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Summary

Due to the combination of attractive mechanical properties, biocompatibility and resistance to corrosion, the Co-Cr based alloys are widely used for manufacturing of dental joints, implants and other medical devices. However, some drawbacks related to low hardness and wear resistance can be mentioned. These limitations depend mostly on the surface properties and can be overcome by an appropriate technology for surface manufacturing. In recent years, the deposition of coatings has been widely used for improving the properties of the materials. There exist some technologies for depositing thin films and coatings, including physical vapour deposition (PVD), chemical vapour deposition (CVD), among others. The direct current (DC) magnetron sputtering (MS), which is a part of PVD, is among the most promising technologies for the manufacturing of coatings. It provides good reproducibility and structure; thickness and properties can be well controlled. The surface treatment of the materials employing a scanning electron beam is another method of improving the properties of the materials. The treated specimen is rapidly heated up to a specific temperature and cooled where the cooling rate reaches 10^6 K/s. This leads to phase transitions, grain size refinement and changes in the functional properties. This work aims to investigate the possibilities for improving the properties of Co-Cr based alloys by deposition of bilayer TiN/TiO_2 coatings, electron beam treatment, as well as a combination of both methods. The obtained results are discussed concerning the materials' requirements for implant manufacturing.

INTERNAL DISEASES

PLENARY LECTURE

CARDIAC SARCOIDOSIS – A NOT SO RARE TYPE OF CARDIOMYOPATHY WITH RHYTHM DISTURBANCES

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Summary

Cardiac involvement can occur in patients with pulmonary or systemic sarcoidosis with varying symptoms and severity. It can mimic virtually every type of cardiomyopathy and is therefore frequently misdiagnosed. Even more challenging are the cases of isolated cardiac sarcoidosis which are considered rare, often remain unrecognized and have grave prognosis if left untreated with immunosuppressive therapy. The key to the accurate diagnosis requires alertness for the symptoms which, although not specific, have typical clustering and evolution. The positive cardiac biopsy with noncaseating granuloma confirms the diagnosis but it has low diagnostic yield and can be omitted in many cases. Ultimately, the cardiac magnetic resonance and positron-emission tomography gained in importance and are increasingly used to corroborate the diagnosis and for follow-up of the patients. The presentation tackles the protean appearance, the difficulty of making the correct diagnosis and the challenges in the treatment of cardiac sarcoidosis.

Key words: systemic sarcoidosis, cardiomyopathy, cardiac sarcoidosis.

ORAL PRESENTATIONS

INDICATIONS AND TECHNICAL IMPLEMENTATION OF VERTEBRAL ARTERIES CATHETER INTERVENTIONS

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Summary
The vertebral arteries supply about 20% of the human brain, including vital structures as the medulla oblongata, pons, cerebellum and medulla spinalis. The study aimed to evaluate the technical aspects and the rate of success of vertebral arteries catheter interventions. We evaluated 58 consecutive symptomatic patients for vertebral arteries abnormalities. All of the patients had a history of ischemia in that region. All patients underwent a Doppler ultrasound, selective carotid and vertebral arteries angiography. In 8 of the patients, we found significant atherosclerotic lesions. Two of them were in V2 and the rest – in V1 segments. All of the lesions were stented using bare-metal stents. The direct stenting technic was used. The stent size was 3.5 or 4.0 mm in diameter and 12 to 18 mm in length. The procedural success was 100%, and no complications were recorded in the group. The in-hospital and up to one-month follow-up of patients showed a substantial improvement in their symptoms. The interventional vertebral arteries treatment, which uses direct stenting technology, is technically feasible and leads to symptoms improvement in patients with vertebrobasilar ischemia.
Key words: vertebral arteries, angiography, intervention, stenting

PREVALENCE AND TYPE OF UNCOMMON EGFR MUTATIONS IN NSCLC IN THE BULGARIAN POPULATION

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Summary
Targeted therapies have changed the treatment paradigm in advanced and metastatic non-small cell lung cancer (NSCLC). Genetic testing for activating mutations in the EGFR gene has become an essential part of routine clinical practice. Frequent mutations in the EGFR gene such as del19 and L858R proved their clinical significance for the first-line treatment with tyrosine kinase inhibitors (TKIs). However, there are still other detected mutations in the EGFR gene, which are generally defined as uncommon or rare, where TKIs do not have such a priority in the treatment and are still a diagnostic and treatment challenge. This study intended to detect the frequency and type of those rare mutations in the Bulgarian population. We used paraffin-embedded tumours tissue samples from more than 5000 patients in stage IIIB, and IV NSCLC tested for EGFR mutations exons 18-21 in two reference labs in Sofia and Pleven. Two methods were used: DNA extraction based on real-time PCR from formalin-fixed, paraffin-embedded tumours tissue samples using Cobas® DNA Sample Preparation Kit, Roche or DNA extraction from FFPE tumour tissue using QIAamp DNA FFPE Tissue Kit® (Qiagen). The quantity and quality of extracted DNA were assessed by NanoDrop 1000 spectrophotometer (Thermo Scientific). Real-time PCR amplification by the Scorpions Amplification Refractory Mutation

System (SARMS) method was used to detect mutations in the EGFR gene exons 18-21. From all tumour samples tested between November 2010 and April 2019 (72% former or current smokers, 2/3 male, 1/3 female with a median age at diagnosis 63years, 58% stage IV) we detected 36 cases of rare mutations. Subgroup analysis of those cases showed prevalence of males - 20 males, 16 females; 12 never-smokers, and 24 current or formal smokers. Detected uncommon EGFR mutations were G719X (8 cases), ins exon 20 (7cases), L861Q (10 cases), S768I (6 cases). In 4 cases, double mutations were found - L858R/S768I; G719X/L861Q; S768I/L861Q; S768I/G719X. EGFR uncommon mutation is rarely detected in genetic testings. Our study revealed the prevalence of those mutations in the Bulgarian population and raised questions for the most appropriate therapeutic approach for such patients since not all mutations are reported to benefit from first-line EGFR-TKIs.

TRENDS IN BULGARIA ON OCCUPATIONAL DISEASES DETECTION AND REAL SITUATION - HISTORY AND STATISTICS ON ACTIVITIES OF DIVISION OF OCCUPATIONAL DISEASES AND TOXICOLOGY, MEDICAL UNIVERSITY – PLOVDIV

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Summary
The aim of this study was to compare the level of detection of occupational diseases in Bulgaria to other European countries, to present expertise and healthcare activities of the Division of Occupational Diseases, Medical University Plovdiv for the last 5 years, according to the contract with Working Conditions Fund, and better recognition for work-related problems to be accomplished. Statistical data from the International Labour Organization, National Statistical Institute and National Program for Safety and Work-related Health 2018-2020 were considered. A detailed overview and analysis of all the reports about results of the diagnostic and healthcare activities for the period 2014-2018, based on the contract between Working Conditions Fund and St Georgi University Hospital - Plovdiv were conducted. A lower level of detection of occupational diseases in Bulgaria in comparison to EU member countries was found. For the last five years, 824 patients were hospitalized, and occupational ethology was confirmed and reported in 49% of cases. Harmonization of the legal framework with European legislation and good practices implementation could significantly improve working conditions standards and increase the level of detection of occupational diseases.
Key words: occupational health, detection of occupational diseases, working conditions fund

SOURCES OF ACUTE UPPER GASTROINTESTINAL TRACT BLEEDING

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Summary

The acute upper gastrointestinal tract bleeding is a life-threatening condition with significant medical expenses and high death rate. For a period of 3 years, urgent endoscopic examinations of 714 patients with acute non-variceal bleeding from the upper GIT (age range 18-94 years, 491 men and 223 women) were performed at the Department of Gastroenterology. The most common cause for bleeding was the ulcerative lesion – 497 patients (69.61%). According to its localization the patients were divided into several subgroups: duodenal ulcer – 192 patients, gastric ulcer – 149 patients, anastomotic ulcer after stomach resection – 3 patients, ulcer in the small intestine after stomach resection – 3 patients, and double localization – 150 patients. The activity of the ulcerative bleeding was evaluated using Forrest`s classification: Forrest I – 105 patients: Ia 15, Ib 90; Forrest II – 256 patients: II a 130, IIb 36, IIc 90; Forrest III – 136 patients. Other causes included erosions – 104 patients, esophagitis – 45 patients, malignant gastric diseases – 36 patients, hiatal hernia – 11 patients, Mallory Weiss syndrome – 4 patients, gastric polyps – 6 patients, esophageal cancer – 6 patients, and rare sources – Dieulafoy`s lesion, GAVE-syndrome, carcinoma of the papilla of Vater, aortoileal fistula caused by a prosthetic decubitus of duodenal fistula. The main reason for non-variceal bleeding from the upper GIT was peptic ulcer disease (69.6%), followed by erosions (14.6%) and esophagitis (6.3%). One-third of the patients with ulcerative bleeding had more than one lesion.

Key words: endoscopy, sources, bleeding, ulcer, Forrest

RISK FACTORS FOR PEPTIC ULCER BLEEDING

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Summary

The use of medications and the Helicobacter pylori (HP) infection are the main risk factors for gastroduodenal mucosal damage. We aimed to analyze the relevance between acute bleeding from an ulcerative lesion, HP infection and the most used medications: nonsteroidal anti-inflammatory drugs (NSAIDs) and antithrombotic drugs. This research included 343 patients with bleeding ulcers, and each underwent urgent upper endoscopy. Information about the medication intake was collected from the patients and medical documentation. The HP infection was evaluated with invasive and non-invasive methods. Medication use was found in 65.1% of the patients with duodenal ulcer (DU), 83.2% with a stomach ulcer (SU), and in 91.3% - with double localization. The incidence of HP infection was 71.4% in SU, and 81.2% in DU. Medications as a single risk factor were found in 25.9%, and infection – in 29.7%. The presence of two risk factors was proved in 41.7% of the patients. In 2.7% of the cases, neither infection nor medication use was found. Use of NSAIDs was found in 67.6% of the patients, independently from the HP status. An Essential difference was noted in the localization of the lesion: SU – 84.8%, DU – 54.2%. This warrants the assumption that medications are the leading risk factor for SU and HP infection for DU. People who use NSAIDs and are infected with HP are at risk twice as high two for bleeding, as compared to the uninfected. Knowledge and prevention of the risk factors provoking ulcer bleeding determine the success in the therapy of this severe complication.

Key words: risk factors, Helicobacter pylori, medications, bleeding

COMPLICATIONS OF INVASIVE ENDOSCOPIC PROCEDURES ON THE HEPATOBILIARY TRACT

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Summary

Endoscopic retrograde cholangiopancreatogra-

phy (ERCP) is a complicated, highly specialized, invasive endoscopic procedure. It is a combined endoscopic and fluoroscopic method for visualizing bile and pancreatic ducts. It is combined with therapeutic manipulations – papillosphincterotomy, gallstone extraction, stent placement. It is related to complications – pancreatitis, haemorrhage, cholangitis, and perforation. This study aimed to determine the incidence of the complications provoked by the papillosphincterotomy and the reaction when they occur. In this research, we included 311 patients aged 19 to 92 years, admitted to the surgical and gastroenterology departments in Dr. Georgi Stranski University Hospital – Pleven for a period of 4 years (May 2014 – April 2018) on the occasion of mechanical jaundice on whom ERCP with papillosphincterotomy was performed. ERCP was performed by video duodenoscope TYPE TJF-145 and TJF-Q180V with side viewing optics by "Olympus" and accessories by "Endo-Flex". From the 311 patients studied, 154 (49.5%) were men, and 157 (50.4%) – women. The most common age group was 70-79 years – 111 (35.7%) patients. The leading causes of mechanical jaundice were choledocholithiasis (132 patients – 42.4%) and malignant diseases (95 patients – 30.5%). Complications observed were as follows: haemorrhages – 11 patients (3.53%), pancreatitis – 10 patients (3.21%), cholangitis – 3 patients (0.96%), and perforation – 4 patients (1.28%). Papillosphincterotomy remains an endoscopic procedure, which could lead to life-threatening complications. Every invasive gastroenterologist must be well informed with the risk factors for complications, their early recognition, and therapeutic approach

Key words: jaundice, endoscopy, ERCP, papillosphincterotomy, complications

THE ROLE OF ADIPONECTIN AND ADIPOCYTOKINES – INTERLEUKIN-1, INTERLEUKIN-6 AND TUMOR NECROTIC FACTOR-A IN THE PATHOGENESIS OF METABOLIC SYNDROME

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Summary

The present study aimed to examine the serum levels of adipokines – adiponectin and adipocytokines – interleukin-1(IL-1), interleukin-6 (IL-6) and tumour necrotic factor-α (TNF-α) in patients with metabolic syndrome (MS) without disturbance of carbohydrate metabolism. A prospective comparative observational study was performed. We measured and compared the serum levels of adipokines – adiponectin and adipocytokines – IL-1, IL-6 and TNF-α in 35 subjects with MS (n_1=35) and 35 clinical health subjects (n_2=35). Two homoeostasis models for assessment of insulin resistance (HOMA-IR) and β-cell function (HOMA-%B) were calculated. When comparing the MS with the controls, statistically significant differences in body mass index, waist circumference, systolic and diastolic blood pressure, HDL-cholesterol, basal insulin in the fasting state and HOMA-IR were found. A significantly higher level of IL-1 (n_1=14.83±5.07 vs. n_2=6.4±.3.7 pg/ml; p<0.001) and IL-6 (n_1=0.65±0.22 vs. n_2=0.34±0.2 pg/ml; p=0.03) were detected in patients with MS in comparison

with the control group. The patients with MS had a significantly lower level of TNF-α in comparison with controls (n_1=2.49±1.17 pg/ml; n_2=11.49±.8.57 pg/ml; p=0.002). In MS, we have found a positive correlation between IL-1 and HOMA-%B and negative correlation between adiponectin and BMI. The patients with MS exhibited significant changes in levels of adiponectin, IL-1, of IL-6 and TNF-α. Indicated adipokines and adipocytokines may have a predictive value of progression from normal to pathological carbohydrate metabolism.

Key words: metabolic syndrome, adiponectin, interleukin-1, interleukin-6, tumour necrotic factor-α

INDICATIONS AND TECHNICAL IMPLEMENTATION OF VERTEBRAL ARTERY CATHETER ANGIOGRAPHY

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Summary

Vertebral arteries supply a substantial part of human brain, including medulla oblongata, pons, cerebellum and medulla spinalis. Dysontogenesis, atherosclerosis, vascular spasm and external compression are the leading causes of vertebral blood flow deterioration. The aim of the study was to evaluate the variations in vertebral arteries anatomy and pathology in patients diagnosed with ischemia in the vertebrobasilar vascular system. We evaluated 58 consecutive patients with a clinical history of vertebrobasilar ischemia by Doppler sonography and invasive angiography. In all cases, selective angiography of carotid and vertebral arteries was implemented. We found a remarkable variation in vertebral arteries size. Two patients had an anomalous origin of the left vertebral artery from the aorta. In 8 of them, a significant atherosclerotic lesion – 6 in V1 and 2 in V2 segments were found. In 4 patients there was a considerable tortuosity in V1 and V3 segments. In 1 patient, external compression in the V2 section of the right vertebral artery was found during right side head torsion, causing the so-called Bow Hunter's phenomenon. The vertebral arteries are vital for cerebral circulation, but their pathology sometimes is underestimated. We found significant variations in their size and pathology.

Key words: vertebral arteries, angiography, ischemia

CLINICAL IMPORTANCE OF PERIPHERAL ULTRASOUND DIAGNOSTIC IN PATIENTS WITH HIGH-GRADE AORTIC STENOSIS SCHEDULED FOR ELECTIVE AORTIC VALVE REPLACEMENT

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Summary

The aim of the study was to evaluate the severity of peripheral artery disease (PAD) and carotid artery atherosclerosis in patients with high-grade aortic stenosis (AS), planned for aortic valve replacement (AVR) by using doppler ultrasound and colour-coded duplex sonography. We studied 40 patients from the Department of General Cardiology of the University Hospital "Heart and Brain", Pleven, with high-grade AS, scheduled for elective cardiac surgical treatment. All of them received Doppler and Colour-coded duplex

sonography of the extracranial brain vessels, abdominal aorta and lower limb arteries. Of the 40 patients included in the study, 21 (52.5%) were men, and 19 (47.5%) were women, aged 50 to 90 years old. In 8 patients (20%), high-grade carotid stenosis was found, six of them (15%), had moderate, and 12 (15%) had low-grade stenosis. Ten of the patients (25%) had various degree of PAD, and 5 (12.5%) had combined peripheral and carotid artery involvement. No presence of carotid and peripheral illness was found in 9 patients (22.5%). Preoperative peripheral ultrasound diagnostic in patients with high-grade AS is a reliable screening method for detection of concomitant carotid and peripheral vascular pathology, present in a large proportion of the patients studied. Ultrasound examination of elective candidates for aortic valve surgery alongside with appropriate treatment could significantly reduce the risk of perioperative stroke and lower limb ischemia.

Key words: peripheral artery disease, carotid atherosclerosis, aortic stenosis, colour-coded duplex sonography.

CLINICAL STUDY OF THE GENES EXPRESSION OF LIPOPROTEIN LIPASE AND METALLOPROTEINASE ADAM29 IN PATIENTS WITH B-CHRONIC LYMPHOCYTIC LEUKAEMIA

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Summary

As part of the indolent lymphomas, chronic lymphocytic leukaemia has a variable clinical course, based on genetics, molecular and epigenetic changes. The aim of our study was to investigate the presence of a correlation between the ratio of gene expression of the enzyme lipoprotein lipase to disintegrin metalloproteinase-29, as a surrogate marker of IGVH mutation status, and cytogenetic abnormalities in untreated patients with B-chronic lymphocytic leukaemia. Fifty treatment-naïve patients diagnosed with B-chronic lymphocytic leukaemia based on the criteria of the International Working Group of Chronic lymphocytic leukaemia in 2016, were included in the study. We used the method of fluorescent in situ hybridisation to determine cytogenetic abnormalities. The most common structural rearrangements in chromosomes were detected by locus-specific sample sets. Mutation status was determined by a quantitative real-time polymerase chain reaction. The results of our study did not find a significant correlation between chromosomal aberrations: del 17p, del 11q, del 13q and mutation status in untreated patients with B- chronic lymphocytic leukaemia.

Key words: genetics, leukaemia, lipoprotein lipase

FREQUENT EXACERBATORS ARE NOT A STABILE PHENOTYPE

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Summary

Frequent exacerbators among COPD patients are known to cause serious economic and social burden, but the stability of the phenotype is not widely accepted. The aim of this study was to estimate the long-term stability of frequent COPD exacerbators. We followed 465 unselected COPD patients for moderate and severe AECOPD during a 7 year period (2012-2018). We defined a case of frequent exacerbations (FE case) as a patient who had 2 or more exacerbations for any of the study years. We followed each FE case for the next two years. FE cases were between 9.12% and 12.14% of COPD patients for study year 1 to 7. However, FE cases accounted for up to 59.17% of the AECOPD in the current year and up to 32.50% of AECOPD for the next year. We found 169 FE cases for study year 1 to 5. In the first year of the follow up we found that 31.95% of them continued to be frequent exacerbators. Only 15.38% continued to be FE cases during the following two years. FE cases were relatively a stable proportion of all COPD patients each year. Despite of this, it turned out that they consisted of different patients each year, as long as only 1/3 of FE cases continued to be FE cases in the next year and less than 1/6 in the following two years.

Key words: COPD, frequent exacerbators

MANIFESTATIONS OF OBSTRUCTIVE SLEEP APNEA IN MEN AND WOMEN

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Summary

There are some gender differences in clinical manifestations of obstructive sleep apnea (OSA). The objective was to study differences in clinical manifestations of OSA in men and women. Patients conducted sleep study and were added to a registry. Statistical analysis was performed using SPSS 19.0. A total of 255 patients (mean age 56±15) took part in the study – 26 of them performed polysomnography and other 229 – polygraphy. Men prevailed - 81.6%. Mean apnea-hypopnea index (AHI) of all patients was 51.9±32 (54.7±32 for men vs. 40.7±31 for women, $p<0.01$). Men were more obese with mean weight of 112.7±22 vs. 103±24 kg ($p<0.01$) (BMI 37.4±7 vs. 41±9, $p<0.05$). There was also difference in neck circumference with 46.5±4 for men vs. 42.6±7 cm for women ($p<0.001$). There were differences in clinical manifestations – women more often complained of night awakenings (83.0% vs. 67.3%, $p<0.05$), morning fatigue (83.0% vs. 63.9%, $p<0.01$), morning headache (57.4% vs .33.2%, $p<0.01$), feeling of depression (38.3% vs. 20.2%, $p<0.01$) and memory loss (46.8% vs. 37.5%, $p<0.05$). There were gender differences in OSA patients. Men were usually are more obese with higher AHI and manifested at younger age. Women were more likely to complain of night awakenings, morning fatigue and headache, feeling of depression and memory loss. These features should be considered and could help for early and correct diagnosis.

Key words: obstructive sleep apnea, gender differences

POSTERS

SERUM LEVELS OF ANGIOTENSIN II AND TISSUE INHIBITOR OF MATRIX METALLOPROTEINASE-3 IN PATIENTS WITH HEART FAILURE AND ESSENTIAL HYPERTENSION

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Summary

Angiotensin II (AII), the central product of the renin-angiotensin system is well-known to cause potent increases in systemic and local blood pressure. Recent data have shown that the tissue inhibitor of metalloproteinases-3 (TIMP-3) preserve arterial extracellular matrix (ECM) in response to AII. Arterial hypertension (AH) is a leading cause for heart failure with mid-range ejection fraction (HfmrEF). We aimed to measure the levels of AII and TIMP-3 in sera of patients with AH and HFmrEF and controls. We examined 56 patients with AH and HfmrEF (mean age 65.62±9.69), and 22 age and sex-matched healthy subjects (mean age 56.4±5.53). Forty-one patients had hypertension-mediated organ damage (heart damage-21, brain damage-6, kidney damage- 10, eye damage-4), and 15 were without organ damage. The patients were divided into two subgroups: subjects with left ventricular hypertrophy (n=32); (HFmrEF+LVH), and subjects without left ventricular hypertrophy (n=24); (HFmrEF-LVH). ELISA was used for measuring AII and TIMP-3. Patients with HFmrEF-LVH showed higher levels of TIMP-3 – 7.747 (1.219÷16.725) than HFmrEF+LVH – 4.693 (2.062÷10.463); (KW=0.48; p=0.48) and healthy controls – 6.460 (1.007÷12.520); (p>0.050), but not significantly. Patients with HFmrEF+LVH showed statistically significantly higher levels of AII: 8.533 (1.477÷13.009) than HFmrEF-LVH 1.333 (0.477¸6.932) and healthy controls – 1.539 (0.274¸5.218); (KW=3.48; p=0.04). AII correlated with TIMP-3 (r=-0.50; p=0.001), hypertensive cerebrovascular damage (r=0.57; p=0.001), DBP (r=0.30; p=0.050), stage of AH (r=0.47; p=0.001); CK-MB (r=0.42; p=0.002) and uric acid (r=0.35; p=0.020). TIMP3 correlated with the grade of AH (r=0.85; p=0.020), and the stage of AH (r=-0.52; p=0.050). Our data suggest an association between changes in serum levels of AII and TIMP-3. In summary, we provide evidence that AII/TIMP3 interaction plays a role in the development and progression of LVH in patients with heart failure with mid-range ejection fraction.

INCIDENCE OF HETEROZYGOUS FAMILIAL HYPERCHOLESTEROLEMIA AMONG PATIENTS IN A REGION OF NORTH BULGARIA

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Summary
Our objective was to analyze the spread of heterozygous familial hypercholesterolemia (HeFH) in the Pleven region, Bulgaria, as one of the undiagnosed causes of early onset of coronary artery disease (CAD).

A cross-sectional study was conducted on 62 patients who took part in a screening program organized by the Department of Cardiology at the University Hospital of Pleven. The patients filled in questionnaires. Blood samples were taken for laboratory tests. The estimation made was based on the Dutch Lipid Network Criteria (DLNC). Of the patients studied, 70.97% (n=44) were males. In the group of men, one patient – 2.27% (n=1) had a definite HeFH, 13.63% (n=6) had a probable HeFH; 77.27% (n=34) – possible HeFH and 6.81% (n=3) – were with unlikely HeFH. In the group of women, one patient - 5.55% (n=1) was with a probable HeFH; 72.22% (n=13) had a possible HeFH, and 22.22% (n=4) had unlikely HeFH. In this study, 20.97% (n=13) of the patients had no CAD; 35.48% (n=22) – had stable angina; 12.90% (n=8) – were with unstable angina and 12.9% (n=8) – had survived acute myocardial infarction. There is no sufficient number of epidemiological studies on HeFH in Bulgaria. Our work aims to start evaluating such kind of patients because of early diagnosis and prophylaxis.

Key words: hypercholesterolemia HeFH, coronary artery disease

PREDICTORS FOR LONG-TERM PROGNOSIS AFTER ACUTE CORONARY SYNDROME

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Summary
This study aimed to identify factors that determine short-term and long-term mortality in patients with acute coronary syndrome. The study included 172 patients with acute coronary syndrome (STEMI, NSTEMI, UA), hospitalized in urgency in the Invasive Cardiology Ward of Stara Zagora Hospital and the Cardiac Clinic Yambol from January 2009 to February 2010. Patients were included prospectively and followed up until the first year and retrospectively the 5th year after ACS. We found a statistically significant difference regarding the age of occurrence of the acute coronary event between women and men (p=0.018) in the group. The women were significantly more exposed to high risk (28.8%) than men (13.3%). A statistical significance was found between the risk of death on the 6th month between the genders (p=0.048). The average glomerular filtration, calculated on MDRD, was 71.8ml/min. Also, there was a statistically significant difference in the average value between both genders 76±24.0 in men and women (p=0.001), with no difference in the diagnosis (p=0.14). The univariable regressive analysis showed that age (p=0.005, OR 1.024), glomerular filtration <90ml/h (p=0.006, OR 0.964), GRACE>140 pt.(p<0,001,OR 1.045), presence of HF (Killip class >=II). (p=0.002, OR(15600) and EF<40% (p=0.003, OR 1) were risk factors for unfavorable short-term and long-term prognosis. The multivariable regressive analysis demonstrated only GRACE score as an

unfavourable independent predictor (p=0.002, OR 1.052). The cumulative survival at year 1 was 82%, at 79% in year 2, and 76% in year 3. Predictors for poor prognosis for ACS were age, decreased glomerular filtration, left ventricular systolic dysfunction, and high GRACE score.

Key words: ACS, risk factors, atherosclerosis

LYMPHOCYTE SUBPOPULATIONS IN PERIPHERAL BLOOD IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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Summary

Insulin resistance is responsible for the activation and persistence of low-grade chronic inflammation among patients with type 2 diabetes mellitus (T2DM). This chronic inflammatory process is accomplished by increasing and activating different immune cells. The aim was to investigate the lymphocyte subpopulations [CD3, CD3-(CD16+/CD56) CD4, CD8, CD19] in patients with T2DM. A prospective comparative observational study was conducted among the 61 patients with T2DM (n_1=61) and 21 healthy participants (n_2=21). The non- specific T-lymphocyte subtypes [total T-lymphocyte (CD3+); T-helper (CD4+); T-cytotoxic (CD8+), NK cells (CD3\ CD16+/CD56) and B - lymphocyte (CD19) were measured in peripheral blood by using flow cytometric analyses (FAC Sort, BD). The Th/Ts ratio was calculated. Significant differences were found between the count of total T-lymphocytes (CD3+) between patients of the two groups (n_1=1616±487.29; n_2=1120±; p<0.05). The levels of NK cells (CD3\ CD16+/ CD56) (n_1= 385±86.82 vs n_2=271.19±19.01; p= 0.060), T-helper (CD4+) (n_1=1082±418.33 vs n_2=728.81±31.72; p<0.05) and T-cytotoxic (CD8+) lymphocytes (n_1=515.1±265=57 vs n_2=783.48±81.12; p<0.05) were different among the patients with T2DM,as compared to control group. The levels of B-lymphocytes (CD19+) were lower in patients with T2DM (n_1=186.02±26.07; n_2=287.68±23.53; p<0.05). The ratio Th/Ts was found to be statistically higher in all patients with T2DM. These findings made us conclude that the immune response in metabolic syndrome and T2DM was activated, but we could not fully explain it.

Key words: diabetes mellitus type 2, lymphocytes, flow cytometry

BILIARY STENTS IN INOPERABLE PANCREATIC CANCER

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Summary

Pancreatic head cancer is the most common malignant cause of extrahepatic cholestasis. Men suffer 1.4 times more than women. The risk of its developing increases with age. The disease develops asymptomatically. By the time of the diagnoses, 52% of the patients have hematogenic, and 26% have lymph metastasis. Therefore the outcome is extremely poor. In inoperable patients, endoscopic stenting of the common bile duct is used as a palliative method for the relieving the biliary obstruction. Two main types of biliary stents are used – plastic and metal. This study aimed to evaluate the efficiency of the endoscopic stents for relief of the biliary obstruction in inoperable pancreatic cancer. This research included 311 patients hospitalized with symptoms of obstructive jaundice for four years

(30.04.2014 – 01.05.2018). In 54 of them (17.4%) a large lesion localized in the head of the pancreas was found by using abdominal ultrasonography and computed tomography scan. Thirty-four were men (63%) and 20 were women (37%), age range 44-94years. An endoscopic retrograde cholangiopancreatography was performed to all the 54 patients. In 34 patients (63%), a stent was successfully placed (33 – plastic; 1 – metal). In 20 patients (37%), the placement of a stent was unsuccessful due to severe infiltration of papilla Vateri and the distal part of the common bile duct. In conclusion, placement of an endoscopic stent is an effective and safe method in malignant obstructive jaundice caused by a pancreatic head cancer. Also, hospital stay and financial costs are reduced.

Key words: pancreas, obstructive, jaundice, endoscopic, stents

VITAMIN D STATUS OF PATIENTS WITH NEWLY DIAGNOSED POSTMENOPAUSAL OSTEOPOROSIS AND MENOPAUSAL HEALTHY WOMEN

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Summary

This study aimed to assess vitamin D levels in women with postmenopausal osteoporosis and healthy women in menopause. Two groups of women in menopause were included in the study: 41 women with osteoporosis and 22 without osteoporosis. The levels of vitamin D, parathormone, alkaline phosphatase were examined. Sixteen women with osteoporosis (39%) had normal levels of vitamin D, 14 (34.1%) were with insufficiency, and 11 (26.9%) with deficiency of vitamin D. Within the control group, 8 women (36.4%) were with normal levels of vitamin D, 12 (54.5%) were with insufficiency, and 2 (9.1%) with deficiency. The study discovered a statistically significant difference in the age of women with vitamin D deficiency. The patients with vitamin D deficiency were significantly older in both groups. We also found a negative correlation with the increase of parathormone levels among patients with osteoporosis and vitamin D deficiency. There was a significant statistical difference in the average values of ITM in both groups. The average value of ITM in the patients with osteoporosis was 24.2 while in the patients of the control group, it was 29.5. The same trend was seen in the patients with vitamin D deficiency in both the women with osteoporosis and the women from the control group (24.4 to 28.2, respectively). The results showed an overall low status of vitamin D: 61% of the patients with osteoporosis and 63.6% of the healthy controls had low levels of vitamin D, showing either insufficiency or deficiency.

Key words: postmenopausal osteoporosis, insufficiency, vitamin D deficiency

EVALUATION OF INSULIN SECRETION IN TYPE 2 DIABETES PATIENTS ON XULTOPHY (DEGLUDEC/ LIRAGLUTIDE) TREATMENT

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Summary

Type 2 diabetes is characterized by many dysfunctions leading to hyperglycaemia as a result of insulin resistance, and inadequate insulin and high glucagon secretion. There are two main pathogenic mechanisms in type 2 diabetes – beta-cell dysfunction and insulin resistance (IR).

The therapeutic possibilities for conservation of beta-cell function are an object of current investigations as they give a possibility to stop the progression of the disease by minimizing the progressive insulin loss. One of the most promising of these agents is liraglutide, GLP-1 receptor agonist. This year, a combination of liraglutide with the long-acting insulin analogue degludec has been available under the name of Xultophy. This medication has a fast effect on the reduction of blood glucose, lipids and body weight. This study aimed to assess the effect of Xultophy on beta-cell function, serum insulin, and proinsulin and C-peptide levels. A prospective pilot study was performed, which included 30 patients with type 2 diabetes, all of them starting treatment with Xultophy. Glucose profile, lipid profile, glycated haemoglobin, insulin secretion and insulin sensitivity assessed by HOMA-IR and HOMA% were investigated. Serum levels of proinsulin, C-peptide and insulin were used for assessing beta-cell function. Patients were divided into two groups – the first one with a good therapeutic response to Xultophy, and the second one - with an inadequate response. We observed an increased level of proinsulin, C-peptide and insulin in the group with an improved therapeutic response, which is the result of increased-beta cell function due to therapy with Xultophy.

Key words: C-peptide, degludec, insulin, liraglutide, proinsulin

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DERMATOPATHIC LYMPHADENITIS

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Summary

Dermatopathic lymphadenitis is a rare benign lymphatic hyperplasia, associated with exfoliative or eczematous dermatitis. Some patients have no visible skin disease, and therefore, the differential diagnosis is often lymphoma. The lymph nodes have a significantly expanded paracortex. There are pale nodules, abundantly infiltrated with cells. The paracortical T-cells are predominantly T-helper cells with a relatively higher ratio of CD4/CD8, compared to that of non-specific lymphoid hyperplasia. We present a 73-year-old man with Dermatopathic lymphadenopathy. The patient was admitted to the clinic in an impaired general condition, with complaints of dyspnea and fatigue at minimal physical exertion, fever up to 38° C, pruritus, and massive oedema of the lower limbs. Laboratory tests revealed a mild anaemic syndrome. Abdominal and small pelvis CT found bilateral inguinal lymphadenopathy. Dermatology consult revealed generalized erythroderma with lymphedema and lymph nodes in the right axilla. Haematology consult proved an enlarged lymph node was located in the right axilla and the inguinal area, from which a biopsy was taken during a previous hospital stay at another Cardiology Department. We concluded

that the described immunohistochemical finding, compared to the available evidence of pronounced lower limb pruritus, was closest to dermatopathic lymphadenitis. Therapy with furosemide, cefuroxime, chloropyramine hydrochloride, desloratadine was started, with the patient responding well and symptoms stabilised. The above case is an example of dermatopathic lymphadenitis. As a result of the therapy, significant clinical, laboratory and subjective improvement of the patient was achieved.

Key words: dermatopathic lymphadenitis, benign, pruritus, oedema, erythroderma, lymphedema, biopsy

HEALTH CARE MANAGEMENT & NURSING AND OBSTETRIC CARE

PLENARY LECTURE

NURSES' PROFESSIONAL DEVELOPMENT WITH THE PARTICIPATION OF A SUPERVISOR AND A MENTOR

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Summary

The aim of this study was to define the roles of the supervisor and the mentor and suggest a Model of nursing clinical supervision which could be applied in Bulgaria and a Model of nurses' professional development with the participation of a supervisor and a mentor. A complex of methods was used, which guarantees the plausibility of results- literature review was conducted, a documentary method was used along with a medico-sociological study encompassing: ***nursing students' mentors,*** employees of UMHAT "St. Marina" AD and MHAT "St. Anna", UMHAT "Alexandrovska" and MHAT at MMA – Sofia, University Multiprofile Hospital "Georgi Stranski"- Pleven (n=189); experts' opinion (chief nurses from different cities in the country) (n=31) holding a Master's degree in Healthcare Management and academics teaching nursing students (n=42), regarding the need for the preparation of supervisors and the implementation of clinical supervision in nursing practice. Based on the studied opinion and the conducted review of documents,