Internal Medicine

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**Date:**
Friday, 08.05.2015

Location:
Room 232

Regular presentations:
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Maciej Janik
Katarzyna Konarska
Zuzanna Przybyło
Kamil Polok
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Mikołaj Radziszewski

Short presentations:
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Prevalence of Helicobacter pylori infection in Type-2 Diabetes Mellitus and its relation with HbA1C levels: a Cross sectional study in a tertiary care hospital of Eastern India

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Introduction: Helicobacter pylori infection is associated with the complications of the cardiovascular system, Insulin resistance, Metabolic syndrome mainly mediated by the increased level of the inflammatory cytokines (C-reactive proteins, IL-6). This elevated level of cytokines can cause the phosphorilation of the serine residues of the Insulin Receptor causing the insulin resistance.

Aim of the study: To study the prevalence rate of H. Pylori infection in type-2 diabetes and its relation with HbA1c level.

Material and methods: This was a cross sectional case control study. 120 patients (between 20-60 years) who met the criteria of American Diabetes act for type-2 Diabetes mellitus were conducted. In the same way age and sex matched 100 controls were taken. Patients with type-1 Diabetes, History of taking proton pump inhibitors, H2 Receptor blockers, Intake of antibiotics, Or antacids in last 2 weeks and with past evidence of active gastrointestinal bleeding, Jaundice or post gastric surgeries were excluded from the study. Patients were frequently assessed for any sort of microvascular complications. In the same way control groups were assessed for the absence of Type-2 Diabetes Mellitus with Oral glucose tolerance test (OGTT), Glycated Haemoglobin (HBA1C) and with fasting plasma glucose. Obtained data was analysed using the statistical method.

Results: Among 120 patients H.pylori infection was found in 91 (75.83%), while it was present in only 59 in 100 Controls (59.33%), which was found to be significant. The mean HbA1C level among diabetics with H.pylori infection was 7.23% ± 2.1% and that without H.pylori infection was 6.7% ±1.84%.

Conclusions: Helicobacter Pylori infection was significantly higher in Type-2 Diabetes as compared to the controls. It has also been found that the diabetics with poor glycemic control had significantly increased prevalence of H.pylori infection as denoted by elevated HbA1C level in H.pylori positive diabetic group in the cases. So Presence of H.pylori infection is correlated with the plasma HbA1C level significantly.

Activities Of Pro- And Antioxidant Systems In Nonalcoholic Fatty Liver Disease Patients During Complex Treatment With Additional Flavonoids Administration

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Introduction: Imbalance between synthesis of reactive oxygen species and antioxidant activity of the blood plays an important role in the occurrence of various chronic diffuse liver diseases, including nonalcoholic fatty liver disease (NAFLD). On the other hand the dynamics of free radical lipids oxidation and antioxidant activity consider being a reliable method of confirming of the treatment effectiveness.
**Aim of the study:** To investigate the effects of Quercetin administration on pro- and antioxidant systems in NAFLD patients.

**Material and methods:** The study involved 56 NAFLD patients aged 21 to 72 (54,52 ± 12,3) years. Among the examined patients males dominated – 33 (58,9%). Patients were divided into two groups considering received treatment. The main group consisted of 36 NAFLD patients which simultaneously with standard treatment were prescribed Quertin pills (Quercetin) (“Borschagivsky Chemical-Pharmaceutical Plant”) at a dose of 40 mg (1 tablet) three times a day 30 minutes before meal for 14-16 days. Comparison group included 20 NAFLD patients which received standard treatment. The control group consisted of 20 healthy volunteers representative by age and gender to the patients in studied groups. Free radical oxidation processes activity was determined by measuring the tiobarbituric acid reactive products blood content. The antioxidant systems activity evaluated over the content of reduced glutathione, catalase and glutathioneperoxidase activities.

**Results:** Significant increase in the concentration of reduced glutathione by 41,4% (p<0,05) was observed during treatment in patients of the main group. At the same time patients of both groups showed a tendency to glutathioneperoxidase activity reduction, but it was not significant. Blood catalase activity was significantly increased after the treatment in patients, which additionally received Quercetin by 47,7% (p<0,05), in patients of comparison group – only by 21,7% (p<0,05). The content of tiobarbituric acid reactive products was increased in the blood of NAFLD patients compared with healthy individuals. After the treatment significant reduction in the concentration of this substances by 28,3% (p<0,05) was achieved only in patients of the main group.

**Conclusions:** In nonalcoholic fatty liver disease patients complex treatment with Quercetin inclusion lead to more effective antioxidant activity restoration along with tiobarbituric acid reactive products blood level reduction.

**Is a negative chest radiograph sufficient to exclude crucial pulmonary causes of chronic cough?**

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**Introduction:** Chronic cough (lasting over 8 weeks) is a frequent clinical issue. The most common cause of chronic cough is smoking related bronchitis, however smokers rarely seek medical help because of this reason. Chest radiograph is crucial in preliminary diagnosis of causes of chronic cough. Chest computed tomography (CT) is recommended only in particular cases, when the most frequent causes of chronic cough such as gastroesophageal reflux disease, asthma or upper airway disorders are excluded.

**Aim of the study:** The assessment whether the chest radiograph is sufficient to exclude crucial causes of chronic cough.

**Material and methods:** The retrospective analysis of the results of a chest CT in non-smoking patients with chronic cough, who had normal chest radiograph, was made. The negative predictive value (NPV) of a chest X-ray in diagnosing causes of chronic cough was calculated as a percentage of true negative chest X-rays (chest CTs without any essential abnormalities) to all negative X-rays (all patients, who had both a chest radiograph and CT performed).
**Results:** The study group consisted of 156 patients (115 women, 74%), diagnosed with chronic cough between 2009 and 2014 in the Department of Internal Diseases, Pneumonology and Allergology, Medical University of Warsaw. A chest CT was performed in 59 patients (38%), who were included in further analysis. None of them was active smoker (29% ex-smokers, 71% never-smokers). The median age of the patients was 59 years (range 18-89).

Any irregularity was found in chest CT of 56 patients (56/59, 95%). Not all of them were essential for diagnosis of causes of chronic cough. The most frequent irrelevant changes found in chest CTs were: small pulmonary fibrosis (19.9%), calcified solitary pulmonary nodules (14%), scarring at the apex of lungs (9.6%), solitary pulmonary nodules without calcification (9.6%). However in 21 patients (21/59, 36%), chest CT revealed at least one relevant abnormality constituting the significant cause of chronic cough. In 3 of them more than 1 irregularity was found. Among relevant changes found in chest CT the most frequent were bronchiectasis (29.2%), parenchymal opacities (25%), mediastinal lymphadenopathy (20.8%), tree-in-bud pattern (8.3%), interstitial abnormalities (4.2%), pulmonary embolism (4.2%), large hiatal hernia (4.2%), metastasis (4.2%). The NPV of a chest radiograph in diagnosing causes of chronic cough was 64%.

**Conclusions:** A chest radiograph as the only imaging examination is not accurate enough to exclude pulmonary causes of chronic cough.

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**Comparison of various formulas to estimate 24-hour urinary sodium and potassium excretion based on sodium and potassium level measured in a single morning urine sample**

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**Introduction:** Measurements of 24-hr urinary sodium (Na) and potassium (K) excretion are used for various clinical purposes, e.g. estimation of daily oral Na intake in patients with hypertension, or evaluating urinary K loss as a feature of primary aldosteronism. However, 24-hr urine collection is cumbersome, often unreliable, or even impossible in some patients. Various formulas have been published to estimate 24-hr urinary Na and K excretion based on measurements of these electrolytes in a single urine sample.

**Aim of the study:** To compare three different formulas to estimate 24-hr urinary Na and K excretion based on measurements in a spot urine sample.

**Material and methods:** We studied 385 patients (mean age 55±16 years, 233 females, BMI 29.0±5.4 kg/m2) admitted to a general medical and hypertension unit, including 297 (77%) patients with hypertension. Na, K, and creatinine levels were measured using standard laboratory methods in a urine sample taken in the morning, followed by 24-hr urinary collection. The Tanaka, Kawasaki, and PAHO formulas were used to estimate 24-hr urinary Na and K excretion based on Na, K, and creatinine levels measured in the spot urine sample. Agreement between estimated and measured 24-hr urinary Na and K excretion was evaluated using Pearson correlation coefficients and Bland-Altman plots.

**Results:** The mean measured 24-hr urinary Na and K excretion was 158±75 mmol/d and 54±24 mmol/d, respectively. Correlation coefficients between estimated and measured 24-hr urinary Na excretion were r=0.54 for the Tanaka formula, r=0.53 for the Kawasaki formula, and r=0.46 for the PAHO formula (all P<0.001). For K, respective correlation coefficients were r=0.73, r=0.73, and r=0.71.
For Na, the mean bias (vs. measured 24-hr excretion) was significantly smaller (P<0.001) for the Tanaka (-10.4 mmol/d; 95% CI -123 to 102) and PAHO formulas (-11.4 mmol/d, 95% CI -164 to 161) compared to the Kawasaki formula (29.1 mmol/d, 95% CI -95 to 153). For K, the mean bias was significantly smaller (P<0.001) for the Kawasaki (-7.2 mmol/d, 95% CI -39 to 25) and PAHO formulas (-8.2 mmol/d, 95% CI -44 to 28) compared to the Tanaka formula (-16.3 mmol/d, 95% CI -51 to 18).

**Conclusions:** PAHO was the best formula for predicting both 24-hr urinary Na and K excretion based on measurements in a single morning urine sample. None of the formulas was accurate enough to predict individual 24-hr urinary Na excretion, while Kawasaki and PAHO formulas allow identification of significantly increased urinary K loss.

**The screening study on the influence size of population in the place of living and smoking cigarettes on the level of carbon monoxide in exhaled air**

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**Introduction:** The poor quality of air is one of the most important reasons for increased carbon monoxide (CO) level in exhaled air. It is caused by enlarging car traffic and industrial activity. Even though the knowledge about high pollution in big cities, the influence of place of living on CO level in exhaled air has not been well studied yet.

**Aim of the study:** The aim of the study was to check the influence of place of living on the level of carbon monoxide in the exhaled air.

**Material and methods:** In this study, conducted in Cracow, Warsaw and Kozienice adult people were recruited. After filling the survey concerning place of living, smoking, family history and personal data, patients were enrolled to get examined the level of CO in exhaled air with breath CO monitors Pico+ Smokerlyzer. Generalized linear models with logit link for a binary response with interaction between explanatory data was performed to verify whether exceeding CO level of 4ppm depends on smoking and place of living.

**Results:** 505 patients were recruited, with an average age of 39.03 ±17.89 years. The patients were divided into 4 groups based on the declaration of smoking cigarettes and place of living: "A" of 131 patients living in small towns (up to 100 000 of citizens) or villages and not smoking cigarettes;"B" of 62 patients from small towns or villages and smoking cigarettes; "C" of 222 patients from big towns and being non-smokers;"D" of 91 patients from big towns and being non-smokers. The average results of CO level in population of smokers differs according to place of living (B:7.93±6.24ppm vs D:11.96±7.96ppm; p<0.0001), but the difference in non-smoking population is more expressed (A:2.45±1.82ppm vs C:5.41±2.63ppm; p<0.0001). Created model has shown that people in the group “C” have odds ratio 15.10 (95% confidence interval: 7.29-31.29;p<0.0001) for chance of exceeding CO level of 4ppm in comparison with people from the group “A”.

**Conclusions:** In populations of non-smokers living in small town the median of level of CO doesn’t exceed normal range (0-4ppm) and is significantly lower than in population living in big cities. These results show us that not only smoking cigarettes has influence on the level of CO in exhaled air, but also the place of living and the quality of air does.

**The evaluation of patient’s satisfaction with the fiberoptic bronchoscopy**
Introduction: Fiberoptic bronchoscopy (FB) is a common diagnostic tool used to evaluate patients with various diseases of the respiratory tract. FB is an unpleasant procedure, which often causes patients anxiety. Due to chronic character of those diseases, it is important to improve patients’ satisfaction and their willingness to undergo another FB if necessary.

Aim of the study: The aim of the study was to assess the causes of patients’ anxiety before FB and to describe their satisfaction with the procedure.

Material and methods: The study included 463 patients, who underwent FB from August 2013 to June 2014. Each patient was administered lidocaine (20mL 4% solution), fentanyl (0,05mg), and midazolam (2,5mg). Additional doses of drugs were given if necessary. Patients who underwent the FB for the first time (268; aged 60,5±14,9; group1) were compared with those who underwent this procedure another time (195; aged 59,5±12,8, group2). To gain a complete understanding of their satisfaction, patients were asked to complete questionnaires detailing their experience. Pearson Chi-squared test and 2x2 contingency tables were used for statistical analysis.

Results: Patients who underwent the FB for the first time were less aware of the possible complications of the procedure (21,27% vs. 47,18%, p=0,004) and felt anxiety before the FB significantly more often (67,54% vs. 48,72%, p<0,001). The most common causes reported by patients were: pain (35,45% vs. 22,56%; p=0,0028), dyspnea (29,10% vs. 21,03%; p=0,049) and nausea/vomiting (27,24% vs. 12,82%, p=0,002).

Patients indicated application of topical anesthesia to the pharynx (29,85% vs. 24,62%) and passage of bronchoscope through the pharynx (9,7% vs. 15,38%) as the worst moments during the FB. There were no significant differences between both groups. Nonetheless, it was found that 89,2% of all patients would return for FB. During procedure 69,33% patients did not feel any discomfort, 23,54% experienced a minimal discomfort and 6,91% claimed that FB was uncomfortable. Additionally, 87,03% of patients reported that the use of anesthesia provided the comfort of their procedure.

Conclusions: To prevent patients’ anxiety before the FB, it is important to have knowledge about its common causes. Proper explanation of the procedure and use of sedative analgesia can help to reduce patients’ anxiety. It can improve patients’ satisfaction from the procedure and have an impact on their willingness to undergo the FB again if it is necessary in the future.

Assessment of the effective dose of ionizing radiation, related to a follow-up of peripheral pulmonary nodules with computed tomography

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Introduction: Imaging examinations are performed more and more often. Performing some imaging techniques, especially the computed tomography (CT), is connected with a substantial exposure to
ionizing radiation. One of the indications to repeat a chest CT is a follow-up of the solitary pulmonary nodules (SPN). The majority of SPNs have a benign etiology. In many patients a radiological follow-up with a series of chest CT is necessary to confirm the benignity of SPN. This follow-up usually lasts 2 years and require performing 2-4 chest CT.

**Aim of the study:** The aim of this study was to estimate the total effective dose of ionizing radiation in patients followed up with CT due to SPN.

**Material and methods:** We retrospectively analysed all CT examinations performed in patients followed up due to SPN. The study included 95 patients, who were diagnosed in Department of Internal Diseases, Pneumonology and Allergology because of SPN between 2007 and 2012.

The exposure to ionizing radiation in CT examinations was calculated as Dose-Length Product (DLP) counted as computed tomography dose index (CTDI) multiplied by the scan length in centimeters. CTDI (mGy), represents the radiation dose of a single CT slice. The effective dose (ED) equivalent (mSv) is the sum of DLP multiplied by a corresponding weighting factor.

**Results:** In 34 patients the effective dose was not possible to assess because the lack of data. The median age of patients was 66 years. The range of number of CT was 1 to 7, median 2. The median of DLP in the whole group was 1519 and median ED was 21.3.

There were 44 benign and 17 malignant SPNs. Both groups differed with number of chest CT performed. The average number of CT performed in patients with malignant nodules was significantly lower than in benign nodules (mean 1.9 vs 2.8, p= 0.02). Nevertheless, there were no significant differences in DLP and ED between patients with benign and malignant SPNs.

**Conclusions:** The follow-up of SPN with chest CTs is connected with a substantial exposure to ionizing radiation. The exposure did not differ between patients with malignant and benign SPNs.

**Clinical profile of patients suffering from autoimmune diseases admitted to the Intensive Care Unit**

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**Introduction:** Autoimmune diseases (ADs) are a heterogeneous group of diseases caused by abnormal reaction of immune system to antigens normally present in human body. They often manifest themselves with a dysfunction of multiple organs. Additionally, they require an immunosuppressive therapy which is associated with numerous, sometimes life-threatening side effects.

**Aim of the study:** The aim of our study was to create a clinical profile of patients suffering from ADs admitted to the Intensive Care Unit.

**Material and methods:** We have analyzed medical records of 74 patients admitted to the Intensive Care Unit of II Department of Internal Medicine of Jagiellonian University Medical College since 2002. To assess the severity of patients’ clinical condition following clinical scales: SAPS II, SAPS III, APACHE II, APACHE III and SOFA were used.

**Results:** 74 patients (21 males and 53 females) at the mean age of 51.68 (SD=16.58) were enrolled in the study. The most common ADs were as follows: systemic lupus erythematosus (25 cases), granulomatosis with polyangiitis (14) and rheumatoid arthritis (13). The most common reasons of
admission were: acute respiratory failure (40 patients), sepsis (9) and cardiologic reasons (7). The median of length of stay in the ICU accounted to 9 (1-65) days. 32 (43,2%) patients died and 31 (41,9%) developed sepsis during ICU stay. 42 (56,8%) patients required blood products transfusions. Mechanical ventilation was performed in 53 (71,6%) patients with median of length of 8 (1-46) days. 27 (36,5%) patients needed renal replacement therapy. 53 patients (71,6%) received conventional steroid therapy and 11 (14,9%) patients were administered steroid pulses. Other forms of therapy were: administration of cyclophosphamide (9 patients), plasmapheresis (7), intravenous immunoglobulins (2) and biological drugs (1). SAPS II, APACHE II, APACHE III and all SOFA scores but not SAPS III scores were significantly higher in non-survivors.

Conclusions: Patients with ADs require very advanced life support procedures. Causal treatment is equally important and consists of different forms of immunosuppressive therapy, namely steroid therapy, administration of other immunosuppressive drugs, plasmapheresis and intravenous immunoglobulins. Patients suffering from ADs are at higher risk of sepsis and death than the general ICU population. Combination of aforementioned features makes ADs a particular clinical challenge, especially in case of treatment in the Intensive Care Unit.

Topical complications of inhalation therapy in patients with asthma and chronic obstructive pulmonary disease

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Introduction: Asthma and chronic obstructive pulmonary disease (COPD) are common respiratory diseases. The therapy of both diseases is based on inhaled drugs. The side effects of medications used in inhalation, concerning oral cavity and throat are a common problem.

Aim of the study: The purpose of the study was to assess the prevalence of topical complications of inhalation therapy in patients treated for asthma or COPD and the impact of mistakes made in inhalation technique on the frequency of local complications.

Material and methods: The occurrence of topical complications was assessed on the basis of subjective symptoms reported by patients (dryness in the mouth and throat, hoarseness, sore throat and the incidents of mycosis of the oral) and objective changes (signs of the inflammation, redness, fur of the tongue, atrophy and mycosis of the mucosa), which were identified in the oral cavity and throat during physical examination. The statistical analysis was performed using Statistica Software.

Results: The analysis included 95 patients.

There were 46 patients with asthma. 89% of asthmatics reported any sort of subjective symptoms of local complications (most common: hoarseness (65%) and dryness of the mouth (61%)). In 50% of them abnormalities in the examination of the oral cavity and throat were found (most common: atrophy (27%)).

There were 49 patients with COPD. Subjective symptoms of local complications reported 67% patients (most common: dryness (49%) in the mouth and hoarseness (41%)). In 69% of patients with COPD any sort of abnormalities in the examination of the oral cavity and throat were found.
Asthmatics declared more ailments. This could result from topical complications of inhalation therapy (p=0.01). On the other hand, the abnormalities on physical examinations of the mouth and throat were less common in asthmatics than COPD patients (p=0.03).

Negative, but weak correlation was found between the number of used inhalers and the number of correct results of mouth and throat examination (r= -0.27, p<0.05). Positive, but weak correlations was found between using meter dose inhalers and occurrence of hoarseness (r=0.32, p<0.05) and atrophy of the mucous (r=0.28, p<0.05). There was no significant correlation between the number of mistakes during inhalation and the number of topical side effects.

**Conclusions:** Topical complications of inhalation therapy are common in both asthma and COPD patients. The more inhalers patient use, the occurrence of topical complications of inhalation therapy is more probable.

**Do comorbidities have a significant impact on postoperative high-sensitivity Troponin T levels?**

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**Introduction:** Despite improvement in perioperative care the mortality rate in patients undergoing noncardiac surgeries in 30-day follow-up is constant at the level of 1-2%. Cardiovascular events are the most common and the most dangerous postoperative complications. Recent studies have proved that occurrence of MINS (myocardial injury after noncardiac surgery) has a significant influence on patients’ mortality. The biomarker used to diagnose MINS is cardiac troponin. It is important to be aware of factors interfering with its blood levels to avoid misdiagnosis. It is particularly essential in patients undergoing vascular surgeries regarding high incidence of concomitant diseases (e.g. hypertension, diabetes mellitus and generalized atherosclerosis).

**Aim of the study:** The aim of our study was to evaluate which comorbidities have significant impact on postoperative troponin level.

**Material and methods:** 231 patients, aged 45 years or older, undergoing vascular surgeries were enrolled in the study. We have measured high-sensitivity Troponin T (hsTnT) blood levels to evaluate myocardial injury. Blood samples were collected 6-12h (troponin 1), one day (troponin 2), two days (troponin 3) and three days (troponin 4) after surgical procedures. Moreover, patients’ medical records were closely analyzed in terms of comorbidities.

**Results:** All postoperative troponin levels were significantly higher in patients suffering from hypertension (p<0.001), coronary artery disease (p<0.001), chronic obstructive pulmonary disease (p=0.01), diabetes mellitus (p=0.01), atrial fibrillation (p=0.01) and chronic heart failure (p=0.04). Only troponin 2 level was significantly higher in patients with history of stroke (p=0.03). Peripheral vascular disease had no influence on postoperative hsTnT levels (p=0.12).

**Conclusions:** Our study proved that comorbidities have impact on postoperative hsTnT blood levels. Hypertension, coronary artery disease, chronic obstructive pulmonary disease, diabetes mellitus, chronic heart failure and atrial fibrillation are associated with significantly higher hsTnT levels in all measurements. Interestingly peripheral vascular disease had no significant impact on postoperative hsTnT levels. Our results suggest that comorbidities should be considered in the process of diagnosing MINS because hsTnT level solely may not be reliable enough.
Diabetes mellitus and overweight as risk factors of diseases of the large intestine

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Introduction: Diabetes mellitus (DM) and overweight are two most common metabolic disorders in developed countries. It is claimed that DM and obesity may potentially increase risk of dysplastic or neoplastic changes in the large intestine. Colonic diverticulosis is claimed to be more prevalent among overweight people of developed countries.

Aim of the study: Assessment of diabetes mellitus and overweight impact on prevalence of dysplastic and neoplastic changes and diverticula in the large intestine.

Material and methods: Into the study 356 patients (226 women and 130 men) were included. The whole group underwent endoscopic investigation of the lower part of gastrointestinal tract, anthropometric and basic biochemical tests were done. The interviews were made basing on a consolidated questionnaire. In the whole group 199 patients were overweight or obese (BMI>25 kg/m2) and 54 patients suffered from diabetes mellitus. Statistical analysis was performed with Statistica 12 software.

Results: Prevalence of hyperplastic polyps is significantly higher in patients with diabetes in comparison with patients without the condition (19% vs. 6% of patients, p=0.004). In diabetic patients also adenocarcinoma were more frequently observed (11.11% vs 3.34% of patients, p=0.03). The study suggests that there is no statistically significant impact of diabetes on prevalence of adenomas, diverticula or non-specified inflammatory changes. Neither hyperplastic polyps nor adenocarcinomas occurred more frequently in overweight patients in comparison with lean patients. There were also no differences in prevalence of hyperplastic polyps and adenocarcinomas between men and women. However, adenomas (all types together) were more prevalent in men than in women (33% vs. 12%, p<0.001). Diverticula were more frequently observed in the group of patients with BMI>25. (14% vs. 4% of patients, p<0.001). There was no significant impact of diabetes on occurrence of diverticula.

Conclusions: Higher prevalence of hyperplastic polyps and adenocarcinomas in diabetic patients suggest that diabetes mellitus may be a risk factor of neoplastic transformation of epithelium in the large intestine. Therefore, in diabetic patients, especially in those with other risk factors, screening colonoscopy should be taken into consideration. As colonic diverticulosis in some patients may lead to life-threatening complications, overweight and obese patients need thorough management and follow-up accompanied with lifestyle changes.

A comparison of pancreatic polypeptide and chromogranin A in biochemical assessment of the disease’s progression in patients with well-differentiated gastro-entero-pancreatic neuroendocrine neoplasms

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Introduction: Gastro-entero-pancreatic neuroendocrine neoplasms (GEP-NEN) are a heterogeneous, rare group of tumors. Currently, we dispose of a few specific and non-specific biochemical markers, which are used in diagnosis. Chromogranin A (CgA) is a non-specific marker and plays crucial diagnostic role in all GEP-NEN. In literature, pancreatic polypeptide (PP) is considered as a significant marker for non-functioning GEP-NEN with primary tumor in the pancreas.

Aim of the study: To verify the usefulness of PP and CgA in biochemical assessment of the disease’s progression in patients with GEP-NEN.

Material and methods: We studied prospectively a historical cohort of 28 patients (18 females and 10 males; average age 59 years) with GEP-NEN. Patients were divided into two subgroups: with disease’s progression (P; n=14) and non-progression (NP; n=14), based on radiological findings after 6-month observation. We had chosen two serum samples referred to each patient - at time of progression’s presence or absence (point 6) and 6 months before (point 0). We measured the serum CgA and PP levels with manual ELISA. Correlated data included: markers’ concentrations (CgA0, CgA6, PP0, PP6 – abbreviations for 0 and 6 points), symptoms of pancreatic and intestinal tumors, histopathological (grading, CgA- and Synaptophysin-stain) and radiological features (percentage of liver’s load by metastases). We used Wilcoxon’s and Spearman’s rank tests for a statistical analysis.

Results: We observed following tumor’s origin: intestinal (71%), pancreatic (18%), unknown (11%). Median results of: CgA0, CgA6, PP0 and PP6 equaled, in order: 64.86, 195.21 [ng/ml], 195.37, 209.18 [pg/ml]. CgA0 and PP0 were positively and significantly correlated with CgA6 (respectively: p<0.001, p=0.005) and PP6 (p=0.019, p<0.001), but no with each other (p=0.071). CgA0, CgA6, PP0 and PP6 were significantly higher in the P group compared to the NP (p<0.05). CgA0 and CgA6 were positively correlated with liver’s load (p<0.05). PP0, PP6 were significantly related to flushing (points: 0, 6). We did not find out statistically important relations between markers’ levels and sex, grading, tumor’s origin or endocrine activity (p>0.05).

Conclusions: PP and CgA serum levels are significantly higher in patients with progression of GEP-NEN. We showed that both PP and CgA are efficient in 6-month evaluation of tumors burden, as well as in the assessment before a consecutive radiological study. Presented results revealed that our attention should concern alternative secreting-tumors-related markers.

Prospects Of Flavonoids Administration In Patients With Nonalcoholic Fatty Liver Disease

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Introduction: Nonalcoholic fatty liver disease (NAFLD) is the most common among liver diseases today. In particular, its prevalence is 20%-30% of the adult population in Western Europe and North America and 15% in Asia.

Aim of the study: To verify the usefulness of PP and CgA in biochemical assessment of the disease’s progression in patients with GEP-NEN.

Material and methods: The study involved 56 NAFLD patients aged 21 to 72 (54.52 ± 12.3) years. Among the examined patients males dominated – 33 (58.9%). Considering received treatment...
patients were divided into two groups. The main group consisted of 36 NAFLD patients which simultaneously with standard treatment were prescribed Quertin pills (Quercetin) (“Borschagivsky Chemical-Pharmaceutical Plant”) at a dose of 40 mg (1 tablet) three times a day 30 minutes before meal for 14-16 days. Comparison group included 20 NAFLD patients which received the standard treatment. The control group consisted of 20 healthy volunteers representative by age and gender to the patients in studied groups. Biochemical studies were carried out on blood biochemical analyzer Accent-300 "Cormay SA" (Poland) using standard reagents and methods.

**Results:** During treatment patients of the main group showed significantly decreased aspartateaminotransferase and alanineaminotransferase activities – by 31.6% (p<0.05) and 34.2% (p<0.05) respectively. Simultaneously, γ-hlutamilltranspeptase activity significantly decreased in patients of both groups. In particular, in patients of the main groups such reduction was 51.7% (p<0.05), in the comparison group – 26.4% (p<0.05). For patients which in addition to the main treatment received Quercetin reduced concentrations of cholesterol by 22.7% (p<0.05) and triglycerides - by 37.3% (p<0.05) were characteristic. In the patients of comparison group content of these substances during the two-week treatment period was not reduced. Such reduction of cholesterol and triglycerides in the blood of patients with additionally Quercetin application indicates hypocholesterolemic and antiatherogenic properties of the mentioned medication.

**Conclusions:** In nonalcoholic fatty liver disease patients, which in addition to standard treatment received Quercetin, within two weeks of treatment indicators that reflect cytolysis and cholestasis were effectively adjusted. Moreover a significant decrease in cholesterol and triglycerides blood levels in this patients were observed.

**Comparison of quality of life in patients with different chronic hemodialysis vascular access types**

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**Introduction:** All over the world, including Latvia, the number of patients suffering from chronic kidney disease and chronic hemodialysis (HD) is constantly increasing. One of the major problems associated with the treatment of these patients is HD vascular access and its impact on patients’ quality of life.

**Aim of the study:** To compare the quality of life in chronic hemodialysis patients with different vascular access types.

**Material and methods:** In order to evaluate the quality of life in patients with renal replacement therapy, within the framework of the study, a modified KDQOL-SFTM Version 1.3 questionnaire was offered to all patients who were constantly treated with chronic HD at Pauls Stradins Clinical University Hospital Chronic Hemodialysis Section during the time period from October 2012 to November 2012 (n = 64). Questionnaires were completed by 37 patients (58% of the total number): 18 with an arteriovenous fistula (AVF), 11 with a central venous catheter (CVC), and 8 with an arteriovenous prosthesis (AVP). The obtained data were statistically processed by MS Excel and SPSS13.0 programmes.

**Results:** The results of the analysis showed that the quality of life was equivalent in AVF and AVP groups, except in vascular access problem-caused disturbances and cognitive function, where higher quality of life was observed in the AVF group (p <0.05). In the CVC group the quality of life was
significantly lower, particularly assessing the physical functioning, kidney disease impact on daily life, vascular access problem-caused disturbances (p < 0.05 for all), as well as the overall health status in self-evaluation (p = 0.058), and symptom severity (p = 0.072). In other areas the CVC group patient assessment was lower than in the AVF and AVP groups, but the results did not reach statistical significance.

**Conclusions:** Quality of life depends on the type of vascular access. Assessment of the quality of life in several areas was better in patients with arteriovenous access, but worse in patients with CEC. In order to better assess the quality of life, it is necessary to involve other Latvian HD centres in the study.

**Clinical characteristics of type 2 diabetes patients treated with different hypoglycaemic approaches**

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**Introduction:** Type 2 diabetes (T2DM) is a heterogeneous disease in terms of both pathogenesis and clinical manifestations. Glucose lowering medications are directed at one of two major pathophysiological defects of T2DM – insulin deficiency or insulin resistance.

**Aim of the study:** The aim of this study performed in a tertiary university diabetes center was to compare clinical characteristics of T2DM patients according to different treatment models.

**Material and methods:** We performed a retrospective analysis of medical records of adult T2DM patients (351 women, 353 men) treated in the Department of Metabolic Diseases, University Hospital in Kraków between 2008-2013. We divided patients into three groups according to the treatment strategy: oral glucose lowering drugs (OGLD), insulin therapy (IT), and combination of both (CT). We analyzed diabetes control, lipid profile and clinical parameters available in medical records. Statistical analysis: Kruskal-Wallis test, post hoc analysis and Chi^2 test were performed.

**Results:** The mean age was significantly higher in the IT group compared to the CT group (67.5±10.9 vs 63.7±10.6 years, p<0.001) and similar to the OGLD group (66.2±11.9 years). Diabetes duration was shorter in the OGLD group compared to the IT group and the CT group (9±6.9 vs 13.1±7.9 and vs 12.6±7.3 years, p<0.001, respectively). Mean HbA1c were: 8.33±1.86% in the OGLD group, 8.66±1.63% in the IT group and 8.75±1,7% in the CT group. In Kruskal-Wallis rang test we observed that the HbA1c level was different between groups (p=0.037). Post-hoc (subgroup) analysis showed that HbA1c was lower in the OGLD group as compared to the CT group (p=0.05). The CT group had the highest BMI as compared to IT and CT groups (33.7±6 vs 31.4±6.3 and vs 31.2±5.8 kg/m2, p<0.001). Mean LDL level was significantly lower in IT and CT groups as compared to the OGLD group (2.54±0.97 and 2.48±0.9 vs 2.77±0.98 mmol/l, p=0.012). In Chi^2 test there were significant differences in the prevalence of diabetic complications (p<0.001). Ischemic heart disease was present in 39% of T2DM patients in the OGLD group, 60% of the IT subjects and 41% of the CT individuals, respectively. Retinopathy was diagnosed in 9%, 30% and 23% of T2DM patients, while nephropathy in 10%, 33% and 19%, and neuropathy in 14%, 43% and 40%, respectively.

**Conclusions:** There were significant differences in clinical characteristics of analyzed groups according to various treatment models. These differences seem to be mainly secondary to the variability in T2DM duration.
The Effectiveness of the Treatment of Asthma in Dependence on Genotype by BCL1 Polymorphism of Glucocorticoid Receptor Gene

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Introduction: Actuality of this study is conducted by the high prevalence of bronchial asthma and its ineffective control in a large number of patients. The lack of adequate response to asthma drugs may be determined by genetic factors. It’s known that Bcl1 polymorphism of glucocorticoid receptor gene is associated with asthma origin and answer change to corticoids.

Aim of the study: The aim of the study was to evaluate the effectiveness of treatment of patients with asthma depending on genotype by bcl1 polymorphism of glucocorticoid receptor gene.

Material and methods: The study involved 188 patients with bronchial asthma and 95 healthy individuals. The level of asthma control was assessed by recommendation of GINA (2011). Bcl1 polymorphism was determined by the FleuryI method. Statistic processing of the results was performed using SPSS-17 program.

Results: It was established that uncontrolled asthma course is twice more common in the presence of G / G genotype (55.8%) in comparison with C / G genotype (27.9%) and in three times – in comparison with C / C genotype (16.3%). Analysis of the genotypes distribution in Bcl1 polymorphism of glucocorticoid receptor gene depending on the dose of inhaled corticoids, which were used in treatment of patients with bronchial asthma, showed that mainly patients with C / G genotype (52.3%) were received a low dose and an average dose - patients with G / G genotype (\( p = 0.001 \)). Among patients with C / C genotype 74.4% were received a low dose of iCs, with the C / G genotype - 98.8%, and with the G / G genotype - 61.5%, and an average dose -16.3 %, 1.3% and 35.4% respectively.

Conclusions: It was established that Bcl1 polymorphism of glucocorticoid receptor gene was associated with asthma control and in accordance with the dose of inhaled corticosteroids.

To recommend influenza vaccination or not? The analysis of a number of asthma or chronic obstructive pulmonary disease exacerbations among vaccinated and non-vaccinated patients

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Introduction: Annual influenza vaccinations are widely recommended not only by the Center for Disease Control and Prevention, but also by the Polish National Institute of Public Health. The influenza vaccine is recommended for patients with asthma or chronic obstructive pulmonary disease (COPD). However, results of some recent studies do not confirm efficacy of influenza vaccination among the patients with asthma or COPD.

Aim of the study: The aim of this study was to compare the number of asthma or COPD exacerbations among influenza vaccinated and non-vaccinated patients.
Material and methods: The patients with asthma and COPD, who participated in the study concerning misleading of inhalation therapy, were asked about influenza vaccination in the last 3 years. The numbers of exacerbations requiring antibiotic or oral glucocorticoids therapy as well as the number of hospitalizations due to asthma or COPD exacerbations through the past 3 years were assessed.

Results: 60 patients were analyzed, among which 31 suffered from asthma and 29 from COPD. Among the asthmatics [median age 62 (range 41-82); 22 females], 14 were vaccinated and 17 were not. These two groups did not differ in the duration of the disease, number of medication used against asthma or spirometry results. However, the vaccinated group was older (median of age 67 vs. 57 years, p<0.05). The percentage of patients without asthma exacerbation during the last 3 years was 71% and 41% for the vaccinated and non vaccinated group respectively.

Among patients suffering from COPD [median age 69 (range 50-87); 11 females] 16 patients were annually vaccinated, whereas 13 were not. These two groups did not differ with regard to the duration of the disease or a number of medications used against COPD. The percentage of patients without any COPD exacerbation during the last 3 years was 38% and was the same for both vaccinated and non vaccinated group. There was no significant difference in a number of hospitalizations due to exacerbations between the two groups.

Conclusions: In asthmatics who were vaccinated against influenza there were fewer exacerbations of asthma. In the COPD patients, there was no difference in the number of COPD exacerbations between patients that were vaccinated and not vaccinated against influenza.

Risk’s assesment of the low energy bone fracture’s occurrence in hemodialysis patients among Mazovian population in connection with clinical and biochemical parameters

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Introduction: The problem of low energy bone fractures in group of patients with chronic kidney disease (CKD) treated with hemodialysis (HD) is not fully resolved.

Aim of the study: The aim of the study was to assess the frequency of bone fractures among HD patients and to evaluate the prognostic value of clinical and biochemical parameters of bone fracture in the studied group.

Material and methods: In our four-year study started in 2010, we have analysed 562 adult patients (average age 62.01 ± 13.52 years; 231 females and 331 males) with end stage CKD treated with HD from 15 Mazovian dialysis stations. We divided them into two subgroups: low-energy fractured (F) and non-fractured (NF). We gathered and correlated biochemical data: serum concentrations/activity of calcium (Ca), phosphate (P), parathormone (PTH), alkaline phosphatase (ALP) and clinical characteristics: low-energy bone fractures during study, dialysis’s duration (DD), body mass index (BMI) and age. We set end-points of observation as the first occurred bone fracture, death or kidney transplantation.

Results: There were 58 patients suffered from bone fracture (36 males and 22 females) during 4 years. Sixty-four patients had kidney transplantation and 161 died during the study. Median results for the following markers – PTH, Ca, P, ALP, amounted to were: 402.53 pg/ml, 8.72 mg/dl, 5.28 mg/dl and 98 IU, respectively. There were statistically significant differences between F and NF
patients in age 62.01 ± 13.52 (p=0.02) and DD 3.95 ± 4.38 (p=0.01). Biochemical results of serum markers (PTH, Ca, P, ALP) did not present statistically important difference between F and NF groups, as well as there were no differences connected with sex and bone fracture occurrence before the study. We noted statistically significant correlations between following variables - PTH with P, ALP, DD and age (all p<0.001). Dialysis duration and P were in important relation to BMI (p<0.001, p=0.034, respectively), while DD was correlated with age (p=0.006) as well. Ca was not significantly related to other variables.

**Conclusions:** The frequency of bone fracture seems to be relatively high in the studied group. Age and dialysis’s duration positively correlated with the bone fracture’s risk. Nevertheless, the chosen biochemical parameters do not serve as markers of the bone fracture-risk in the described group. Limitations included different treatment, past medical history and many patients were excluded due to transplantation or death.

**Patterns of antibiotic sensitivity of bacteria implicated in UTI in Białystok, Poland**

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**Introduction:** Urinary tract infection (UTI) is one of the most prevalent complication in healthcare systems worldwide affecting millions of people each year. The effectiveness of empirical antimicrobial treatment depends on the knowledge of the bacteria that most commonly cause UTI and their susceptibility patterns.

**Aim of the study:** The aim of this investigation was to estimate the prevalence and the antimicrobial resistance mechanisms of primary bacteria responsible for UTI.

**Material and methods:** Urine specimens from 162 community-acquired patients (109 - women, 53 - men) were evaluated in the Department of Microbiology, UMB Białystok in 2013. The bacterial colonies were counted (Hoeprich method) to give an estimate of the number of bacteria per milliliter of urine. Significant growth was determined as ≥10000 colony forming units (CFU)/ml of midstream urine samples. Microorganisms were cultured on - enriched (Blood agar), selective-differential media (MacConkey Agar, OXOID) and identified using the following biochemical tests ID 32GN, API 20E (bioMerieux). The disc - diffusion method with Mueller-Hinton agar was used to determine the sensitivity of the microorganisms to antibiotics. The present findings were in accordance with EUCAST criteria.

**Results:** E. coli was the most frequently isolated bacteria 69% (112), followed by P. mirabilis 11.5% (18), P. vulgaris 6% (10) and P. aeruginosa 6% (10). While the impenem (S - 100%), ciprofloxacin (S≥89%) and aminoglycosides (S ≥80%) were the most effective antibacterial agents, penicillins (R≥67%), trimethoprim/sulfamethoxazole (R-33-70%) had poor activity against uropathogens. Among the isolated microorganisms the following resistance mechanisms were determined: ESBL 3% (P. mirabilis - 3, E. coli - 1) and constitutive AmpC 2% (P. vulgaris - 3).

**Conclusions:** The most prevalent etiologic agent responsible for UTI was E. coli 69% (112). However, other Gram-negative rods showed lower frequency rate (range between 11.5 - 0.5%). The microorganisms presented variable susceptibility to trimethoprim/sulfamethoxazole (R-33-70%), whereas gentamicin, amikacin and ciprofloxacin were active against ≥ 80% of strains. The most frequent resistance mechanism was the ESBL, it was found in 3% of isolated bacteria. The
constitutive AmpC mechanism was detected in 2% of cases. In addition 67-100% of Gram-negative rods produced penicillinases. This data would be helpful in empiric therapy of patients with UTI and decrease the number of therapeutic failures.

**Evaluation of a clinical significance of the Epworth Sleepiness Scale in patients with an obstructive sleep apnea syndrome**

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**Introduction:** The obstructive sleep apnea syndrome (OSAS) is a very important medical and social problem. One of the vital sign is a daytime sleepiness, which severity is often evaluated by the Epworth Sleepiness Scale (ESS). Depending on the different ESS scores a clinical decisions are taken. The ESS consists of eight questions, which quantify the possibility of the falling asleep during the normal daily activities.

**Aim of the study:** The evaluation of a clinical significance of the medical personnel assistance during completing the ESS.

**Material and methods:** The study was performed in a sleep laboratory at the group of the 102 patients suspected of OSAS. Average age in the group was 54 ± 13.2 and BMI 30.8 ± 6.6. The ESS was evaluated twice: by patients themselves and medical personnel (medical students) assistance. After that, the full polysomnography examination was performed.

**Results:** The average sum of scores from the ESS completed with assistance (9.6 ± 5.6) was significantly lower (p= 0.04) than that without help (10.2 ± 5.7). There were found statistical relevancies between this 2 groups for 2 questions from the questionnaire: sitting and reading (p=0.001); sitting inactive in a public place (p=0.003). Differences between the rest questions weren’t significant (p>0.05). There was no correlation between the ESS score without help and the OSAS diagnosis using Apnea-Hypopnea Index (AHI) (p=0.12). Furthermore, the probability of OSAS diagnosis was significantly correlated with the ESS results achieved with assistance (p=0.036).

**Conclusions:** The ESS is a useful tool for the daytime sleepiness evaluation. Completing the questionnaire with the personnel assistance is more reliable in the OSAS diagnosis. For the better positive predictive value of the ESS in the PSG laboratories it should be performed with the medical personnel assistance.

**Association between the clinical symptoms of CVID and the occurrent immunophenotype of B-cells**

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**Introduction:** Common variable immunodeficiency (CVID) is the most common severe congenital humoral immunodeficiency, both in children and adults. EUROclass classification is based on immunophenotype of B-cells.
Aim of the study: The aim of the study was to find the association between the clinical symptoms and group type according to EUROclass classification.

Material and methods: We studied 24 adult patients diagnosed with CVID. The patients were divided into 5 groups, according to the EUROclass classification. The B- group consisted of 5 patients, the B+ group was divided into: smB+21lo (11 patients), smB+21norm (4 patients), smB-21lo (3 patients) and smB-21norm (1 patient). A statistical analysis was carried out with the use of Statistica software, using a chi-square test.

Results: All of the B- patients have experienced thrombocytopenia, 4 patients (80%, p>0,05) - chronic sinusitis, 3 patients (60%, p>0,05) - chronic bronchitis. Only in the group of smB+ patients occurrence of allergic disorders (n=5, 33%, p>0,05), asthma (n=7, 47% p>0,05) and autoimmune diseases (n=6, 40%, p>0,05) was observed. Recurrent respiratory tract infections (n=7, 64%, p>0,05), allergic disorders (n=4, 37%, p>0,05) and autoimmune diseases (n=5, 45%, p>0,05) were the most dominant in the smB+21lo group. Moreover, cytopenias were also noticeable (n=9, 82%, p>0,05). Leukopenia was observed only in B- and smB+21lo patients. In the smB+21norm group, recurrent upper respiratory tract inflammations (n=3, 75%, p>0,05) and chronic gastritis (n=2, 50%, p>0,05) were the most frequent complaints. The patients in the smB+21norm group have had purulent skin changes (n=2, 50%, p=0.037). The smB-21lo patients have suffered mostly from chronic upper (n=2, 66,7%, p>0,05) and lower (n=2, 66,7%, p>0,05) respiratory tract infections. Furthermore, occurrence of COPD (n=3, 22%, p=0.035) and chronic bronchitis (n=7, 50%, p=0,034) was significant in the joined group of smB+21lo and smB-21lo patients.

Conclusions: Clinical picture of CVID is very heterogeneous. More significant associations between clinical symptoms of CVID and B-cell immunophenotype would probably be seen in a larger group of patients.

Impact of pulmonary rehabilitation on response to physical exercise in patients with chronic obstructive pulmonary disease undergoing long term oxygen therapy

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Introduction: Inability to tolerate exercise is a major factor adversely affecting the quality of life in chronic obstructive pulmonary disease (COPD) patients. Pulmonary rehabilitation (PR) is a key treatment modality in COPD.

Aim of the study: To determine whether PR improves cardiovascular response to physical exercise and post-exercise recovery in COPD patients undergoing long term oxygen therapy (LTOT).

Material and methods: 40 patients (20 males and 20 females) with COPD undergoing LTOT were randomly allocated into two groups: the pulmonary rehabilitation group (n=18, mean age=66.8±8.8 years, BMI=28.2±7 kg/m2) and control group (n=22, mean age=72.2±7.1 years BMI=25.9±5.8 kg/m2). All patients performed cardipulmonary exercise test on the cycloergometer twice, at the beginning of the study and after 3 months. The PR lasted 3 months and included low intensity aerobic exercise on a cycloergometer at home.

Results: The second test duration was significantly longer for the PR group than for the control group (10.8±2.7 min vs. 9.2±3 min; p=0.01). Both diastolic and mean arterial blood pressure at 50% load were significantly lower during the second test in the PR group (80±11.3 mmHg vs. 70.9±10.9 mmHg;
p=0.005, and 98.4±14.4 mmHg vs. 90.1±13.9 mmHg; p=0.015). In the control group, these differences were not statistically significant. Heart rate (HR) at the 3rd minute of exercise was significantly lower after pulmonary rehabilitation program (102.4±18.1 vs. 95.8±15.2; p=0.033), in the control group no significant differences at the heart rate response were observed. The difference between peak HR and HR after 6th and 7th minute of recovery was significantly higher after PR than before (6th min.: 25±14.2 vs. 19.3±11.3; p=0.026, 7th min.: 25.5±14.5 vs. 21.1±9.8; p=0.043). In the control group HR after 6th and after 7th minute of recovery phase was significantly higher during second test comparing to the first test (6th min.: 84.9±8.7 vs. 80.7±9.5; p=0.049, 7th min.: 86.2±9.4 vs. 81.2±10.3; p=0.05).

Conclusions: PR improves the ability to exercise in COPD patients and ameliorates the cardiovascular response during cardiopulmonary exercise test and subsequent recovery. More studies are needed to determine how persistent is the improvement and which patient characteristics predispose them to the most beneficial effects of PR.

The effect of mass and BMI on transplanted kidney’s distant secretion function in a one year posttransplantation period

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Introduction: The negative effect of obesity on renal function is well known. Both the excess of leptin, as well as hyperinsulinism contribute to it. Additional immunosuppressive treatment - steroids and calcineurin inhibitors (especially tacrolimus) can intensify insulin resistance and glucose intolerance associated with it.

Aim of the study: An attempt to assess weight and BMI’s effect on transplanted kidney’s distant secretion function evaluated with estimated glomerular filtration rate (eGFR).

Material and methods: The research included 140 patients (52 women and 88 men) in age of 47 ± 13 years with stage 5 chronic kidney disease (CKD), after a kidney transplant. EGFR was calculated using the MDRD (Modification of Diet in Renal Diseases) formula. The parameters were measured initially and after 1,3,6 and 12 months from the transplantation date.

Results: A significant weight and BMI increase between 3 and 12 months after the transplant has been revealed (p<0,001). In one year observation, together with the improvement of renal secretion function, creatinine concentration decrease and eGFR increase have been found (p<0,001). Especially creatinine, after 12 months post transplantation was lower than after 3 (p<0,001) and after 6 (p=0,006), which was accompanied by statistically significant eGFR increase after 12 months post transplantation, in comparison with eGFR after 3 and 6 months (p<0,001). Statistically significant positive correlations between body mass and creatinine concentration (throughout the whole observation period) and negative correlations between body mass, BMI and eGFR (1,3,6 months post transplantation) have been observed.

Conclusions: Statistically significant inverse correlation between body mass and BMI and eGFR has been confirmed. Transplanted kidney’s secretion function stabilizes 12 months after transplantation.

Evaluation of C-reactive Protein Levels in Patients With Obstructive Sleep Apnea
Introduction: Obstructive sleep apnea (OSA) is a disorder which is characterized by repetitive pauses in breathing during sleep. Many studies point to OSA as one of the reasons of inflammation which is reflected by higher level of plasma C-reactive protein (CRP).

Aim of the study: The aim of the study was to verify the research showing that OSA is a cause of the increase of CRP.

Material and methods: The study included 107 patients with OSA (25 women and 82 men). They had underwent polysomnography by PORTI 6 in the Department of Internal Medicine - Medical University of Lublin. The patients were divided into 3 groups on the basis of apnea-hypopnea index (AHI) (1: 5-15 AHI/h, 2: AHI 15,1-30/h, 3: AHI> 30.1/h).

Results: (Found that) in the groups of women CRP turned out to be higher than of men (average value of CRP for women = 4.6mg/l, men= 3.7mg/l). In groups of women: 1,2,3, CRP was: 4.2; 2.6; 5.6 (mg/l) respectively, and among men: 2.5; 2.2; 4.8(mg/l). Patients with AHI> 30.1/h were characterized by the highest BMI.

Conclusions: Patients with the most severe breathing problems during sleep had the highest levels of CRP and the mean values in every group were higher for women. In patients with AHI>30,1/h and the highest BMI the interpretation of this value has to be carefully assessed because of the potential influence of the excess of fatty tissue on the CRP level.

Important of Laparoscopy in the management of recurrent abdominal pain in children: a cross sectional study in a tertiary care Hospital of Eastern India

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Introduction: Recurrent abdominal pain is very common among the children of paediatric age group. Most of the children who come with recurrent abdominal pain are due to any medical reason commonly due to abdominal worm, acute gastritis and mesenteric adenitis. A precaution should be taken regarding the CT scan in the Paediatric age group as it involves exposing a baby/Child to excessive radiation. Diagnostic Laparoscopy now a day can solve many a doubt about the cause of recurrent abdominal pain. The investigation is preferred rather than investigations like CT scan and MRI as it not only assists in the diagnosis, but gives us a scope of therapeutic intervention in the same setting.

Aim of the study: To find out the role of laparoscopy for the management of recurrent abdominal pain in Patients of paediatric age group.

Material and methods: From July 2013 to March 2014, we had 110 patients; age between 2 months to 12 years, suffering from recurrent abdominal pain. These includes 62 males and 48 female patients. Abdominal pain was from 5 days to 6 months. All these children underwent laparoscopy under general anaesthesia after obtaining consent for laparoscopic appendectomy if no other anomaly was found.
**Results:** There were so many pre operative finding including Appendicitis (n=19), Mesenteric lymphadenitis (n=5), Chron’s disease (n=5), Intussusceptions (n=7), Meckel’s diverticulum (n=5), Mesenteric Vaculitis (n=4) and Ovarian cyst (n=3) in children with no significant finding (n=62, M:F=35:27) a laparoscopic was undertaken. There was complete remission of pain in 57 out of 62 patients (90.47%). All the appendices were found to have inflammation and/or fecalith on histopathological examination. 82 children had some finding that could explain the cause of recurrent pain and none of them had any recurrence.

**Conclusions:** Toxicity of radiological exposure is an important issue to be considered in children of paediatric age group. Hence the procedure of diagnostic laparoscopy should be given a priority opposed to CT scan for the management of recurrent abdominal pain. However parents must be counselled that it is possible that no cause can be found out even after the procedure. In such case Laparoscopic appendectomy should be done and further tests undertaken to search for the etiology of pain.

**The influence of IL28B polymorphisms, rs8099917 and rs12979860, on HBV or HCV infections and response to HBV vaccination among hemodialysis patients**

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**Introduction:** The single nucleotide polymorphisms (SNPs) in the IL-28B gene (IL28B), primarily rs8099917 and rs12979860, have been correlated with the spontaneous seroclearance of HBV and HCV infection. Recently the influence of the favorable genotype of rs8099917 on spontaneous HCV clearance was confirmed among uremic patients, however, no study investigated the influence of these SNPs on the formation of antibodies to the HBV surface antigen (anti-HBs).

**Aim of the study:** To investigate the distribution of rs8099917 and rs12979860 SNPs among HD patients according to their anti-HBs status after vaccination or after natural infection or to their HCV status.

**Material and methods:** The study was carried out on 1,110 HD patients. Among never HCV infected subjects (n = 1,047) there were 806 individuals never infected with HBV, out of whom 672 were responders to the HBV vaccine (anti-HBs titer ≥10 U/L) and 134 were non-responders despite advanced immunization strategy (persistent anti-HBs titer <10 U/L) as well as 241 HBV infected HD patients, out of whom 186 developed anti-HBs. Among HCV but not HBV infected patients (n = 63) there were 39 HCV RNA positive subjects. Healthy volunteers (n = 375) served as controls. All subjects were genotyped for IL28B rs8099917 and rs12979860 SNPs using high resolution melting curve analysis. Ptrend was applied to compare the genotype frequency distribution. Results were adjusted for parameters which significantly differed between the groups.

**Results:** In all groups IL28B genotypes were distributed according to the Hardy-Weinberg equilibrium. No significant differences in the genotype distribution were found after comparing the groups of responders and non-responders to HBV vaccination or anti-HBs negative and anti-HBs positive patients after HBV infection. HCV RNA positive patients differed from negative ones in the frequency distribution of IL28B rs8099917 (Ptrend = 0.031) and IL28B rs12979860 (Ptrend = 0.006). Subjects possessing rs8099917 GT+GG had 5.65 (95%CI 1.54-25.5)–fold higher probability to remain HCV RNA positive compared to the TT bearers (p = 0.005). Similarly, patients possessing rs12979860
CT+TT genotypes showed 4.50 (95%CI 1.34-15.5) –fold higher risk to be HCV RNA positive compared to the CC bearers (p = 0.011).

**Conclusions:** The IL28B SNPs do not affect response to hepatitis B vaccination or anti-HBs formation after infection among HD patients. HD patients bearing IL28B rs8099917 allele G or IL28B rs12979860 allele T have a lower chance for spontaneous HCV infection clearance.

**Heat shock protein 90 – an important player in the metabolic syndrome pathogenesis?**

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**Introduction:** The metabolic syndrome represents a cluster of metabolic disturbances that are risk factors for cardiovascular diseases. Impaired endothelium-dependent vasodilatation is an early abnormality associated with the metabolic syndrome. Endothelial dysfunction results from a decreased bioavailability of nitric oxide, partially regulated through interactions of the heat shock protein-90 (Hsp-90) with the nitric oxide synthase (NOS). Up to date, the Hsp-90 association with the metabolic syndrome pathogenesis remains not elucidated.

**Aim of the study:** The aim of the study was to evaluate serum concentrations of Hsp-90α in patients with the metabolic syndrome in comparison to their age- and gender-matched healthy counterparts.

**Material and methods:** The study was performed on 19 adult non-smoking patients (mean age of 56.3 years; 8 females and 11 males) newly diagnosed with the metabolic syndrome according to the International Diabetes Federation criteria, 2009. The control group was composed of 16 adult non-smoking individuals (mean age of 55.1 years; 10 females and 6 males) who did not fulfill the diagnostic criteria for this pathology. The participants of both the experimental group and the control group had an elevated waist circumference (equal to or higher than 80 cm in women and 94 cm in men). All the individuals presented no subjective feeling of any disease (particularly any cardiovascular disorder), had not been diagnosed with any component disease of the metabolic syndrome before, and admitted no drug treatment for any acute or chronic condition. Hsp-90α concentrations were evaluated by enzyme-linked immunosorbent assay (ELISA).

**Results:** The concentration of Hsp-90α was significantly higher (p = 0.01) in the patients with the metabolic syndrome than in the individuals not diagnosed with this pathology (18.99 ng/ml ± 2.73 versus 16.48 ng/ml ± 2.46, respectively). Hsp-90α concentrations correlated positively with systolic pressure values (R = 0.37; p = 0.027), serum triglycerides (R = 0.36; p = 0.036) and fasting plasma glucose levels (R = 0.37; p = 0.031). A negative correlation between Hsp-90α concentrations and high-density lipoprotein (HDL) cholesterol serum levels was observed (R = -0.34; P = 0.047).

**Conclusions:** An increase in Hsp-90α concentrations in patients with the metabolic syndrome may be a compensatory mechanism for an impaired bioavailability of nitric oxide. A possible role of Hsp-90α as an early marker of endothelial injury related to the metabolic syndrome should be confirmed in further studies.

**Correlation of Vitamin D level with the microvascular complications in Type -2-Diabetes patients: A Cross sectional study in a Tertiary care Hospital of India**

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Introduction: Vitamin D plays a very crucial role in glucose metabolism. It increases the Insulin exocytosis, enhances the glucose uptake by the peripheral tissues and improves the Insulin resistance. Not only that, it functions as a cytokine thus act as a modulator of innate immunity. It also shows the anti-inflammatory effect as it suppresses NF-kB (as in case of Gingivitis). Low vitamin D levels have been associated with higher plasma Renin and Angiotensin-2 concentrations, which play an important role in the pathogenic processes of Chronic Kidney disease and Albuminuria (Damasiewicz et.al). So the Vitamin D level can be associated with the pathogenesis of Neuropathy, Nephropathy and Retinopathy.

Aim of the study: To find out the correlation of vitamin D level with the microvascular complications in type-2 Diabetes Mellitus.

Material and methods: A cross sectional study of 165 patients in between 25-60 years who met the American Diabetes Association criteria for Type-2 Diabetes was conducted. Age and Sex matched healthy controls were taken. Serum 25-OH cholecalciferol levels were assessed for everyone. To find out the microvascular complications subjects were evaluated by clinical evaluation, Nerve conduction test, Urine test, Fundus examination, Ultrasonography of the abdomen and other required biochemical tests. Cut off level for vitamin D was 20 ng/ml.

Results: Vitamin-D deficiency was significantly higher in cases (61.212%) as compared to controls (35.27%) (p=0.0001). Only 7.2% cases had vitamin-D level>30ng/ml, while 36.66% of control were found to have sufficient (>30ng/ml). In total 61 cases had neuropathy (either singly or in combinations). Out of these 46 were vitamin D deficient. In the same way 44 out of 56 were retinopathy and 47 out of 59 having nephropathy were found to be vitamin D deficient. On evaluating various combinations of microvascular complications it was found that in the cases having one microvascular complication, 48.36%, 53.29% & 55.35% of those having neuropathy, retinopathy, Nephropathy respectively were found Vitamin D deficient. In cases having more than one microvascular complication, the percentage of vitamin D deficiency got significantly elevated.

Conclusions: The Result shows that the Vitamin-D level deficiency is associated with any of the individual microvascular complications in Type-2 Diabetes patient and even the decreasing Vitamin D level is associated with the combinations of microvascular complications in these cases.