis of the lipid profile in the mice lungs have shown changes in the concentrations of saturated, mono- and polyunsaturated fatty acids. The obtained results providing a better visualization and novel insights to advance understanding of the relationship between rapid progression of tumor growth and fatty acids metabolism.

Study on interaction between human serum albumin and derivates of 1,4-dihydropiridine using spectroscopic methods.

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Introduction

Human serum albumin is the most abundant protein in blood plasma. Serum albumin is produced by the liver from preproalbumin and encoded by the ABL gene. Albumin functions primarily is a transport for fatty acids, bilirubin, thyroid hormones and it binds to a great number of therapeutic drugs. Also albumin plays a major role in stabilizing colloid osmotic pressure.1,4-Dihydropyridines are large group of structurally diverse compounds. Derivates of 1,4- dihydropiridine are specific group of potential antioxidants with bioprotective capacities.

Aim of study

To analyse interaction between human serum albumin and derivates of 1,4- dihydropiridine using spectroscopic methods.

Materials and methods

Compounds:human serum albumin, AV-153-Na (M=319,3); AV-153-Ca (); AV-153-Mg(M=724,99); AV-153-Rb(M=381,77); AV-153-K(M=353,4); AV-153-Li(M=334,4); AV-154-Na(M=259,23).

Fluorescence titration- Measure the fluorescence intensity of the compound for the AV group the exication wavelenght at 350nm, emission at 480nm. Add the 5 bolus of human serum albumin at the compound solution, mix thoroughly, wait for 5 min and measure the fluorescence again. Repeat the action until saturation if there is noticed hypochromic or hyperchromic effect.

Results

There is noticed hyperchromic effect.

Conclusion

There is an interaction between human serum albumin and derivates of 1,4-dihydropiridine.

TRANSPLANTOLOGY

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Pre-transplantation treatment factors in predicting short-term kidney graft function

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Introduction

Kidney transplantation (KTx) is a common method of treatment for the patients with end-stage renal disease. Inflammation is a proven trigger which is taking part in kidney graft rejection. As changes in balance of particular blood properties are the indicators of inflammation, assesing them seems to be useful in predicting kidney graft function.

Aim of study

The purpose of the study was to assess which, if any, pre-treatment factors can be used in predicting short-term kidney graft function.

Materials and methods

We have conducted a retrospective single center study. We have collected data on 231 patients admitted to the Department of General and Transplant Surgery due to renal transplantation. Patients basic demographic data (age, gender, BMI), pre-treatment morphology and clinical information(warm ischemic time-WIT; cold ischemic time-CIT and immunosuppression regimen) were analyzed. As for the recovery period, we obtained serum creatinine level (sCr) on the 1^{st}, 2^{nd} post-transplantation day and 3 weeks after the KTx.

Using this data, we have calculated pre-treatment factors such as Neutrophil to Lymphocyte ratio (NLR), Platelet to Lymphocyte ratio (PLR), Lymphocyte to Monocyte ratio (LMR) and creatinine reduction ratio (CRR) (difference in sCr between 1^{st} and 2^{nd} post-transplantation day in %). In order to assess graft's function in the short-term period after KTx eGFR on 21^{st} post-transplant day was calculated using MDRD formula. Afterwards, patients were divided into two groups- those with good (>= 30 eGFR) and poor graft function (

Results

The study group consisted of 97 patients with good and 134 with poor graft function. The groups were homogenous in terms of gender and immunosuppression regimens distribution, age, WIT, CIT. Statistically significant differences were found for all the pre-treatment factors- NLR (Mean of $group_{>=30}$=14 vs Mean of $group_{<30}$= 8,95; p=0,03), PLR (Mean of $group_{>=30}$=275,5 vs Mean of $group_{<30}$= 197; p=0,015), LMR (Mean of $group_{>=30}$=2,29 vs Mean of $group_{<30}$= 2,76; p=0,023), CRR (Mean of $group_{>=30}$=-2,8% vs Mean of $group_{<30}$= -14,8%; p=<0,0001) and BMI (Mean of $group_{>=30}$=-23,6 vs Mean of $group_{<30}$= 25,3; p=0,001). On the univariate analysis in the logistic regression model, all these variables were a significant predictive factors of graft function. On multivariate analysis, only PLR, BMI and CCR remained significant. Using the final multivariate model, we have assessed whether it is useful in predicting short-term graft function. The ROC curve built for the model had area under curve (AUC) of 0,7. With the optimal cut-off point specificity of 80% and sensitivity of 51,5% were achieved.

Conclusion

Suggested pre-treatment factors can be used with good results to predict which patients will develop poor graft function in short-term period. Those patients should be closely monitored and may require additional therapy. Further research may reveal what kind of therapy is beneficial to them.

Simultaneus pancreas-kidney transplantation as a treatment for diabetes mellitus type II

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Introduction

Simultaneous pancreas- kidney transplantation (SPKT) is the best treatment option for type I diabetes patient who develop end stage renal disease. Although controversial, this method has been also successfully used in type II diabetes.

Case Report

A 43- year-old man was admitted to the hospital for SPKT. Poorly controlled type I diabetes was complicated by end stage renal failure, hypertension, retinopathy, neuropathic diabetic foot syndrome and polyneuropathy. The patient was suffering for DM1 for 23 years and was treated with peritoneal dialysis /hemodialysis and intensive insulinotherapy.

Immediately prior to transplantation blood test were run and surprisingly C-peptide level was 0,99 ng/ml (normal range 0,78-5,19 ng/ml). This was contradictory to original diagnosis of the type I diabetes. However, due to low daily insulin intake, the patient proceeded to SPKT.

Post-op course was complicated by perirenal hematoma, which required surgery and delayed renal graft function, which needed hemodialysis. Insulinotherapy was not discontinued. The patient was discharged home after 13 days. Only one oral anti-diabetic medication – gliclazide was prescribed.

Conclusion

Simultaneous pancreas- kidney transplantation with oral anti- diabetic medications might be an acceptable treatment option for type II DM patient.

Preoperative high level of bilirubin and postreperfusion syndrome as the main risk factors of primary graft dysfunction after Orthotopic Liver Transplantation (OLTx)

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Introduction

Primary graft dysfunction (PGD) is a multifactorial syndrome with great impact on liver transplantation outcomes. PGD is related to ischemia-reperfusion injury to the transplanted organ and may be subdivided into early allograft dysfunction (EAD) and primary nonfunction (PNF). EAD is established when one or more of the following variables were present: serum bilirubin levels ≥10mg/dL; INR ≥1.6 on postoperative day 7. PNF is the most severe manifestation of graft dysfunction defined as need for retransplantation up to day 10 or death due to graft nonfunction.

Aim of study

The aim of the study was to determine preoperative and intraoperative risk factors of primary graft dysfunction occurrence.

Materials and methods

It was a single-centre, retrospective registry of 90 patients who underwent the OLTx between 2013 and 2015 years in Clinical Department General, Vascular and Transplant Surgery in Katowice. The intraoperative data were collected from anesthesia carts and other data from medical histories. The statistical analysis was performed using proper tests.

Results

The mean age was 49 years old with males domination (60%). Primary graft dysfunction has occurred in 13% (n=12) of patient and PNF made up 5,5% (n=5), EAD 7,5% (n=7). In the results the most important preoperative factors of PGD were: MELD (OR=1,11, p=0,01), and bilirubin level (OR=1,01, p<0,001). From intraoperative variables crucial were: minimal level of hemoglobin (OR=0,59, p=0,04), units of red cell mass transfusions (OR=1,16, p=0,04) and percent of MAP variability after reperfusion (OR=0,94, p=0,03). From the area under curve (AUC) the cut-off points were estimated for each significant variable. . In multivariate analysis the most important factors turn out: postreperfusion syndrome (OR=5,02, p=0,01) and preoperative bilirubin level ≥ 17 mg/dl (OR=20, p<0,001).

Conclusion

The main risk factors of primary graft dysfunction after OLTx are preoperative bilirubin level ≥ 17 mg/dl and postreperfusion syndrome.

The evaluation of the risk factors of acute kidney injury after Orthotopic Liver Transplantation

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Introduction

Acute kidney injury (AKI) is a frequent complication after orthotopic liver transplantation (OLTx) and it ranges from 40-70%. Impaired renal function is associated with prolonged hospitalization, increased mortality and risk of chronic renal failure in the late post-OLT period.

Aim of study

The aim of the study was to determine preoperative as well as intraoperative risk factors of AKI occurrence in patients after OLTx.

Materials and methods

It was a single-centre, retrospective registry of 90 patients who underwent the OLTx between 2013 and 2015 years in Clinical Depaaartment General, Vascular and Transplant Surgery in Katowice. The intraoperative data were collected from anesthesia carts and other data from medical histories. The statistical analysis was performed using proper tests.

Results

The mean age was 49 years old with males domination (60%). AKI occurred in 58% (n=52) of patients. In the results the most important preoperative factors were levels of: protrombin (OR=0,96, p=0,002), INR (OR=4,8, p=0,01), hemoglobin (OR=0,79, p=0,02), Na (OR=0,89, p=0,03) and toxic etiology (R=4,6, p=0,03). From intraoperative factors crucial were: minimal level of hemoglobin (OR=0,61, p=0,007), units of cell-saver (OR=1,12, p=0,01) and red cell mass (OR=1,19, p=0,02) transfusions. From the area under curve (AUC) the cut-off points were estimated for each significant variable. In multivariate analysis the most important factors turn out: INR > 1,38 (OR=6,48, p<0,001) and minimal hemoglobin during operation <6,4 g/dl (OR=7,25, p<0,001).

Conclusion

The most important risk factors of AKI after OLTx are: INR with cut-off point >1,38 before surgery, toxic etiology of liver failure, and minimal intraoperative hemoglobin level < 6,4 g/dl.

Results of transplantation of kidneys harvested from elderly deceased donors in medium-term follow-up period

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Introduction

Aging of population and permanent shortage of organs for transplantation result in increasing number of kidneys retrieved from elderly donors. However, transplantation of kidneys from elderly donors suffering from numerous comorbidities is related to fear of impaired renal graft function in postoperative period.

Aim of study

The aim of the stady was to analyse results of kidney transplantation (KTx) in recipients of kidneys harvested from donors over the age of 60 years in comparison to those who received kidneys from donors aged 40-59 years.

Material and methods

54 recipients of kidneys from donors aged over 60 years (group >60), and 236–40-59 years (group 40-59) who underwent KTx from 2004 to 2013 were enrolled into the study. Patient and kidney graft survival, as well as kidney graft function were analysed 1,3, and 5 years after KTx.

Results

1, 3, and 5 years patient survival in group >60 was 85%, 82% and 82% compared to 95%, 92% and 90% in group 40-59. Kidney graft survival was 98%, 94% and 93% in group >60 and 95%, 91% and 87% in group 40-59 respectively.

Conclusion

The survivals of patients who received kidneys form elderly donors is worse compared to recipients of kidneys from younger donors but still satisfying. The survival of the transplanted kidneys harvested from elderly and younger donors are similar.

The evaluation of behavioral choices and compliance with lifestyle recommendations among kidney transplant recipients: A survey study

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Introduction

Several patient-dependant factors influence the long-term graft and recipient survival. It is crucial that the patients are aware of this impact. Equally important is the attention of the doctors; they should bear in mind the possibility of non-compliance and properly advise and educate the transplant recipients.

Aim of study

The aim of this study was to evaluate behavioral choices and compliance with lifestyle recommendations among kidney transplant (KTx) recipients.

Material and methods

We enrolled 90 KTx patients (31 F; 59 M) with good stable graft function, attending routine posttransplant outpatient visits, treated either with Tacrolimus or Cyclosporine. All patients underwent a questionnaire regarding the use of dietary supplements (DS) and over-the-counter (OTC) medications without medical consultation, diet and addictions, self control of blood pressure and blood sugar (in diabetic patients). In the end of the survey, the patients were asked to evaluate their knowledge about lifestyle recommendations for KTx recipients.

Results

The mean age of the population was 53.5±12.9 years and their mean time after transplantation was 6.0±1.7 years. 28.9% of patients admitted their use of OTC medications without medical consultation, with an equal number ingesting DS. 34.8% of the patients taking either OTC or DS did not inform neither the transplantologist nor their family doctor about this fact. 7 patients (8.5%) admitted to occasionally forgetting about immunosupressive medications. Two-thirds of the patients drank coffee; one-fifth - alcohol, and 6.7% were smokers. The majority (57.8%) declared limiting their caloric intake and even more (83.3%) limited their salt intake. Two-thirds of the patients measured their blood pressure at least once a day. Among the 24 patients with diabetes mellitus, 37.5% measured their blood glucose level less often than once a week or did not control it at all. On average, the patients evaluated their knowledge about lifestyle recommendations for transplant recipients as 3.8 on a scale of 1 to 5.

Conclusion

The majority of KTx patients regularly ingested immunosuppressive medications, limited their salt intake and were non-smokers. Most patients who used dietary supplements or OTC medications consulted this with their doctor. Patients' evaluation of their knowledge regarding lifestyle recommendations for KTx recipients was relatively good - this assessment, however, may not have always been justified.