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ABDOMINAL ULTRASOUND FOR ACUTE APPENDICITIS DIAGNOSTICS: SYSTEMATIC REVIEW AND META-ANALYSIS

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Introduction

Acute appendicitis (AA) is one of the most frequent causes of acute abdominal pain. The typical pain in McBurney's point has up to 92% sensitivity and 86% specificity. Clinical signs of AA have an overall 80% diagnostic accuracy for the disease. Reported sensitivity and specificity of abdominal ultrasound (US) for AA diagnostics is up to 92% and 96%. The reported negative appendectomy rate is up to 34%.

Study Aims

The aim of this systematic review and meta-analysis was to determine diagnostic accuracy of abdominal ultrasound for diagnosis of acute appendicitis.

Methods

We systematically searched Medline, Embase, The Cochrane library and Science Citation Index Expanded from 1994 to October 2014. The reference standard for evaluation of final diagnosis was pathohistological report on tissue obtained at appendectomy. Summary sensitivity, specificity and post-test probability of a patient having AA after positive and negative result of US with corresponding 95% confidence intervals (CI) was calculated. Pre-test probability was defined as prevalence of AA in included. We used Review Manager 5 and METADAS macro for SAS statistical package for statistical analysis. Methodological quality of included studies was evaluated using Quality Assessment in Diagnostic Accuracy Studies 2 (QUADAS-2) tool.

Results

We identified 3,306 references through electronic searches and 17 reports met the inclusion criteria with a total of 2,841 participants. None of the included studies were of high methodological quality. The summary sensitivity of US for diagnosis of AA was 69% (95% CI 59% to 78%), specificity was 81% (95% CI 73% to 88%). At the median pre-test probability of AA of 76.4%, the post-test probability for a positive result of US was 92% (95% CI 88% to 95%) and for a negative result was 55% (95% CI 46% to 63%). The result of sensitivity analysis did not significantly influence summary results of the analysis.

Conclusions

Abdominal ultrasound does not seem to have a role in the diagnostic pathway for diagnosis of acute appendicitis. The total US sensitivity and specificity do not exceed the sensitivity and specificity of clinical examination.

THE IMPACT OF SARCOPENIA ON SURVIVAL OF PATIENTS WITH PANCREATIC DUCTAL ADENOCARCINOMA

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Introduction

Pancreatic ductal adenocarcinoma is an aggressive and malignant disease. Five year overall survival is just about 4%. Despite the constant advances in therapy, no increase in survival is achieved. Controversial data can be found about sarcopenia and cachexia impact on pancreatic cancer survival.

Study Aims

Aim of the study was to analyze cachexia/sarcopenia impact on survival in patients with pancreatic ductal adenocarcinoma and to find out chahexia/sarcopenia incidence in this population.

Methods

The study was carried out as a prospective cohort study at Pauls Stradins Clinical University Hospital during the time period from January 1, 2013 to April 1, 2015. Computer tomography was performed in all patients and was used as diagnosis confirmation tool. CT scan images at vertebral level L3 were analyzed for sarcopenia assessment. For men muscular area < 52.4 cm^2/m^2, for women < 38.5 cm^2/m^2 as reference level of sarcopenia were used. Cachexia/sarcopenia impact on survival was analyzed. Data processed statistically with the SPSS 20.0 statistical package.

Results

41 patients were included in the study. 14(34%) male, 27(66%) female. The average age was 65 years (range 45-81y.). Sarcopenia was 59%, cachexia 90%, weight loss > 10% in 59% of included patients. The median survival of patients with sarcopenia was 185 days (range 20-575 d.), with no sarcopenia – 268 days (range 20-760). In patients with sarcopenic obesity survival was slightly reduced (p = 0.339). Kaplan-Meier survival curve in sarcopenic patients showed survival significantly (p = 0.005) decreased. By univariate analysis sarcopenia (HR 2.668, CI (95%) 1.308 – 5.440, p = 0.008), weight loss > 10% (HR 2.368, CI (95%) 1.037–5.408, p = 0.04), IV stage of disease (HR 2.836, CI (95%) 1.34 – 6.168, p = 0.009) were factors that significantly decreased survival. By multivariate analysis weight loss > 10% was unsignificant, but stage IV remained (HR 2.218, CI (95%) 0.999 – 4.922, p = 0.05).

Conclusions

In conlusion, study results showed sarcopenia as decreasing factor of survival in patients with pancreatic ductal adenocarcinoma. Cachexia, defined as a weight loss > 5%, revealed no impact, but the weight loss > 10% decreased survival. Study results suggest that management of sarcopenia and cachexia can prolong survival in patients with pancreatic cancer.

THE ANALYSIS OF TNF-α (-308) POLYMORPHISM IN PEPTIC ULCER IN IRANIAN PEOPLE

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Introduction

Tumor necrosis factor α (TNF-α) is an important mediator in inflammatory reactions and appears to play a central role in the pathogenesis of severe chronic inflammatory disease. The mechanisms which regulate the production and biological activity of TNF-α are under genetic control and play an important role.

Study Aims

The aim of this study was to analyze TNF-α (-308) polymorphism in peptic ulcer in Iranian people.

Methods

The total number of 140 subjects (70 patients with peptic ulcer and 70 normal controls) was enrolled into the study. The TNF-α -308 G > A polymorphism was tested by PCR-RFLP. We used the Chi-square (χ^2) test to evaluate allele and genotype frequency among the cases and controls.

Results

The TNF-α -308 G and A allele frequencies were 0.54 and 0.46 among cases, and 0.68 and 0.32 among controls, respectively. In cases and controles the GG genotype frequency was 30% and 47%, the GA genotype was 49% and 41%, and AA genotype was 23% and 12%, respectively. The presence of the A allele lead to an increased risk for developing peptic ulcer in relation to lead to the control group ($p = 0.0439$).

Conclusions

Our data suggest that the TNF-α-308 G > A polymorphism can be associated with the risk of peptic ulcer.

BIOSIMILAR INFLIXIMAB CT-P13 TREATMENT IN PATIENTS WITH INFLAMMATORY BOWEL DISEASES: A ONE-YEAR, SINGLE-CENTER RETROSPECTIVE STUDY

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Introduction

CT-P13 is the first approved infliximab (IFX) biosimilar. It has proven equivalent to IFX treatment in several rheumatoid disorders; however, limited efficacy data is available for its use in inflammatory bowel disease (IBD).

Study Aims

We evaluated clinical data from our first year using CT-P13 to assess its efficacy and safety in IBD patients.

Methods

This retrospective cohort study included all consecutive Crohn's disease (CD) or ulcerative colitis (UC) patients treated between March 2014 and April 2015. Clinical remission was evaluated for 14 weeks after the first induction treatment. Sustained clinical response during CT-P13 maintenance treatment was assessed every 8 weeks, both in CT-P13-induced patients and those switching from IFX.

Results

The cohort included 25 IBD patients (19 CD, 6 UC). There was a median five CT-P13 administration per patient (range 2–9). There were 128 total infusions. Thirteen patients (9 CD, 4 UC) underwent CT-P13 induction, and 84% (7/9 CD, 4/4 UC) achieved clinical remission by week 14. Sustained clinical response was maintained in 85% (3/3 CD, 3/4 UC) at week 30. Twelve patients (10 CD, 2 UC) switched from IFX, and 100% had sustained clinical response at week 24, 87.5% (6/7 CD, 1/1 UC) at week 32, and 75% (5/7 CD, 1/1 UC) at week 48. Four CD patients discontinued CT-P13 therapy due to injection reactions, psoriasiform skin rash, or loss of response.

Conclusions

Our data indicate that CT-P13 is comparable to IFX in terms of effectiveness and safety.

Conflict of interests

Study supported by an unrestricted grant form Hospira, Inc. In the last five years TH has served as a speaker, consultant or advisory board member for MSD, Abbvie, Hospira, Egis, Takeda, Alfa Wasserman, Pfizer and Vifor. He has received scientific grant from Ferring Pharmaceuticals and unrestricted educational grants from MSD and Abbvie.

DIGESTIVE SYSTEM DISEASES – THE MOST COMMON DISEASE GROUP AMONG PATIENTS INFECTED WITH ESBL PRODUCING BACTERIA

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Introduction

Infections caused by ESBL producing bacteria are associated with higher morbidity and mortality rates. Intra-abdominal infection, liver cirrhosis and biliary tract diseases are the most common digestive system diseases associated with ESBL infection and colonization, in literature ranging from 0.9 to 12.7% of all ESBL isolation cases.

Study Aims

To determine digestive system disease prevalence among patients diagnosed with ESBL producing bacteria infection.

Methods

Cross-sectional bacteriological, genetic and medical documentation study of all positive ESBL isolation cases in Riga East Clinical University Hospital from September 2013 till March 2014. An original study protocol was completed for each patient. Statistical analysis using SPSS 20.0. Diseases classified according to the ICD-10 (2015). Bacterial analysis done according to the EUCAST guidelines. CTX-M, TEM, SHV genes detected by PCR.

Results

136 ESBL producing bacteria isolates were obtained from 110 hospitalization episodes, 108 different patients. ESBL producing Enterobacteriaceae were isolated from 52 (38.2%) female and 84 (61.8%) male patients with the mean age of 61.35 ± 16.92 years. ESBL producing bacteria were mostly isolated from wound material (n = 44; 32.35%). Klebsiella pneumoniae were isolated in 66 (48.53%), Escherichia coli – in 36 (26.47%) cases. 132 ESBL producing bacteria isolates (97.06%) were CTX-M gene positive, 97 (71.32%) – TEM gene positive, 87 (63.97%) – SHV gene positive. Digestive system diseases were found in 67 (49.26%) patients diagnosed with ESBL producing bacteria infection, most frequently including acute (n = 12; 11.9%) and chronic (n = 11; 10.9%) pancreatitis, cholecystitis (n = 9; 8.9%), intestinal perforation (n = 14; 13.9%) and intraabdominal absceses (n = 6; 5.9%). Patients with digestive system diseases had more infectious and parasitic diseases ($rs = 0.314$, $p < 0.001$), 1.2 times less nervous system diseases ($p = 0.022$), 1.37 times less injury, poisoning and certain other consequences of external causes ($rs = 0.346$, $p < 0.001$) and less genitourinary system diseases ($rs = -0.226$, $p = 0.008$).

Conclusions

1) Digestive system diseases were the most frequently found disease group in ESBL patient population. 2) Digestive system diseases in patients infected with ESBL producing bacteria are more associated with infectious and parasitic diseases and less associated with nervous system diseases, genitourinary system diseases and injury, poisoning and certain other consequences of external cause.

DIGESTIVE SYSTEM DISEASES – A POSSIBLE RISK FACTOR FOR WORSE HOSPITALIZATION COURSE IN PATIENTS WITH ESBL PRODUCING BACTERIA INFECTION

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Introduction

Infections due to extended-spectrum beta-lactamase (ESBL) producing bacteria are associated with higher rates of morbidity and mortality, longer hospital stay and increased treatment costs. They present as a major therapeutic dilemma, as the choice of antibacterial medication is limited. Intra-abdominal infection, liver cirrhosis and biliary tract diseases are the most common digestive system diseases found in patients with ESBL producing bacteria infection.

Study Aims

To determine digestive system disease association with ESBL bacterial genes and hospitalization course in patients with ESBL producing bacteria infection cases.

Methods

All positive ESBL infection cases collected in Riga East Clinical University Hospital during 8 month period were analyzed using an originally created study protocol. Bacterial analysis was performed according to EUCAST guidelines, CTX-M, TEM, SHV gene presence was detected by PCR method. Data were analyzed using SPSS 22.0 software package, using non-parametric Mann–Whitney U test and Chi-square test.

Results

A total number of 136 positive ESBL infection isolates were obtained. 132 ESBL isolates (97.06%) were positive for CTX-M gene, 97 ESBL isolates (71.32%) – for TEM gene, 87 ESBL isolates (63.97%) – for SHV gene. Patients who suffered from digestive system diseases had more sepsis cases ($p = 0.018$) and more shock reports ($p = 0.021$) than patients who suffered from other system diseases, we also report that ICU admission were more often observed in patients with digestive system diseases ($rs = 0.34$; $p = 0.002$). The most common bacterial gene in patients with digestive tract diseases was TEM gene ($p = 0.018$). TEM gene presence was more often associated with endocrine, nutritional and metabolic diseases ($p = 0.006$), including diabetes ($p = 0.005$). TEM gene presence was also associated with increased mortality – 89.29% of all patients who died were TEM positive ($p = 0.018$), where CTX-M and SHV gene presence were not associated with increased mortality.

Conclusions

1) Digestive system diseases may act as a risk factor in ESBL infection cases for more frequent patient admission to the ICU and more frequent development of sepsis and shock. 2) Digestive system diseases are related to TEM gene, which is associated with worse prognosis and increased mortality.

ESOPHAGEAL BASELINE IMPEDANCE MEASUREMENT: RELEVANCE FOR GASTRO-ESOPHAGEAL REFLUX DISEASE DIAGNOSTICS

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Introduction

Mucosal integrity of distal esophagus in gastroenterological patients can be evaluated by measuring intraluminal baseline impedance (BI). BI is low in patients with gastro-esophageal reflux disease (GERD) and it can be used to distinguish them from patients with functional heartburn, dyspepsia. The conventional approach to determining the BI is time-consuming due to the necessity to select 'stable minute' (one minute without a reflux episode or swallow) every hour and calculate the median value of 24 samples.

Study Aims

To analyze the distribution of intraesophageal impedance values with determination of its mode (peak) as BI in control and GERD subjects and establish diagnostic value of this method for recognizing GERD.

Methods

Patients were divided on 2 groups: 1st [nonerosive GERD] – 7 women and 9 men, mean age (± S.E.M.) of 48.06 ± 3.86 y.o.; 2nd [Functional dyspepsia] – 8 women and 8 men, mean age 44.12 ± 3.66 y.o. All patients discontinued proton pump inhibitor therapy and then underwent esophagogastroduodenoscopy and multichannel intraluminal impedance (MII) pH-monitoring with measuring current 6 μA at a frequency of 1 kHz and sampling frequency of 50 Hz. BI was assessed at 3 cm proximal to the lower esophageal sphincter (LOS) by using the pair of stainless steel electrodes with diameter 2 mm, length 4 mm and distance 20 mm. A histogram of impedance values was generated for each recording using bin-width = 0.1 kΩ. Visual assessment allowed to establish peak (the most often value – mode) of histogram corresponded to BI and therefore excluded influences of swallowing, refluxes and etc.

Results

There were negative correlations between level of BI and acid exposure time ($r = -0.71$, $P < 0.0001$), the number of acidic reflux episodes ($r = -0.77$; $P < 0.0001$), the total number of reflux episodes ($r = -0.59$; $P = 0.00041$). The normal value of BI was calculated by means of ROC-curve. We obtained good AUC = 0.85 (95%CI 0.69–0.95; $P < 0.0001$). At a cut-off value of less than ≤ 2.5 kΩ BI measurements identified patients with GERD with 94.1% sensitivity and 81.2% specificity. It allowed additionally to recognize GERD in 2 patient without abnormal acid exposure and symptom association.

Conclusions

The approach to determining the BI in 24-h MII-pH-monitoring by obtaining the mode on histogram of impedance values.

EFFECT OF CORVITIN ON THE BILIARY FLOW RATE AND THE RATIO OF THE BILIARY BILE ACIDS IN RATS

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Introduction

Quercetin (3,3',4',5,7-penta-hydroxyflavone) is one of the most widely distributed flavonoids in plants and foods of plant origin. This natural substance has a great potential of pharmacological properties. It has been reported that quercetin possesses antihypertensive, antitumoral, antioxidant, anti-inflammatory, cardioprotective, gastroprotective, hepatoprotective activity. The mechanisms underlying these effects were thought to come from it antioxidant property. However, the specific mechanisms of quercetin action on the liver synthesis of bile and its composition still remain unascertained because of its low solubility in water and hence poor bioavailability in vivo.

Study Aims

To determine the effects of quercetin on the bile flow rate and the ratio of biliary bile acids in rats.

Methods

Healthy adult male rats weighing about 200–270 g were anesthetized with sodium thiopental (6 mg/100 g body weight). The common bile duct was then cannulated with a silicone cannula (0.5 mm in diameter) after a small incision was made. Corvitin – water-soluble form of quercetin (Kiev, Ukraine) were administered in portal vein at a dose of 5 mg/kg body weight. Control rats received saline. Bile was collected from each animal for 2.5 h every 30 minutes. In the samples of bile of control and experimental grouped rats, using the method of thin-layer chromatography, the following parameters were determined: bile flow rate; biliary concentrations of bile acids such as cholic, taurocholic, glycocholic, a mixtures of taurochenodeoxycholic and taurodeoxycholic, glycochenodeoxycholic and glycodeoxycholic, chenodeoxycholic and deoxycholic acids; total cholates; coefficients of conjugation and hydroxylation of bile acids.

Results

Corvitin caused a mild increase of bile flow rate, concentrations of certain bile acids, in particular, taurocholic, a mixtures of taurochenodeoxycholic and taurodeoxycholic, glycochenodeoxycholic and glycodeoxycholic and total cholates. In experimental rats Corvitin did not affect on the content of cholic and glycocholic acids and coefficient of hydroxylation but enhanced coefficient of conjugation of bile acids.

Conclusions

The observed changes in bile acid composition indicates an improvement of the colloidal properties of bile and may represent greater capacity of bile from rats treated with corvitin to solubilize cholesterol and emulsify fats.

GASTRIC AND LIVER SECRETORY FUNCTION IN EXPERIMENTAL ACUTE AND CHRONIC PANCREATITIS

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Introduction

Pancreatitis is an inflammatory disease which is characterized by destruction of pancreatic secretory parenchyma and may be accompanied by gastric and liver dysfunctions.

Study Aims

Our aim was to investigate stomach and liver secretory functions in rats with experimental acute and chronic pancreatitis.

Methods

In order to induction of acute pancreatitis a single dose of L-arginine (2 g/kg) and chronic pancreatitis a multiple dose of L-arginine (day 1 – 5 g/kg; day 4, 7, 10 – 2.5 g/kg) intraperitoneally were injected. At acute pancreatitis secretory processes were investigated in acute experiments: gastric secretion by Shay's method and bile secretion on rats with cannulated biliopancreatic ducts. At chronic pancreatitis basal gastric secretion was evaluated in chronic experiments by aspiration method for 10 and 63 days, and bile secretion – on the same rats in acute experiments at 13 and 68 days after induction of pathology.

Results

At 24 h after acute pancreatitis induction we obtained dual results. In 53% of rats the volume of gastric juice and acid secretion increased. In contrast, in 47% of animals these rates decreased. In all animals the secretion of gastric mucus inhibited. The basal bile flow and dihydroxy bile acids secretion rate increased, but tauro-, glyco- and free bile acids ratio is not changed. At 10–13 days of chronic pancreatitis the decrease of gastric hexosamine rate but increase gastric acid production and bile volume observed. Herein in the bile levels of free and taurine-conjugated bile acids decreased while glycocholates increased. In two months tendency to increase the acidity of the stomach and inhibition of mucus secretion is stored. Consequently gastric mucosa is more vulnerable. In these rats the rates of free bile acids greatly increased while tauro- and glycocholates significantly decreased. These changes indicate a inhibition bile acid conjugation with amino acids that results in deterioration of bile solubilizing properties and disturbance of detoxification liver function.

Conclusions

These data could provide insight into digestive tract functioning demonstrating the early and late pathophysiological pattern of acute and chronic pancreatitis and can be the basis for choosing appropriate treatment strategy.

EVALUATION OF MOTOR-EVACUATION FUNCTION OF THE STOMACH BY ULTRASOUND

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Introduction

In modern gastroenterology great attention is devoted to impaired gastric motility. This is due to the fact that, according to various studies, gastric motility disorders may be an important pathogenetic factor in the development of many gastrointestinal diseases.

Study Aims

To evaluate the prevalence of stomach motor-evacuation disorders using ultrasound in therapeutic profile patients.

Methods

The study involved 90 patients who were hospitalized in therapeutic clinic with internal organ diseases.

Results

The mean age of patients was 46.9 ± 2.2 years, among them men – 77.5%, women – 22.5%. According to fibrogastroduodenoscopy and ultrasound criteria 4 motor-evacuation disorders of the stomach were found: the presence of hiatal hernia, duodenal and gastroesophageal reflux disease, failure of the cardia. The analysis of the results of the ultrasound revealed stomach motor-evacuation dysfunction in 92.5% of cases. Young patients (WHO classification) accounted for – 37.5%, average – 45%, the elderly – 17.5%. Stomach motor-evacuation dysfunction found in ultrasound examination included: 15% cases of hiatal hernia, 17.5% cases of duodenal reflux, 37.5% cases of gastroesophageal reflux and 37.5% cases of incompetence of cardia. In comparison with the data obtained in fibrogastroduodenoscopy, motor-evacuation dysfunction of the stomach consisted of hiatal hernia in 17.5% of the cases (p – 0.763), duodenal reflux in 12.5% of the cases (p – 0.533), gastroesophageal reflux in 37.5 % of the cases (p – 1.000) and failure of the cardia in 80% of the cases (p – 0.0009), in contrast to the results obtained with US.

Conclusions

The data suggest a high frequency of motor-evacuation disorders of the stomach in patients with internal organ pathology. In contrast, from the endoscopic, ultrasound examination of the stomach has a number of advantages, such as non-invasive procedures, highly informative, easy to study, harmless to the health of the patient and the absence of contraindications.

AUTOFLUORECENT ENDOSCOPIC DIAGNOSTICS OF EPITHELIAL NEOPLASMS IN THE COLON

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Introduction

Fluorescent light is detected on the surface of the mucous and depends on the chemical composition of tissue, of collagen, hemoglobin and perfusion of many poorly studied factors. Increasing the concentration of porphyrins, for example, fluoresces in purple spectrum and observed with malignant neoplasms of the gastrointestinal tract.

Study Aims

To find out the correlation between autofluorescent (AF) colouring of colon neoplasms and their histomorphological structure.

Methods

269 cases of neoplasia lesions, detected by colonoscopy have been analyzed. Endoscopic videosystem Olympus Lucera CV-260 and endoscopes with aurofluorescent function (AFI) were used in the study. AF colouring of epithelial neoplasms in the purple or green colours was noted. To find out the dependence of AF colouring of epithelial neoplasms in the colon on their histological structure, all neoplasms were divided into 4 groups according to the Vienna classification. Group 1 included all types of invasive and non-invasive carcinomas confirmed histomorphologically; Group 2 included adenomatous neoplasms with dysplastic changes of degree 1-3; Group 3 included neoplasms with undefined dysplasia; Group 4 was a control group which included neoplasms with negative dysplastic changes and inflammatory character.

Results

269 neoplasias distribution: In Group 1 (controls) (n – 50) the purple color was observed in 19 cases (relative frequency (RF) 38%, 95% confidence interval (CI) 24–52%); Group 2 (n – 39) – RF 59%, 95% CI 43–74%; Group3 (n – 151) – RF 89%, 95% CI 84–91%; Group4 (n – 29) – RF 89%, 95% CI 76–97%. It has been found out that the purple AF colouring of epithelial neoplasms is 8,5 folds more probable than that in the control group.

Conclusions

The research has shown that AF colouring of epithelial neoplasms in the colon depends on their histological structure – carcinomatous and adenomatous neoplasms have the purple colour.

LEVELS OF PROSTAGLANDINS AND LEUKOTRIENES IN PATIENTS WITH ULCER DISEASE AFTER TREATMENT WITH PANTOPRAZOLE

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Introduction

The generally believed mechanism of peptic ulceration is prevalence of aggression factors over defense factors of the mucosa, the ratio of leukotriene B4 (LTB4) and prostaglandin E2 (PgE2) playing an important role here. NSAIDs inhibit cyclooxygenase pathway of arachidonic acid, thereby disturbing the synthesis of PgE2 which stimulates mucosal defense functions. On the contrary, LTB4 is an anti-nflammatory mediator which under certain conditions has ulcerogenic effect.

Study Aims

To assess the level of LTB4 and PgE2 in patients with coronary artery disease and concomitant NSAID-gastropathy against the background of long-term use of acetylsalicylic acid (ASA) and the appointment of a proton pump inhibitor – pantoprazole.

Methods

The study involved 62 patients with coronary artery disease and concomitant NSAID-gastropathy, which were divided into two groups: Group 1 – 35 patients who received ASA prophylactic dose (75 mg), Group 2 – 27 patients treated with ASA in the same dosage and for pantoprazole 40 mg per day for a month. All patients underwent general clinical work-up which include fibrogastroduodenoscopy, the evaluation of levels of endogenous prostaglandin E2 and leukotriene B4 in the blood by ELISA.

Results

In the first group of patients treated with ASA, the average level of LTB4 was 50.6 ± 1.1 ng/ml at a concentration of PgE2 1500.0 ± 88.0 pg/ml. Using fibrogastroduodenoscopy, gastric ulcer and duodenal ulcers were found in 11 cases and erosion in 37 cases. On administration of pantoprazole to patients of the second group, LTB4 levels significantly decreased to 21.2 ± 2.8 ng/ml ($p < 0.01$) within a month on the background of unreliable reduction of PgE2 to 1303.0 ± 73.0 pg/ml ($p > 0.05$). Using fibrogastroduodenoscopy, the number of gastroduodenal ulcers, were reduced to 6 and erosion to 32.

Conclusions

Administration of pantoprazole resulted in a significant reduction in gastroduodenal ulcers as a result, PPI use was associated with decreased levels of LTB4. At the same time, the dynamics of erosion reduction was insufficient, as evidenced by low levels of PgE2. These facts must be taken into account when carrying out further correction treatment strategy in patients with coronary artery disease and concomitant NSAID-gastropathy.

THE EFFICACY OF DEEP BIOPSY FOR SUBEPITHELIAL LESIONS IN THE UPPER GASTROINTESTINAL TRACT

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Introduction

An accurate diagnosis of subepithelial lesions (SELs) in the gastrointestinal tract depends on a variety of methods: endoscopy, EUS and different types of biopsy. Samples from the SELs lesions for a histopathological evaluation should also be obtained.

Study Aims

Our study aim was to evaluate the efficacy of deep biopsy (DB) via the endoscopic submucosal dissection (ESD) technique for SELs in the upper gastrointestinal tract.

Methods

It was a prospective case control study. DB via the ESD technique was completed in 38 patients between November 2012 and October 2014. 38 SELs in the upper gastrointestinal tract of various size by means of the ESD technique after the incision with a electrosurgical knife of the overlying layers and disclosing a small part of the lesion were biopsied under a direct endoscopic view.

Results

DB via the ESD technique was diagnostic in 28 of 38 patients (73.3%; 95%CI, 59.7–89.7%). The diagnostic yield for SELs with the clear endophytic shape increases to 91.3%. An evident endophytic appearance of a subepithelial lesion, a mean number of biopsied samples (6.65 ± 1.36) and a total size in length of all samples per case (19.88 ± 8.07 mm) were the main criteria influencing the positiveness of DB in a diagnostic group compared to a nondiagnostic one ($p = 0.001$; $p = 0.025$; $p = 0.008$). The pathological results were as follows: 13 leiomyomas (34.2%), 9 gastrointestinal stromal tumors (GISTs) (23.7%), 2 lipomas (5.3%), 2 ectopic pancreas (5.3%), 1 Brunner's gland hyperplasia (2.6%) and 1 mesenchymal tumor with a low malignant potential (2.6%); in 10 biopsies were not informative (26.3%). The DB was unachievable in 7 GIST cases to correctly identify the mitotic count and the risk because of insufficient high power fields (HPF) revealed by the pathological examination of biopsied specimens.The rate of complications in a decreasing number were: non-intensive bleeding 21 (55.3%), intensive bleeding 2 (5.3%) and perforation in 1 case (2.6%).

Conclusions

DB via the ESD technique is an effective and safe method for the diagnosis of SELs especially with the clear endophytic appearance in a large number of biopsied samples.

BARRETT'S ESOPHAGUS: COMPARATIVE EFFICACY OF TREATMENT MODALITIES

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Introduction

Esophageal cancer is still on the 6th place in the structure of the world's oncological diseases. The spectrum of cancer pathology in the esophagus has significantly changed with a marked increase of esophageal adenocarcinoma (EAC). In this connection, the diagnosis and treatment of patients with Barrett's esophagus remains important (BE).

Study Aims

To compare the efficacy of different BE treatment approaches.

Methods

209 patients with morphologically confirmed BE were followed-up for 5 years. The first group – 124 patients with intestinal metaplasia (IM), the method of treatment – conservative therapy (CT). The second group – IM and dysplasia (D) I-II – 78 patients after failed CT, who underwent endoscopic treatment (ET): argon plasma coagulation (APC, n = 41) or photodynamic therapy (PDT, n = 37). The third group consisted of 7 patients with EAC ($T_1N_0M_0$); 2 of them with multifocal lesions were treated with PDT; 5 with focal lesions underwent PDT with mucosectomy. Endpoints included IM eradication rate (R1), EAC and displasia regression rate (R2), risk of IM and dysplasia reduction and EAC relapse (R3), incremental cost-effectiveness ratio (ICER).

Results

Conventional CT with proton pump inhibitors (PPIs) demonstrated equal effectiveness (p = 0.22) provided appropriate duration and continuity: R1 = 76.5%, R2 = 0%, R3 = 5.7%, ICER < 1% for different PPIs. Efficacy of APC and PDT in the second group was equal (p = 0.13). In technical aspect PDT is more labor-consuming and poorly tolerable with R1 = 73.1%, R2 = 35.9%; R3 = 9.1% and ICER = 7.4%. 28 patients after failed ET (APC/PDT) underwent laparoscopic Nissen-Rossetti fundoplication (LF). LF for 28 patients of the second group helped to decrease R3 to 3.1%, while ICER increased to 10.2%. In the third group R2 = 100%, R3 = 34.2% and ICER = 20.4%.

Conclusions

1) The type of BE treatment depends of morphological diagnosis and the effect of the previous therapy. 2) Step-by-step approach minimized the risk of dysplasia reduction up to 3.1% with ICER 10.2%. Nevertheless these patients are most vulnerable to malignancy. 3) Aggressive treatment approach to patients with EAC (T1N0M0) enabled us to achieve regressive changes in 100% of patients in 5-year period.

MAIN COMPONENT ANALYSIS OF CHARACTERISTICS OF CURRENT ULCERATIVE COLITIS MILD TO MODERATE ACTIVITY

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Introduction

Ulcerative colitis is characterized by numerous indicators and the adequate assessment of their separate significance for the current state of the patient is often contradictory. The allocation of the grouping factors determining the covariance of the observed variables can contribute to the reduction of their number with increasing information load.

Study Aims

Using the method of principal components, determine the structure of the factors that characterize ulcerative colitis mild to moderate activity course.

Methods

23 outpatients aged 24 – 63 years with ulcerative colitis mild to moderate activity (MMDAI 4–10 points) are studied. The complex clinical, laboratory and instrumental examination, including anamnestic data, physical examination, serum C-reactive protein, fecal calprotectin, lactoferrin and colonoscopy, was carried out. Factor analysis of the data was performed.

Results

The four-components model was obtained, that describes the dispersion of the studied parameters by 80.5%. The first principal component, which determines the 31.3% of the total variance, accounted for variables such as the current daily dose of 5-ASA, prolonged use of prednisone, general disease activity, endoscopic disease activity and frequency of bowel movements. It was specified as control of disease activity. The second major component includes such factors as the duration of illness and duration of administration of 5-ASA, described the 20.8% of the variance and was named the time of disease control. The third group of indicators, covering 19.4% of the variance, included the activity of lactoferrin and the presence of intestinal hyperplasia and formed the main component, which was characterized as productive component of inflammation. The rotation of the factor structure insignificantly reduced the factor loadings of the third component (up to 18.4%), but allowed to group positively interconnected parameters of the duration of the use of glucocorticoid hormones, levels of C-reactive protein and the presence of colonic polyps. The fourth component determined 9.1% of the variance and show no strong relationships.

Conclusions

Factor analysis of the indicators of current ulcerative colitis mild to moderate activity allows to identify a number of principal components characterizing the activity of inflammatory bowel disease, its timing and factors of productive component of inflammation.

CLINICAL AND PATHOGENETIC FEATURES OF NONALCOHOLIC FATTY LIVER DISEASE IN PATIENTS WITH METABOLIC SYNDROME AND INFLAMMATORY BOWEL DISEASES

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Introduction

The reason of nonalcoholic fatty liver disease (NAFLD) may be various diseases and metabolic status.

Study Aims

The aim of the study was to compare the structure, clinical and pathogenic features of NAFLD in metabolic syndrome (MS) and in inflammatory bowel diseases (IBD).

Methods

102 NAFLD patients were studied (63 – 61.8% – men, 39 – 38.2% – women), aged 44.8 ± 12.0 years; 60 (58.8%) patients with MS and 42 (41.2%) with IBD: 15 (14.7%) with Crohn's disease (CD) and 27 (26.5%) patients with ulcerative colitis (UC). Routine clinical, laboratory and instrumental examination of liver and intestines were used.

Results

Among patients with MS steatohepatitis (SH) was detected in 58.3 %, steatosis – at 41.7 %; among patients with IBD – at 64.3 % and 35.7 %, respectively, including among patients with CD – at 66.7 % and 33.3 %, and among patients with UC – at 63.0 % and 37.0 %, respectively. ALT was similar in MS and IBD: 51.90 ± 30.18 U/l and 46.26 ± 29.02 U/l ($p > 0.05$) respectively. Cholestasis was maximal in CD – alkaline phosphatase (ALP) – 447.21 ± 146.2 U/l, lower it was in the MS – 296.41 ± 225.36 U/L ($p > 0.05$) and the minimal – in UC – 164.7 ± 45.32 U/l ($p < 0.05$). ALT positively correlated with triglycerides (TG) $r = 0.61$ ($p < 0.05$) in MS, negatively – with albumin $r = -0.87$ ($p < 0.05$) and TG $r = -0.78$ ($p < 0.05$) in CD. ALT negatively correlated with the level of bifidobacteria $r = -0.5$ ($p < 0.05$) in CD and positively – with the level of pathogens in UC $r = 0.35$ ($p < 0.05$); ALP positively – with low density lipoproteins $r = 0.71$ ($p < 0.05$) in CD.

Conclusions

Steatohepatitis (58.0%) and steatosis (42.0%) were detected with the same frequency in MS, steatohepatitis prevailed in IBD (64.3%). Cytolytic activity was similar in MS, CD and UC, intrahepatic cholestasis was the highest in CD. Pathogenetic role in NAFLD in MS played hypertriglyceridemia, in Crohn's disease – hypoalbuminemia, deficit of bifidobacteria and dyslipidemia, in ulcerative colitis – overgrowth of intestinal flora and probable translocation of its components to liver.

CORRECTION OF FUNCTIONAL DISORDERS OF THE SMALL INTESTINE REDUCES LITHOGENIC PROPERTIES OF BILE

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Introduction

In recent years the development of cholelithiasis has been considered to be associated with the disturbances of enterohepatic circulation which is caused by the decreased reabsorption of bile acids in the small intestine. Therefore carrying out researches on identification of the role of the small intestine in the mechanisms of development of cholelithiasis is of great importance.

Study Aims

To research functional disorders of the small intestine and biliary tract in the dynamic of treatment of enteropathy in cholelithiasis.

Methods

30 patients aged 18 to 55 with prestone stage of cholelithiasis were examined. The diagnosis was made on the basis of biochemical research of the bile and ultrasonography. Functional condition of the small intestine was estimated according to clinical data and complex diagnostic testing. Cavitary digestion was studied by load test with polysaccharide soluble starch, membrane digestion – with disaccharide sucrose, absorption – with monosaccharide glucose load test. To correct the functional condition of the small intestine we used enzyme "Enzystal" which comprises components of bile and "Riboxin" which activates the metabolic and regenerative processes in the intestinal mucous membrane. The course of treatment was 15 days.

Results

Before the treatment most of the patients had clinical and functional disorders of the small intestine associated mostly with the disturbances of cavitary digestion. After the treatment cavitary digestion improved by 23%, membrane digestion – by 15%, ultrasonography of the gallbladder showed that 68% patients had improvement in rheological properties of bile – reduction of its density and disappearance of echoic suspension. In dynamics of the treatment the cholato-cholesteric coefficient in portion "B" increased from 0.7 ± 0.05 to 2.1 ± 0.23 pieces and in portion "C" – from 0.5 ± 0.03 to 1.1 ± 0.05 pieces, testifying to the decrease of lithogenic properties of bile.

Conclusions

Correction of functional disorders of the small intestine is followed by decrease of lithogenic properties of bile. The obtained data can be used in searching new ways of prevention of gallstone formation due to recovery of functional condition of the small intestine.

CHRONIC HEPATITIS DELTA INFECTION IN ENDEMIC REGION OF RUSSIAN FEDERATION (REPUBLIC TYVA)

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Introduction

Hepatitis delta (HD) is one of the most serious infectious liver diseases that is characterized by a rapid progression to cirrhosis, development of hepatocellular carcinoma and low response to antiviral therapy.

Study Aims

To assess the clinical course and outcomes of chronic hepatitis delta infection among persons living in endemic region (Republic Tyva).

Methods

Total of 383 patients with HBV/HDV coinfection in Tyva and their family members were followed during 2009-2014. HBsAg, anti-HBc, HBeAg, anti-HBe and anti-HDV were tested using commercial ELISA tests; HDV RNA and HBV DNA were tested using in house nested PCR. HDV genotyping was carried out by direct sequencing.

Results

Out of 383 followed patients with HDV-infection 72.3% (277/383) had chronic hepatitis, 27.7% (106/383) had liver cirrhosis (LC). Based on anamnesis data all these patients acquired HDV as a superinfection upon chronic hepatitis B. Among these HD patients, 14.1% (54/383) were healthcare workers. In the observation period (5 years) progression of CL was observed among 10.7% (13/121), decompensation of LC – in 14% (17/121) and hepatocellular carcinoma – in 6.6% (8/121). In annually followed patients mortality was 15.7% (19/121), with hepatic coma and bleeding from esophageal varices as the main cause of death. HBsAg and anti-HDV were detected in members of 18/383 (4.7%) patients families belonged to three generations (parents/children, spouses, brothers/sisters). HBV replication was determined in 6 (14.3%) patients, HDV — in 8 (19.1%). All HDV isolates identified in Tyva belonged to genotype I. In the phylogenetic tree, which includes 8 HDV isolates from the Republic Tyva and reference sequences HDV genotype I, isolated in the Russian Federation (GeneBank), the sequences of HDV from Tyva did not form a single cluster within genotype I. The following describes intrafamilial case:mother (42 years), father (45 years) and daughter (17 years) had anti-HDV. Mother and daughter had advanced CHD with HDV replication (HDV RNA+) with HBV replication (HBV DNA+) in mother.

Conclusions

Hepatitis delta is a serious healthcare problem in several regions of Russian Federation, such as Tyva. The key features of HD epidemic process in Republic Tyva are high rates of intra-familial transmission and the high prevalence of HDV in healthcare workers.

PREDICTORS OF GALLSTONE FORMATION IN PATIENTS WITH METABOLIC SYNDROME

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Introduction

The assumptions about the connection between metabolic syndrome and gallstones (cholelithiasis) exists for a long time. The crucial role of gallstone formation is given to lipid metabolism disorders in the liver, which result in an increased release of cholesterol in the bile. In turn, the excess of gallbladder bile cholesterol stimulates mucin production by the gallbladder wall – an important component of cholecystic sediment, that increases the aggregation microlites in bile. Recent experimental studies indicate that obesity that results in marked fatty infiltration of the gallbladder wall, as a result, reduces the contractile ability of the gallbladder body, thereby increasing the concentration of bile and formation of stones. However, there is not enough studies that showed statistically significant biochemical, immunological and ultrasound data determining the risk of developing gallstones in the gallbladder in patients with metabolic syndrome.

Study Aims

To determine the leading biochemical, immunological and sonographic markers, reflecting the risk of gallstone disease in patients with metabolic syndrome.

Methods

Assessment of clinical, biochemical, immunological and sonographic parameters in 54 patients with cholelithiasis associated with metabolic syndrome (MS) and 60 individuals of comparison groups (31 with metabolic syndrome without gallstone disease and 29 with cholelithiasis without metabolic syndrome). To simulate significant correlation and prediction of the effect of different combinations of risk factors on the developing of gallstones in patients with metabolic syndrome used the multiple logistic regression analysis.

Results

The leading factors that reflect a high risk of forming stones in patients with MS are increase in LDL-C in serum ($p = 0.02$), elevated levels of serum GGT ($p = 0.00001$), MMP-9 ($p = 0.002$) and its inhibitor TIMP-1 ($p = 0.02$), increase in thickness of the left liver lobe ($p = 0.002$) and the wall thickness of the gallbladder ($p = 0.002$). The equation $Y = 3 - 5.1^{*}$ (GGT) $- 0.03^{*}$ (LDL-C) $- 0.9^{*}$ (MMP-9) $+ 2.1^{*}$ (TIMP-1) $- 1.6^{*}$ (TLD) $- 0.6^{*}$ (gallbladder wall thickness)

Conclusions

The results of our study showed that patients with signs of metabolic syndrome have a high risk of developing gallstones.

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* *statistically significant factors.*

URSODEOXYCHOLIC ACID IN THE TREATMENT OF BILIARY SLUDGE

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Introduction

Diseases of gallbladder and biliary tract occupy one of the leading places among digestive diseases. The term "biliary sludge" (BS) refers to any heterogeneity of the bile revealed by sonographic examination. Among those who complained, typical of dyspepsia of biliary-type detection rate reaches 50-55% BS. In addition to the possible formation of gallstones, frequent complications include BS dysfunction and stenosis of the sphincter of Oddi, biliary pancreatitis.

Study Aims

To evaluate the effectiveness of therapy BS Russian drug UDCA – Urdoksa ("Farmproekt", St. Petersburg) at a dose of 10 mg/kg per day for 3 months.

Methods

The study included 58 women aged 30-54 years (mean age 43 + 3.4 years) with the BS.

Results

After 3 months of Urdoksa a dose of 10 mg/kg once per day at night according to US noted the disappearance of BS in 50 patients (86.2%). The remaining 8 patients out of which 4 were from the BS lutes bile and combination with bile microlites disappearance BS was observed after 2 months of therapy with additional Urdoksa at 15 mg/kg.

Conclusions

Indications for conservative therapy courses of BS, even accompanied by clinical symptoms, it is its stable detection by ultrasound for 3 months. With the ineffectiveness of non-drug interventions carried out with the use of drugs ursodeoxycholic acid (UDCA). The clinical effect of UDCA in the BS is due to lower lithogenicity bile and increase the nucleation time that prevents the formation of microliths and helps dissolve cholesterol stones. The results indicate the efficacy of UDCA – Urdoksa BS in therapy and compared with results obtained previously using the drug Ursosan.

PREVALENCE OF FUNCTIONAL BOWEL DISORDERS AND ITS ASSOCIATIONS WITH INSUFFICIENT DIETARY FIBER INTAKE AMONG PATIENTS WITH NON-INSULIN-DEPENDENT DIABETES MELLITUS

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Introduction

Functional Bowel Disorders (FBDs) are common among people affected by diabetes. Dietary fiber (DF) works as bowel regulator and can be effective for constipation and diarrhea. Based on the available evidence on bowel function, the European Food Safety Authority (EFSA) considers DF intakes of 25g/day to be adequate for normal laxation in adults. As for the general population, people with diabetes are encouraged to consume a variety of fiber- containing foods.

Study Aims

To identify the prevalence of FBDs and to verify its possible associations with insufficient DF intake in patients with non-insulin-dependent diabetes mellitus (NIDDM) treated at the endocrinology outpatient clinic at Pauls Stradiņš Clinical University Hospital, from June to August 2015.

Methods

We collected data from 49 patients with NIDDM. For the analysis of food intake, the 24 hours recall method was used. The calculations of the nutritional components were performed with the aid of Nutrisurvey Software. Functional bowel disorders was defined through the RomeIII criteria. Results are expressed as mean ± standard deviation (SD). Comparisons between means were carried out using the one sample t-test. The statistical analysis were performed by IBM SPSS 22.00 software.

Results

A total of 49 NIDDM patients were interviewed 16(33%) were men and 33(67%) were women. The mean of age was 61 ± 9 years for women, and 56 ± 10 years for men. The mean duration of diabetes was 8 ± 6 years, HbA1c was 7 ± 1. The mean BMI was 35 ± 6. On average patients eat about 1900 kcal/d, 35E% from carbohydrate, 42E% from fat, and 23E% from protein. FBDs were reported in 25(52%) of patients, 16(33%) constipation, 9(19%) diarrhea. Comparison to EFSA recommendation on DF intake (25 g/d) patients with constipation do not met this recommendations 17 ± 4 g/d ($p < 0.001$), as well as patients with diarrhea 19 ± 6 g/d ($p < 0.05$). Difference of DF intake in patients without FBDs is insignificant according to EFSA recommendations 23 ± 6 g/d ($p > 0.05$).

Conclusions

Increased frequency of FBDs and insufficient DF intake were common in NIDDM patients. Increasing fiber intake may have positive effect on constipation or diarrhea in diabetic patients. To compare seasonal differences the survey should be repeated in winter period.

COMPENSATION AND DECOMPENSATION OF MECHANISMS THAT REGULATE THE SECRETORY ACTIVITY OF THE PANCREAS

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Introduction

Compensatory balance. This term refers to regulation of mechanism developed in the body that contribute to equalization of functions disturbed in the pathological process.

Study Aims

To detect a dysfunction in the system that regulate the secretory activity of chronic alcoholic pancreatitis.

Methods

The study included 108 patients with CP alcoholic etiology, the control – 30 people. Before and after breakfast – determined serum level Acetylcholine (Ach) and cholinesterase (Che), of serotonin (5-HT) in blood, fecal elastase. Standard breakfast, was used as a stimulator of secretion of pancreatic secretory.

Results

In the control group, there is a tendency to an increase of 5-HT with 0.19 ± 0.02 to 0.23 ± 0.019 mcg/ml. Increased levels of Ach from 0.8 ± 0.06 to 1,0 ± 0.05 mmol/l ($p < 0.05$). This increase Ach it was due to decrease the activity of Che from 0.9 ± 0.1 to 0.5 mmol/l.30 min ($p < 0.01$). In patients with CP studied alter the content of biologically active substances on food intake: increased levels of 5-HT from 0.39 ± 0.05 to 0.6 ± 0.07 mcg/ml, and decreased Ach from 1.8 ± 0.4 to 1.6 ± 0.3 mmol/l ($p > 0.05$). Che activity was low both before and after a meal (0.1 ± 0.02 mmol/l.30 min). Increase levels 5-HT and Ach had got inverse correlation with levels of elastase in the feces and direct correlation with disease duration. In the compensation period the 5-HT after meals decreased to baseline values. Reactive duodenitis with chronic pancreatitis can be a source of high content of 5-HT. 5-HT has a direct and feedback from nociceptor sistem, being both its activator and subject's synthesis and secretion from nociceptor terminals.

Conclusions

Food is a natural test load to verify the regulatory mechanisms. Pain was the syndrome of post-prandial increase in 5-HT. The source of 5-HT may be E-cells in mucosa of the duodenum.

THE ABSORPTION OF MONOSACCHARIDES IN THE SMALL INTESTINE WITH A CARBOHYDRATE FREE DIET IN THE EARLY POSTNATAL ONTOGENESIS

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Introduction

The impact of carbohydrate free diet in the period of early postnatal ontogenesis upon the absorption of monosaccharides has not been studied sufficiently.

Study Aims

The aim of this work was to investigate the glucose and fructose absorption in the small intestine of rats kept on a carbohydrate free diet in the period of early postnatal ontogenesis.

Methods

The research has been carried out on male rats with an isolated segment of the small intestine in situ.After weaning (on day 18-19), the young rats of the experimental group were on carbohydrate free diet during 6 weeks. Then, a part of the animals were put on the standard food ration. The reference group comprised the animals that were kept after weaning on the standard food ration.

Results

It has been revealed that, in rats kept on the carbohydrate free diet after weaning, the intensity of glucose absorption is only 20-30% of this index value in the reference group animals and fructose absorption is practically absent. After 6 weeks of the animals' carbohydrate free diet, a considerable decrease of the maximum glucose transport rate (Jmax) (in 3.5 times), an increase of the nonsaturable absorption rate constant (Kd) (almost in 2 times) and the Michaelis' constant (Kt), a decrease of the active glucose transport system's effectiveness coefficient (Jmax/Kt) (in 4.6 times) were observed. As early as in 3 days after putting the animals from the carbohydrate free diet on the standard food ration, a noticeable increase of the glucose absorption intensity as well as the possibility to mention some minor level of fructose absorption occurred. In the course of the subsequent 4-5 weeks, the intensity of monosaccharide absorption had been somewhat increasing. In 6 weeks after putting the animals from the carbohydrate free diet on the standard food ration, the glucose absorption rate was in 1.5 times whereas the fructose absorption one – in 3.6 times less than the corresponding values of the reference group.

Conclusions

A prolonged carbohydrate free diet in early postnatal ontogenesis substantially reduces the absorption of monosaccharides in the small intestine and is conductive to the development of malabsorption in the subsequent life.

NUTRITION IN ELDERLY PEOPLE

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Introduction

Population aging increases problems with health and independence of people. Diseases of aging related, primarily, with a decrease in muscle mass – the main energy consumer of carbohydrates and fats. In response to glycemia and lipidemia goes increased secretion of insulin which facilitates transfer of glucose and free fatty acids in the triglycerides storage in adipocytes. Increased body fat mass leads to migration macrophages which secrete TNF and IL-6. In the liver, these cytokines contribute to the secretion of SRP – the etiologic factor in the development of diseases of the cardiovascular system. Therefore, the fight against diseases of aging is essentially in events aimed at increasing of muscle mass.

Study Aims

Based on published data and understanding of the key role of protein metabolism in the coordination of the metabolic processes in the body proposes ways of prevention and treatment of chronic noncommunicable diseases by means of nutrition factor.

Methods

In work PubMed data and author's own theoretical developments on etiology and pathogenesis of sarcopenia, diabetes and obesity were used.

Results

It proposed a phased way to improve the process of protein synthesis by the: adequate supply of the body with protein and essential amino acids; use of anabolic ergogenic compounds which employ in sports practice (BCAA, creatine, nitrogen-free leucine metabolite). From the pharmacological side can be used stimilators of protein synthesis: testosterone, estrogen, growth hormone. The reduction of protein catabolism in the post absorptive period can be achieved by using alanine and fructose. The positive effect of these approaches increases with the use of physical activity, especially anaerobic orientation.

Conclusions

In nutrition of elderly people it is necessary to increase the intake of protein to 1.2 g/kg/day. In addition for strengthening of protein synthesis it is necessary to enter anabolic amino acids and creatine. To reduce the amount of protein degradation in the post absorptive period alanine or fructose can be used.

THE TREATMENT OF SALMONELLOSIS BY NEW PROBIOTIC – A-BACTERIN

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Introduction

"A-bacterin" belongs to a group of bacterial drugs that consist of normal microflora. It is a lyophilized culture of microorganisms belonging to Aerococcus's species.

Study Aims

The purpose of the study was experimental and clinical substantiation of oral application of "A-bacterin" for the prevention and treatment of salmonellosis.

Methods

Two groups of patients were researched. 90% of patients had diagnosis salmonellosis, except for clinical and epidemiological points, diagnose was confirmed by isolation of *Salmonella* from feacal culture and serologically (using Reaction Passive Hemagglutination with Salmonellesis complex diagnosticum), and diagnosis for 10% of patients was based on serological points. 90% of isolated *Salmonella* were *S. enteritidis* and the rest 10% were *S. infanti*, *S. typhimurium*, *S. newport* and others.

Results

Group 1 (control) consisted of 20 patients with gastrointestinal salmonellosis. They were treated fase with antimicrobials drug of different effect mechanism (chloramphenicol, biseptol, gentamicin, polymyxin, and others) in the acute stage of the disease. The second group consisted of 18 people who took the drug instead of antimicrobials drugs during the acute phase of disease. 3rd group had 35 people who took the drug during the period of early reconvalescence. The analysis showed that the patients of 2nd group had an improvement in general condition and reduction of the severity of intoxication that have been observed on the 2nd day of treatment, temperature of the body was normalized on 3-4 day of taking "A-bacterin". The general condition became satisfying on the 6-7 day, and normalization of faecal occurred on the 5 or 6th day of treatment. As it was already mentioned, in the 3rd group of patients, the drug was prescribed during the period of attenuation of clinical demonstrations on about the 4 day of hospital stay. However, it should be noted that antibiotic therapy that was conducted in this group of patients strengthened dyspeptic disorders and worsen the condition of patients.

Conclusions

Statistical analysis showed that number of days that patient spent in a hospital in the 1st group was 11.64 ± 0.96, in the 2nd group 10.45 ± 1.37 and in the 3rd group was 12.4 ± 1.16.

THE PREVALENCE OF SMALL INTESTINAL BACTERIAL OVERGROWTH IN PATIENTS WITH INFLAMMATORY BOWEL DISEASES

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Introduction

Intestinal bacterial overgrowth is considered common in patients with inflammatory bowel diseases (IBD).

Study Aims

To establish the prevalence of small intestinal bacterial overgrowth (SIBO) in patients with ulcerative colitis (UC) and Crohn's disease (CD) as well as to identify the influence of SIBO on clinical symptoms formation and course of inflammatory bowel diseases.

Methods

The study involved 46 IBD patients: 17 men, 29 women; aged 19 to 60 years, mean age was 37.05 years. Out of 46 patients there were 18 CD and 28 UC patients. Duration of IBD was from 1 to 40 years. Hydrogen breath test ("Gastrolyzer", England) was used for evaluation of SIBO.

Results

Before the study most of the patients complained of intermittent or persistent bloating, flatulence, abdominal pain, diarrhea, weight loss, frequent loose stools. UC patients were divided into three groups depending on the extent and activity of disease. In the group with mild disease SIBO was diagnosed in 10 out of 21(47.6%) patients, in the group with moderate course of UC – in 1 out of 5 (20%), and in the third group with severe UC – in 1 out of 2. According to the extend of the inflammation patients were divided into three groups. In patients with total colitis SIBO was observed in 3 out of 13 (23%) patients; in the group with left-sided colitis – in 2 out of 3 patients; in patients with distal colitis – in 7 out of 12. So SIBO was identified in 12 out of 28 UC patients (42.9%). In patients with CD SIBO was diagnosed in 7 out of 18 (38.9%). The average body mass index of patients with SIBO was lower (22.9 vs. 26.2 kg /m^2) than in patients without SIBO. All patients with SIBO were prescribed rifaximin followed by probiotics. The effect of treatment was assessed in a month and resulted in reduction of bloating, abdominal pain, and diarrhea; weight gain and improved quality of life.

Conclusions

SIBO was revealed in about 40% of IBD patients. Timely recognition of SIBO allows to give appropriate treatment resulting in symptom reduction and improvement in quality of life.

H. PYLORI ERADICATION THERAPY DOESN'T INFLUENCE INTESTINAL MICROBIOTA

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Introduction

According to Maastricht-IV Consensus H.pylori should be eradicated in case of gastric and duodenal ulcer disease, atrophic gastritis, MALT lymphoma, in patients with long-term PPI therapy, etc., as well as in those who're willing to undergo this therapy. One of the major concerns in patients taking 2-week eradication regimen is probable influence of antibiotics on intestinal microbiota.

Study Aims

The aim of the study was to evaluate the influence of eradication therapy on microbiota.

Methods

30 stool samples (10 from H.pylori-positive patients before eradication therapy, 10 samples – from the same patients after eradication as well as 10 stool samples form healthy H.pylori-negative volunteers) were taken for analysis. Eradication regime included amoxicillin 1000 mg bid, clarithromycin 500 bid, bismuth subsalycilate 240 mg bid and esomeprazole 20 mg bid for 14 days. Lactulose as prebiotic was added for 14 days during eradication therapy. DNA was extracted manually, stool samples were homogenized using zirconia-silica beads. Metagenomic DNA was sequenced using SOLiD 5500xl Wildfire sequencing machine with read length of 50 bp and approximate resulting reads number of 50,000,000 per sample.

Results

In control samples from *H. pylori*-negative volunteers *Bacteroides*, *Prevotella*, *Coprococcus* and *Eubacterium* genera as well as *Lachnospiraceae* family bacteria were the most abundant taxons. *Bacteroides*, *Prevotella*, *Coprococcus*, *Lachnospiraceae* were predominant in stool samples from *H. pylori*-positive patients before eradication, however, *Faecalibacterium* and *Methanobrevibacter* were also detected. In all samples obtained after the eradication therapy *Bacteroides*, *Prevotella*, *Eubacterium* genera and *Lachnospiraceae* family were most abundant. We didn't find statistically significant clastering of samples according to *H. pylori* status or antibiotic use.

Conclusions

The lack of significant changes in microbiota status after eradication therapy can be explained by the absence of eradication therapy influence on intestinal microbiota while using antibiotics in combination with prebiotic, however it could be due to the small number of samples.

ACUTE TUBULAR NECROSIS IN CIRRHOTIC PATIENTS WHO MEET THE CRITERIA OF HEPATORENAL SYNDROME

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Introduction

In decompensated cirrhosis increase in serum creatinine may be caused structural or functional of kidney injury. Patients with acute tubular necrosis (ATN) are more likely to require renal replacement therapy than patients with hepatorenal syndrome.

Study Aims

We aimed to investigate the frequency of acute tubular necrosis in hospitalized patients with decompensated cirrhosis who died with hepatorenal syndrome (HRS).

Methods

This was a retrospective study of 142 hospitalized cirrhotic patients (City Hospital's medical records). All of them had died of cirrhosis complications from 2008 to 2010. In hospitalized patients AKI was defined according to AKIN criteria (Wong, 2011).

Results

Total 142 patients with histologically confirmed cirrhosis were included (male 68%). Median age was 53 year (range 28–75). Mostly alcohol induced cirrhosis. ATN at autopsy among 142 patients was found in 70 patients (49.3%; 95% CI: 40.8–57.8). Among 142 hospitalized patients antemortem conditions were follow: 53 meet criteria of type 1 HRS (37.3%; 95%CI: 29.4–45.3) and 11 meet criteria of type 2 HRS (7.8%; 95%CI: 3.9–13.4). In group with ATN 46 patients meet criteria HRS (65.7%, 95% CI: 53.4–76.7). In fact, it is interpretation of serum creatinine increase in the absence of morphological examination of kidneys. Frequency of variceal bleeding was higher in patients without ATN compared to patients with ATN (41.4% vs 58.3%, $p = 0.044$). Median length of stay of the ATN group was higher than in the group without ATN: 7 (IQR 2–12) vs. 4 (1–10) days, respectively ($p = 0.044$). Infectious complications associated with ATN among hospitalized patients – OR = 5.3 (95%CI: 2.5–10.9; $p < 0.001$).

Conclusions

ATN as a form of acute kidney injury is common in critically ill cirrhotic patients. In or study ATN was found in 65.7% (95% CI: 53.4–76.7) patients with cirrhosis who meet the criteria of HRS.

CLINICAL AND MORPHOLOGICAL FEATURES OF BILE REFLUX IN CHILDREN

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Introduction

Gastrointestinal pathology takes a leading position among children's diseases. Inflammatory changes of upper digestive tract, accompanied by violation of the motor-evacuation function can be observed in vast majority of cases. It's typical for children with duodenal and duodeno-gastro-oesophageal reflux.

Study Aims

The aim of the research is to study correlation of clinical manifestations and changes in the gastric mucosa of children with bile reflux in order to identify specific features.

Methods

33 children (19 girls and 14 boys) with complaints from the gastrointestinal tract – nausea, vomiting, burning sensation were examined in Vitebsk Children's Clinical Center at the period of Jan. 2015 to Oct. 2015. Children were divided by age: up to 5 years old – 1 (3%) girl and 1 (3%) boy; 8–15 years old – 9 (27%) girls and 5 (15%) boys; 16–17 years old – 8 (24 %) girls and 7 (21%) boys. The control group was composed of 20 healthy patients.Methods of investigations included fibrogastroduodenoscopy, acidity analysis, assessment of gastric juice, biopsy of the body of the stomach and antrum, evaluation of the data of ultrasound diagnosis, determination of H.pylori.

Results

According to clinical manifestations we have identified groups of symptoms – dyspeptic: abdominal pain, epigastric discomfort, nausea, vomiting, burning sensation – 13 (39%) girls, 4 (12%) boys, asymptomatic – 3 (9%) girls, 4 (12%) boys; nonesophageal manifestations – bad breath, coated tongue and palate – 2 (6%) girls, 7 (21%) boys. Ultrasound – 2 (6%) – cholelitiasis, biliary dyskinesia, 30 (90%) – the norm. Morphological picture – foveolar hyperplasia 26 (78%), inflammation 21 (63%), branching rollers 9 (27%), lymphoid follicles 19 (57%), fibrous proliferation 20 (60%) patients. Different degree of inflammation is observed in case of presence of *H. pylori* – if it's positive – activity 13 (39%), severity 14 (54%), if it's negative – activity 5 (15%), severity 9 (27%).

Conclusions

Bile reflux leads to changes in the gastric mucosa as inflammation, fibroproliferation, foveolar hyperplasia, branching rollers in 26 (78%) children and also is accompanied by expressed picture of dyspepsia. The presence of *H. pylori* initiates the increase of severity and activity of 7 children out of 15 (46%).

GASTROENTEROLOGICAL AND OTHER REASONS OF HOSPITALIZATION FOR HIV-POSITIVE PATIENTS

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Introduction

Gastrointestinal and hepatobiliary disorders are among the most frequent complaints in patients with HIV disease. Advances in antiretroviral therapy are changing the nature of HIV disease and affecting many of the gastrointestinal manifestations. Before combination antiretroviral therapy, the best estimates suggested that 50 to 93% of all patients with HIV disease had marked GI symptoms during the course of their illness. Recent clinical experience suggests that effective anti-HIV therapy and chemoprophylaxis for *Pneumocystis carinii*, *Mycobacterium avium*, and cytomegalovirus may delay/prevent the occurrence of gastrointestinal opportunistic infections. Given fewer late- stage immunocompromised patients, clinicians must recognize the shifts in the spectrum of pathogens, recognize the need to maintain good nutrition, and facilitate outpatient management directed at identifying treatable causes and ameliorating symptoms. Gastrointestinal manifestations of HIV disease include diarrhea, dysphagia and odynophagia, nausea, vomiting, weight loss, abdominal pain, anorectal disease, jaundice and hepatomegaly, GI bleeding, interactions of HIV and hepatotropic viruses, and GI tumors (Kaposi's sarcoma and non-Hodgkin's lymphoma). The evaluation of specific gastrointestinal complaints must be based on an assessment of the degree of immunosuppression. Progressive immunocompromise is associated with increasing prevalence of gastrointestinal symptoms and remains the common endpoint for most individuals infected with HIV.

Study Aims

To obtain information and analyze the current situation in Riga East clinical university hospital's stationary "Infectology Center of Latvia" during the period from 1 January 2014 to 31 December 2014.

Methods

Mathematical statistical methods were used in the study. The study data were inserted in MS Exel and then converted in software SPSS version 20.0 made by PASW (USA) for further data processing. Data were expressed as mean values ± Standard deviation (SD), to verify chorerency and reliability of data were used Chi-square (χ^2) and Mann–Whitney U test. The statistical hypothesis accuracy level $p < 0.05$ was seen as basis for the corresponding null hypothesis rejection and alternative hypothesis adoption.

Results

Out of 167 studied medical records, it is known that 88 (52.7%) were women, 79 (47.3 %) men. Women average age 36.93 (SD ± 10.42) and 41.51(SD ± 9.41) years for men age. Assessing the transmission of infection following data was obtained from 167 hospitalized patients IVNL 62 (37.1%), unknown 73 (43.7%), in homosexual way 8 (4.8 %), in heterosexual way 24 (14.4%). The average CD4 cell rate was 295.16 (SD ± 284.25). The most common reasons for hospitalization were opportunistic infections 67 (40.1%) mainly gastrointestinal fungal infection (83%), liver and gastrointestinal pathology 20 (12%), acute antiretroviral syndrome 19 (11.4%), pulmonological diseases 18 (10.8%), neurological diseases 13 (7.8%), dermatological diseases 9 (5.4%), surgical manipulation 7 (4.2%), haematological malignancies 6 (3.6 %), nephrology diseases 5 (3%), tumor 3 (1.8%). Of all hospitalized HIV patients HCV co- infection were found in 70 cases (42.17%).

Conclusions

The author advert attention to need for stricter control and promote opportunistic infection prevention measures in patients immunization against VHB and *S. pneumoniae*, which would protect against non-AIDS diseases, treat hepatitis C virus infections and to preform a regular basis annual preventive interventions at the family physicians. The author recommends that promote social risk populations any rehabilitation, to facilitate their integration into the community and reduce stigmatisation in society and among patients, as well as to promote the equality of treatment of these patients received. The author recommends early to start antiretroviral therapy when the CD4 < 350 cells/mm3, there by reducing hospitalization due to opportunistic infections.

THE INFLUENCE OF CHRONIC KIDNEY DISEASE ON GUT MICROBIOTA

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Introduction

Today chronic kidney disease (CKD) can be found in 10% of the Russian population, accounting for 14 million patients. CKD dramatically reduces the quality of hard-working patient's life, resulting in the need to use expensive methods of substitution therapy (dialysis and kidney transplantation), and is a factor of the high mortality of patients. Peritoneal dialysis (PD) is the method of adequate replacement of renal function, which is obtained by more than 11% of the dialysis population in the world. According to the data of the Russian register of renal replacement therapy from 31.12.2011 we know, that more than 28 thousand of patients received renal replacement therapy (RRT) with terminal chronic renal failure (ESRD). In 2013year was 663 first starting treatment patients. There is an increase of the patient's number receiving PD to 9.8% compared to 2011year.PD is used in the treatment of ESRD due to a longer preservation of residual renal function, as well as low cost compared to hemodialysis (HD). Thus patients receiving PD are stable hemodynamically and with a low risk of infection by viral hepatitis. These patients haven't large differences of blood pressure.

Study Aims

The aim of the study was to assess the gastroenterogic symptoms such as abdominal pain, flatulence, the feeling of stomach's fullness, belching, the frequency and the shape of the stool.

Methods

Questionnaires and objective examination.

Results

Abdominal pain was not related to the peritoneal catheter and observed in 33% cases, flatulence – in 66% cases, the feeling of stomach's heaviness – in 33% cases, belching – in 40% cases. 40% of patients had the frequency of the stool more than 2 times a day. 60 % of patients had the third type of stool's shape according to Bristol scale and 33% of patients had the forth type of stool's shape.

Conclusions

Thus we could suspect the disturbance of gut microbiota in these patients clinically, the mechanism of the interaction between the intestine and kidneys remains debated. It is necessary to spend more clinical research for estimation and development of the common therapeutic strategy of the correction of the disturbance of gut microbiota in patients with ESRD.

ALGINATES AS MONOTHERAPY IN TREATMENT OF PATIENTS WITH NON-EROSIVE GASTROESOPHAGEAL REFLUX DISEASE

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Introduction

According to the data of epidemiological studies in the countries of West Europe, USA and Russia the heartburns frequency reaches 40–60% among the adults. The majority of these patients with the patients with nonerosive gastro esophageal reflux disease (GERD).

Study Aims

To evaluate the efficiency of alginates in nonerosive GERD treatment.

Methods

40 patients with nonerosive GERD were observed. These patients got alginates ("Geviskon-forte") in standard dosage 10 ml after meal 3 times a day and 10 ml before the sleep during 14 days. All patients answered to the daily questionnaire for complaints and daily pH monitoring before and after treatment was performed.

Results

Usage of "Geviskon-forte" improved data of daily pH monitoring and significantly reduces the period percent with intragastral pH less 2 during night time (from 70% to 25%) at majority of patients with GERD. Also total reflux number decreased from 161 to 52.2. The episode heartburns frequency reduction was already registered at the second day of treatment; at the therapy completion this symptom was disappeared completely. The "biliary" reflux manifestations also regressed to the therapy completion. A complete pain in the epigastrial area regression was registered at group of patient from 70 to 10% after treatment. For a treatment period the side effects and allergic reactions were not registered therefore medicine quite safety to consume.

Conclusions

"Geviskon-Forte" has high efficiency in GERD symptoms reduction, is safe, well tolerated by patients and can be recommended as monotherapy for patients with nonerosive GERD.

DIFFERENT PROBIOTIC STRAINS AS ANTI-HELICOBACTER MEDICATIONS: EFFICACY IN VITRO AND IN VIVO MODELS

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Introduction

Eradication rates with standard triple therapy for *Helicobacter pylori* infection have declined to unacceptable levels. In such cases, one of the drugs of choice may be probiotics which have positive influence on *H. pylori* by bacteriocines.

Study Aims

To assess the anti-*helicobacter pylori* properties of different probiotics *in vitro* and *in vivo* models.

Methods

In vitro 14 strains of *Helicobacter pylori* were used. We used 3 variants of probiotic: 1st contained *Enterococcus faecium* strain L-3, 2nd –*Bacillus subtilis*, 3rd – combination of *Bifidobacterium longum* and *Enterococcus faecium*.

55 patients with *H. pylori*-associated chronic gastritis were randomized into 3 groups. Patients of 1st group received probiotic containing *Bacillus subtilis*; 2nd group received probiotic containing *Enterococcus faecium*. Patients of the 3rd group received standard eradication therapy: omeprazole 20 mg twice a day 21 days, amoxicillin and clarithromycin in standard dose 7 days. Complains estimate, gastroscopy with biopsies from the stomach antrum for *H. pylori* detection (rapid urease test, histological method, polymerase chain reaction) were made for all patients before and in 1.5-2 months after treatment. Efficacy of *H. pylori* eradication was estimated by intention to treat criteria.

Results

Inhibition of *H. pylori* growth in vitro was in 50% of cases with *Bacillus subtilis*, in 78.6% of cases with *Enterococcus faecium* strain L-3 and 64% of cases with the combination of *Bifidobacterium longum* and *Enterococcus faecium*. Eradication rates of *H. pylori* (*in vivo*) were 39%, 41% and 60% in patients of the 1st, 2nd and 3rd groups respectively.

Conclusions

In our opinion, *in vitro* results can be associated with the direct inhibition of *H. pylori* by probiotics. But further trials are needed to confirm this hypothesis. The highest levels of *H. pylori* inhibition were noted both *in vitro* and *in vivo* models with *Enterococcus faecium* strain L-3. This strain has a promising result in eradication of *H. pylori* and is worth to be used in other studies. The eradication regimen with this strain may especially be helpful in patients with a history of gastrointestinal adverse effects related with antibiotics.

NON-INVASIVE BREATH AMMONIUM TEST IN DIAGNOSIS OF HELICOBACTER PYLORI INFECTION

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Introduction

A breath test with C13 urea is recommended as a one of the main methods for diagnosis of *Helicobacter pylori* infection. However, this method is not widely available for gastroenterological practice in general, in Belarus and Russia in particular. Therefore, it is actual and important to elaborate alternative cost-effective non-invasive methods for diagnosis of Hp infection. It is especially actual for patients, who cannot be tested by invasive methods for this reason.

Study Aims

To investigate the sensitivity and specificity of non-invasive breath ammonium "HELIC-test" ("Association of medicine and analytics, Saint-Petersburg, Russia) in diagnosis of *Helicobacter pylori* infection.

Methods

Two independent studies in Russia and Belarus were performed. In Russia 171 patients with dyspepsia and in Belarus 69 patients with chronic gastritis were surveyed. Helicobacter pylori infection was confirmed by a histological examination of samples obtained from the antrum and corpus of stomach during endoscopy. For all patients non-invasive breath ammonium HELIC-test also was performed. Patients during at least four weeks before diagnosis did not take any medications (PPIs, antibiotics, antacids and bismuth), which could change the results of both invasive and non-invasive tests.

Results

Concordance of results of histological method and ammonium HELIC-test were high: in 87.5% and 97.1% of cases in Russia and in Belarus respectively. In Russia sensitivity of ammonium test was 92%, specificity – 93%. In Belarus sensitivity and specificity of this test were 97.22%, and 96.96% respectively.

Conclusions

Breath ammonium HELIC-test is cost-effective, non-invasive method for *Helicobacter pylori* infection diagnostics. The sensitivity and specificity of this test are high enough. Therefore, this method can be widely recommended as non-invasive test for *Helicobacter pylori* infection diagnostics.

ERADICATION OF HELICOBACTER PYLORI INFECTION. SIDE EFFECTS OF STANDARD TRIPLE THERAPY

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Introduction

Eradication of *Helicobacter pylori* prevents peptic ulcer recurrence and may also decrease the prevalence of gastric cancer in high risk populations. The antimicrobial resistance has resulted in a decline of the success rate of recommended eradication regimens. Clarithromycin resistance in *Helicobacter pylori* infection is one of the main causes of failure of eradication therapies and its prevalence varies geographically. Side effects arising from the use of antibiotics reduce patient compliance.

Study Aims

To investigate the efficacy and drug-related side effects of a regimen that included proton pump inhibitors (PPIs), clarithromycin and amoxicillin in patients with *Helicobacter pylori* (Hp)-positive duodenal ulcer.

Methods

This study included 50 Hp-positive patients with duodenal ulcer. Hp infection was confirmed by a histological examination of samples obtained from the antrum and corpus of stomach during endoscopy and non-invasive Breath HELIK-Test. The eradication therapy consisted of 10-days twice daily oral administration of PPIs in standard dose, amoxicillin 1000 mg, clarithromycin 500 mg, then 20-days twice daily PPIs. Therapeutic success was confirmed by a negative histological examination and Breath HELIK-Test, performed 4–12 weeks after treatment.

Results

Before the treatment 82% of patients had pain syndrome and 70% – dyspeptic complaints. During the treatment in 50% of patients increased the frequency of dyspeptic complaints and in 42% of them such complaints appeared for the first time and continued during 1.5 months after treatment. The eradication rate was 70%. Healing of duodenal ulcer was noted in 82% cases. The level of basal pH was significantly ($p < 0.001$) increased in the corpus of stomach, in antrum and in the duodenum. After treatment significantly increased the levels of alanine transaminase, asparagines transaminase, alkaline phosphatase and triglycerides, which must be noted as drug-related side effects of clarithromycin-based triple therapy.

Conclusions

Standard triple Hp eradication therapy based on clarithromycin has low efficacy (70%), causes or increases the frequency of dyspeptic complaints associated with the use of antibiotics, has a hepatotoxic effect. Side effects arising from the use of antibiotics may reduce patient compliance. This causes the search for alternative eradication of *Helicobacter pylori*.

ABILITIES OF NONPHARMACOLOGIC FACTORS IN THE TREATMENT OF PATIENTS WITH HELICOBACTER PYLORI-ASSOCIATED DUODENAL ULCER

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Introduction

Current interest in probiotics as therapeutic agents against *Helicobacter pylori* is stimulated by the increasing resistance of *Helicobacter pylori* to antibiotics. The addition of probiotics to standard antibiotic treatment improved *Helicobacter pylori* eradication rates. It is also found out that mineral water have an inhibitory effect on *Helicobacter pylori* in vitro.

Study Aims

To investigate the effect of probiotics and mineral water in the treatment of patients with *Helicobacter pylori* (Hp)-positive duodenal ulcer.

Methods

200 Hp-positive patients with duodenal ulcer were randomized into 4 groups. Hp infection was confirmed by a histological examination and non-invasive Breath HELIK-Test. Intragastric and intraduodenal pH-metry, blood analyses also were performed. Following eradication regimens were recommended: Group I: 10-days twice daily proton pump inhibitors (PPIs) in standard dose, amoxicillin 1000 mg, clarithromycin 500 mg, then 20-days twice daily PPIs plus once daily oral administration of probiotics; Group II: PPIs and probiotics once daily and alkaline hydrocarbonate-chloride sodium mineral water; Group III: PPIs and probiotics once daily and chloride sodium mineral water; Group IV: probiotics and PPIs. Treatment in all groups lasted during one month. Therapeutic success was confirmed by a negative histological examination and Breath HELIK-Test, performed in 4-12 weeks after therapy.

Results

In Group I dyspeptic complaints disappeared in 74%, and decreased in 20%. Disappearance of dyspeptic complaints was 78%, 76% and 74% in II, III and IV groups respectively. Decrease of dyspeptic complaints was 20%, 22% and 24% in II, III and IV groups respectively. The eradication rates were 82%, 80%, 78% and 68% in I, II, III and IV groups, respectively. Healing of duodenal ulcer was noted in 84%, 86%, 84% and 78% of cases, in I, II, III and IV groups, respectively. Intragastric and intraduodenal pH was significantly increased in all groups, especially in II. After treatment in II, III and IV groups significantly decreased alanine transaminase, asparagines transaminase, blood bilirubin, alkaline phosphatase, cholesterol and triglycerides.

Conclusions

Adding probiotics to standard triple therapy improves efficacy of eradication. The combined use of PPIs, probiotics and alkaline hydrocarbonate-chloride sodium mineral water is a highly-effective alternative therapy in patients with Hp-associated duodenal ulcer.

THE ORNITHINE DECARBOXYLASE ACTIVITY, PHOSPHO-C-JUN CONTENT AND THIOL-DISULFIDE STATUS OF GASTRIC MUCOSA CELLS UNDER EXPERIMENTAL NaCl HIGHER INTAKE

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Introduction

The disorders in the regulatory mechanisms of cell proliferation and differentiation often occur under chronic pathological processes like chronic inflammation, malnutrition, disrupting of innervation, physical and chemical effects. The large salt (NaCl) amount consumption is one of the pathological factors that may increase the risk of gastric carcinogenesis. There are a lot of mechanisms involved in complex and multi-stage process of cell malignant transformation. These mechanisms include the changes of proto-oncogene phosphorylation, thiol-disulfide status and dysregulation of the enzymes involved in a proliferation.

Study Aims

The aim of the study was to determine the phospho c-Jun content, the activity of ornithine decarboxylase (ODC) and thiol-disulfide status (content of reduced and oxidized glutathione, glutathione dependent peroxidase (GP), transferase (GT) and reductase (GR) activities) in the rat gastric mucosa cells under the NaCl higher intake condition.

Methods

Sodium chloride higher intake was performed on white male rats by 10-week replacement of standard vivarium diet by diet containing 5% NaCl (5% w/w of feed). The gastric mucosa cells were extracted at the end of the 4^{th}, 6^{th}, 8^{th} and 10^{th} week. After this period expiry the animals were fed with standard vivarium diet till the end of the 12^{th} week. The standard histological, spectrophotometric, spectrofluorimetric and ELISA methods were used to determine the rate of the mentioned parameters.

Results

The gastric mucosa cells were characterized by in average 2.4-fold decreasing in the reduced glutathione content and in average 2.1-fold decrease of the glutathione reductase activity under all periods of the investigation. The activities of GP, GT and phosphorylated c-Jun content were increased during the histological signs of inflammation observing at the 8^{th} and 10^{th} weeks of the experiment. There were not identified any changes of the ODC activity at the period of NaCl higher consumption, with the exception of the enriched salt diet cancellation when the parameter was increased.

Conclusions

The absence of histological signs of pathological proliferation with the reduction of glutathione content and GR activity were noted under the NaCl higher intake. Besides, such experimental conditions were accompanied by increasing the activity of GP, GT and content of phospho-c-Jun during the the signs of inflammation.

SERUM CITRULLINE IS A HELPFUL MARKER TO SELECT THE RIGHT NUTRITIONAL SUPPORT IN PATIENTS WITH ULCERATIVE COLITIS

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Introduction

Citrulline is an amino acid produced by enterocytes of a small bowel, serum citrulline concentration has been proposed as a helpful marker of enterocyte function and to choosing right nutritional support.

Study Aims

The aim of our study was to choose correct nutritional support for patients with severe attack of ulcerative colitis (UC) with use special marker – serum citrulline.

Methods

38 patients with UC were included into the examination, among them 22 men and 16 women with age average 38 – 5.2 y.o. All patients were with severe attacks of UC. Calculations of daily needs in energy, protein and amino acids were carried out according to the recommendations of ESPEN Guidelines on Parenteral Nutrition, 2009. All patients underwent the monitor of trofological status according to BMI parameters, the skin fold thickness was measured by skin caliper and was conducted arm circumference measurement and analysis of citrulline serum. The normal levels of serum citrulline was taken 19–55 μmol/l. Among 38 patients with severe attack of UC, in 32 (84.2 %) the level of citrulline was normal, in this case patients received standard nutritional support. Several patients (n = 6) has low level of citrulline in the plasma (15.8 ± 2.9 μmol/L). In these cases, patients received nutritional support, which included parenteral nutrition and oligopeptides nutrition.

Results

As a result of nutritional therapy and primary treatment, clinical improvement occurred in 36 patients, which is 94 % among all patients.

Conclusions

This study allows us to make the conclusion that for effective tactics of nutritional support in severe attack of ulcerative colitis can define the concentration of serum citrulline. This marker can be us for prescribing parenteral nutrition and oligopeptide nutrition. Right nutritional support in combination with basic therapy can make treatment more effective in patients with severe ulcerative colitis.

ASSESSMENT OF MATRIX METALLOPROTEINASES AND THEIR TISSUE INHIBITORS FOR NON-INVASIVE DIAGNOSIS OF LIVER FIBROSIS IN PATIENTS WITH NONALCOHOLIC FATTY LIVER DISEASE

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Introduction

In recent decades, non-alchoholic fatty liver disease (NAFLD) took the first place among the causes of liver transplants in the world. It seems very interesting to find a non-invasive markers for the diagnosis of liver fibrosis in patients with NAFLD. Matrix metalloproteinases (MMPs) and tissue inhibitors of metalloproteinases (TIMPs) play an important role in liver fibrogenesis. MMP-9, in contrast to other MMPs, was produced by Kupffer cells, hepatocytes and stellate cells at different liver damage.

Study Aims

To evaluate the diagnostic value of MMP-9, TIMP-1 and 2 as non-invasive markers of liver fibrosis in the NAFLD to improve the management of patients with this pathology.

Methods

We examined 99 patients with NAFLD and different stages of fibrosis, 83 men, 16 women, median age 45 (range 40–55) years. We assessed anthropometric indicators, biochemical analysis of blood, abdominal ultrasonic studies, the levels of MMP-9, TIMP-1 and 2. Depending on the stage of fibrosis (0-4), established as a result of liver elastometry (Fibroscan), patients were divided into 5 groups: n = 27, n = 22, n = 23, n = 14, n = 13, respectively.

Results

Between the groups in medical history, physical examination, calculation of BMI and the ratio of waist to hip volume (W/H) no significant differences were found. 64.6% of patients had abdominal obesity (BMI – 31.5 (29.1–33.9), W/H – 1.02 (1.01–1.05). Obesity and abdominal obesity (BMI, W/H) had a significant positive relationship of moderate streight (rs = (0.257), $p < 0.04$, rs = (0.301), $p < 0.02$, respectively), with the stage of liver fibrosis. The groups were significant differences in the level of glucose, total bilirubin ($p < 0.04$, $p < 0.03$, respectively). At the time of the examination, 57.5% of patients had steatosis, other patients had steatohepatitis. No significant differences in the level of liver function tests (ALT, AST) in the study groups were found.

Conclusions

TIMP-2 may be considered as a potential non-invasive marker for the diagnosis of liver fibrosis in patients with NAFLD.

STRUCTURAL CHANGES IN THE LIVER IN CHILDREN WITH BILIARY DYSKINESIA

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Introduction

Etiology and pathogenesis of functional disorders of the gallbladder are not completely understood as well as diagnostic criteria. Several factors are involved in the development of biliary dyskinesia: defect of smooth muscle layer and reducing of receptor number in the bladder wall, causing to decrease in motor activity. Moreover, functional disorders of the gallbladder might be associated with impaired intestinal motility and sphincter of Oddi dysfunction. Elastography is one of the modern noninvasive ultrasound-based methods to assess liver fibrosis by measuring liver stiffness. Recently a novel tool based on the evaluation of ultrasound attenuation using transient elastography has been developed. Numerous studies were devoted to the use of elastography for the study of patients with fatty liver, viral and toxic hepatitis. Structural features of the liver in children with functional gallbladder have not been yet investigated.

Study Aims

Aim of our study was to establish structural changes of the liver in children with biliary dyskinesia.

Methods

Liver steatosis and liver stiffness measurements using transient elastography (FibroScan) were performed in 30 children (age 6-18 yr) who visited "Institute of Gastroenterology of National Academy of Medical Sciences of Ukraine". According to gallbladder function patients were divided into two groups: 14 with hypokinesia and 16 with normal function. Liver steatosis measured by controlled attenuation parameter (CAP), and hepatic fibrosis evaluated by the liver stiffness measurement (LSM), were compared among these groups.

Results

LSM mean in all groups was 4.3 ± 1.3 kPa, corresponding to hepatic fibrosis stage F0-F1 on a Metavir scale. LSM values (mean ± SD) were significantly higher in the group with gallbladder hypokinesia (4.7 ± 1.6 kPa), than in the control group (3.8 ± 0.5 kPa) ($p < 0.05$). CAP values (mean ± SD) were significantly higher in the group with gallbladder hypokinesia (228.9 ± 43.5 dB/m), than in the control group (185.9 ± 58.4 dB/m) ($p < 0.05$). Stage of steatosis S0 (hepatic fatty content less than 10% of hepatocytes) were more common in patients with normal function of the gallbladder.

Conclusions

Patients with gallbladder hypokinesia are characterized with both liver stiffness and fatty content increase, compared to patients with normal function of gallbladder. Identification of factors for such changes requires further research.

PHYTOBIOPREPARATION FOR PROPHYLAXIS AND CORRECTION OF INTESTINAL BACTERIOCENOSIS DISORDERS

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Introduction

Permanent tasks when designing all kinds of probiotics officinal drugs in the competition conditions are the increase of their efficacy and the decrease of tangible costs at all the stages of their production.

Study Aims

Creation of a phytobiopreparation containing strains of the Lactobacillus genus representatives cultivated on the basis of medicinal herb extract.

Methods

A quantitative determination of compatibility of Lactobacillus bulgaricus, Lactobacillus lactis, Lactobacillus casei, Streptococcus thermophilus, Lactococcus lactis strains with calamus root extract has been carried out. The classical nutrient medium was used as a reference. A phytobiopreparation representing a microbe association containing strains of the lactate bacteria cultivated on the nutrient medium with Calami rhizomata extract added has been developed and its efficacy has been assessed using laboratory animals.

Results

Concerning compatibility with calamus extract, the best results have been obtained for Lactobacillus bulgaricus, Lactobacillus lactis и Streptococcus thermophilus. Multiplication is 96.2, 12.6 and 71.0% respectively in comparison with the reference. The results of in vivo testing of the phytobiopreparation show that in the pronounced dysbacteriosis laboratory animals fed with the microbe association in the form of a suspension the quantity of obligate microorganisms of the Bifidobacterium and Lactobacillus genera in the large intestine is considerably increased and that of Proteus and Clostridium is decreased.

Conclusions

The addition of calamus extract in the nutrient medium reduces its price, notably stimulates multiplication of the lactate bacteria strains, exerting a prebiotic effect, and facilitates the maintenance of their quantity at the optimal level. The developed microbe association containing strains of the lactate bacteria and calamus root extract is a promising remedy for intestinal bacteriocenosis disorders. Application of microbe preparations cultivated on the basis of extracts of local medicinal herbs will enable along with the normalization of intestinal bacteriocenosis to purposefully influence the functional state of the organism's organs and systems.

GASTROINTESTINAL BLEEDING IN FATAL CASES WITH DIFFERENT COMORBIDITY

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Introduction

Medical Statistics of Latvia specifies that number of deaths caused by diseases of digestive system is 49 per 10,000. Researches about the influence of drugs, comorbid diseases and age on gastrointestinal bleeding (GIB) are done by T. Warketin et al., 2003; M. Chait, 2007; A. Derovs, J. Pokrotnieks, 2013; A. Šlokenberga, D. Zepa, 2013.

Study Aims

To analyze GIB in isolated gastrointestinal diseases and in cases with comorbid illnesses.

Methods

We have examined 120 cases of death with GIB (years 2013–2014). Pathology protocols, clinical information and analyses from Doctor's Bureau of RECUH were analyzed. The main diagnosis, complications and concomitant diseases as well as site of death, age and gender were evaluated. Risk factors for GIB were counted by Rockall numerical scoring system.

Results

All patients were divided into 2 groups: cases with fatal bleeding and patients with the GIB which worsened clinical state. The main causes of fatal profuse bleeding was from: peptic ulcers of stomach and duodenum 23.3%; esophageal varices 16.7% (liver cirrhosis); intestines 11.7% (gut malignancies and diverticulitis). In comorbid illnesses secondary bleeding as a complication was found in patients with: cardiovascular pathology 43.4%; non-cirrhotic liver diseases (alcohol abuse) 10%; pulmonary pathology 8.3% and malignancies of non gastroenterological origin 5%. Important finding was erosive gastritis with bleeding (n = 54). It was detected in such concomitant diseases as general atherosclerosis (aorta including) – 57%, cardiac pathologies with its failure (CHD, hypertension) – 7%, chronic pulmonary diseases – 14%. In case of gastric bleeding amount of blood in stomach varied from 0.3 l till 1.5 l. In 31.8% it was critical for patient's life. In 69% patients had different types of severe anemia. Drug history of aspirin and warfarinum was mentioned in part of reports. In our analyzed group 46, 7% of patients with GIB died at home without any medical care but 53.3% – at clinics. In hospitals correct diagnosis was missed in 19 cases.

Conclusions

Risk factors for gastric bleeding in case of erosive gastritis in our analyzed group were cardiovascular pathologies, alcohol abuse, chronic pulmonary diseases and malignancies of non gastrointestinal origin. Mortality from GIB was detected in hospital and home cases almost equally.

CORRELATION OF SERUM AMYLOID A LEVEL AND DISEASE ACTIVITY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASES

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Introduction

Inflammatory bowel diseases (IBD) are a pressing problem in gastroenterology. Important diagnostic questions nowadays are related to new non-invasive clinical biomarkers for disease activity evaluation.

Study Aims

The aim of this study was to evaluate correlation of serum amyloid A (SAA) level with activity of disease in patients with ulcerative colitis (UC) and Crohn's disease (CD).

Methods

In prospective single-center pilot study (from April to August 2015) 12 patients with UC and 9 patients with CD were included. Acitvity of CD was assesed by CD activity index (CDAI), defined as 151 or more as active phase, simple endoscopic score for CD (SES-CD), defined as inactive 0-3, active > 3, partial Mayo score defined as inactive 0-4, active > 4, Mayo endoscopic subscore, defined as 0-1 inactive, > 1 active. Patients were divided into four groups. Serum samples were obtained and measured on the day or within < 14 days of ileocolonoscopy procedures, patients without endoscopic examination were evaluated using CDAI and partial Mayo score. The correlation of SAA with CDAI, SES-CD, partial Mayo score, Mayo endoscopic subscore and full Mayo score were evaluated using Spearman correlation analysis.

Results

21 patients with UC and CD (mean age 37.7 years; 9 males, 12 females) were enrolled. Mean SAA level was increased in the active phase of UC patients (n = 9 157.8 ug/dl) compared to inactive phase (n = 4 19.75 ug/dl) and was statistically significant with full Mayo score (Spearman's rank correlation coefficient r = 0.8 p = < 0.05). In active CD patients SAA was elevated (n = 5 230.4 ug/dl) compared to inactive CD patients (n = 2 4.75 ug/dl) and highly corralates with CDAI (Spearman's rank correlation coefficient r = 1, p < 0.01). During inactive phase of disease no significant correlations were found. No reliable correlation was found between mean serum amyloid A and SES-CD.

Conclusions

Our results showed that serum amyloid A is a sensitive biomarker for evaluation of disease activity in both UC and CD. SAA was significantly elevated in active ulcerative colitis and Crohn's disease phases and there is a direct correlation with full Mayo score and CDAI. Our results confirmed the high diagnostic value of this study which will be continued in the future.

EFFECTS OF ALKALINE WATER ON DIGESTIVE ENZYMATIC SYSTEMS

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Introduction

As follow up research, done under COST FA1005 framework, the investigation into high pH water (pH 9.4 ± 0.1) effect on digestive system enzymes was carried out. The testing was done on all three major enzymatic systems: Amylase for carbohydrate, Pepsin for protein and Lipase for lipid digestion.

Study Aims

The aim of this study is to assess the effects of Alkaline water (pH of 9) and Alkaline water with addition of 28.13mg/l H2SiO3 on the digestive enzymatic process.

Methods

The testing of amylase, lipase and pepsin function was done by evaluation of enzymatic end products or the remaining substrate after enzymatic reaction. The activity of amylase was determined by detection of remaining starch by using Iodine as indicator, Pepsin testing was conduced under module of the stomach by Biuret Reaction and Lipase function was ascertain by changes of pH in the medium under its influence. In all experimental assays were incubated for 40 minute at 38 degree celsius and the water pH was tested for stability and control over its influence.

Results

The effect of the alkaline water showed activation of Amylase at low amount 50µl and lower activation at higher concentration of 100µl and 200µl. The effect on pepsin was the highest at 100µl in form of activation, with lower activation potential was showed at 50µl and 100µl. The strongest effect of high pH water was shown on lipase with strong activation in all tested concentration and potential for activation absent bile.

Conclusions

The activation of the enzymatic systems required for digestion of dietary products may prove extremely beneficial for patients with malnutrition. The increase of amylase activity will also increase digestion of carbohydrate, when the same is true for pepsin and lipase for digestion of proteins and lipids respectively. Furthermore, the strong capacity to activate Lipase absent bile may show beneficial for patients after cholecystectomy.

THE DYNAMICS OF THE LABORATORY PARAMETERS ON THE PATHOGENETIC THERAPY WITH NITIZINONE IN CHILDREN WITH TYROSINEMIA TYPE 1

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Introduction

Tyrosinemia is a rare hereditary disease characterized by a metabolic disorder of tyrosine. It eventually resulting in forming highly toxic and carcinogenic final metabolites. They have toxic effects on the cells that can be a cause of clinical picture of liver failure with severe coagulopathy and cirrhosis.

Study Aims

To evaluate the efficiency of treatment with nitizinon in children with tyrosinemia type 1 by a retrospective analysis of laboratory parameters in dynamics.

Methods

The study included 13 children (6 males and 7 females) with tyrosinemia type 1: 5 patients (38.5%) with type 1a and 8 patients (61.5%) with type 1b. All children were administered a pathogenetic therapy with nitizinone. We assessed biochemical blood markers and complete blood count in six months of treatment.

Results

Complete blood count showed significantly increased absolute number of platelets – (from 119.9 ± 53.7 × 10^9/L to 194.0 ± 62.2 × 10^9/L, p = 0.013); biochemical tests showed significantly decreased total bilirubin (from 29.5 ± 21.9 mmol/L to 12.45 ± 5.4 mmol/L, p = 0.003), direct bilirubin (from 11.0 ± 14.2 mmol/L to 3.6 ± 3.3, p = 0.019), and alkaline phosphatase (from 778.8 ± 408.6 U/L to 427.8 ± 277.3 U/L, p = 0.016). Alpha-fetoprotein (AFP) was decreased from 15974.8 ± 24561.8 IU/ml to 1883.8 ± 4211.1 IU/ml (p = 0.015). Coagulation parameters were improved (prothrombin index increased from 54.6 ± 29.1% to 88.5 ± 13.8%, p = 0.013; INR decreased from 2.3 ± 1.7 to 1.0 ± 0.3, fibrinogen increased from 2.0 ± 1.2 g/L to 3.1 ± 0.4 g/L).

Conclusions

Specific pathogenetic therapy of tyrosinemia during the first 6 months effectively improves bilirubin and phosphoric acid metabolism and laboratory parameters of the hemostatic system, also significantly decreasing AFP.

LIVER DYSFUNCTION AND ITS DYNAMICS ON THE NITISINONE THERAPY IN CHILDREN WITH TYROSINEMIA TYPE 1

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Introduction

Tyrosinemia is a rare genetic disorder characterized by a mutation in the gene encoding for the fumarylacetoacetase (FAH) enzyme. It often presents with liver failure, cirrhosis with hepatocellular carcinoma, end-stage renal failure, acute neuropathic pains and hypertrophic cardiomyopathy.

Study Aims

To determine the dynamics of liver dysfunction in children with tyrosinemia on the pathogenetic nitizinone therapy.

Methods

The study included 13 children (6 males and 7 females) with tyrosinemia type 1: 5 patients (38.5%) with type 1a and 8 patients (61.5%) with type 1b. All children were administered the pathogenetic therapy with nitisinone. Before and 6 months after the beginning of treatment, we monitored the liver dysfunction by the developed and patented point system, based on the 14 biochemical parameters that represent the liver role in the protein, fat and carbohydrate metabolism.

Results

Before treatment the liver function was reduced by 35.6 ± 0.1% (with variations from 16.0% to 52.0%), and was corresponded to small abnormalities in 7.7% of cases, moderate – in 76.9% cases, hard – in 15.4% of cases. After 6 months of the pathogenetic therapy liver function was reduced by 23.5% (with variations from 4.0% to 46.0%), and corresponded to small abnormalities in 30.8% of cases, moderate – in 69.2% of cases, hard rate of liver dysfunction has not been identified. Before nitizinon therapy a half of children was needed to examine a question about the planned liver transplantation. After 6 months of starting treatment no one child was needed such procedure, at least for the next six months of life.

Conclusions

Specific pathogenetic nitizinon therapy of tyrosinemia type 1 effectively improves the liver function in the first 6 months of the treatment.

SUN EXPOSURE, VITAMIN D INTAKE AND 25(OH)D VITAMIN STATUS IN ELDERLY ADULTS OF LATVIA

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Introduction

For most people, more than 90% of their vitamin D is produced endogenously from skin exposure to solar UVB light (280–320 nm), starting cutaneous production of precursors to 25-hydroxyvitamin D. 25(OH)D is the major circulating vitamin D metabolite and the best indicator of vitamin D exposure and status as determined by the sun and diet.

Study Aims

The prevalence of vitamin D deficiency among seniors is high. Whereas sun exposure, vitamin D intake, demographics, and lifestyle have been identified as being important determinants of vitamin D status, the impact of these factors is expected to differ across populations. To improve current prevention and treatment strategies, this study aimed to explore the main determinants of vitamin D status and its relative importance in a population of community-dwelling Latvian older adults.

Methods

Serum 25-hydroxyvitamin D (25(OH)D) was measured in 390 adults aged ≥ 45 years. Sun exposure was assessed with a structured questionnaire (n = 390), vitamin D intake using a Food Frequency Questionnaire (n = 390). The variation in 25(OH)D concentrations during summer/autumn period, when adjusted for age, sex, BMI, education, alcohol consumption, smoking, physical activity, and self-rated health status.

Results

A total of 390 men with a mean age of 69.7 years (SD 9.7) were included. In this population, 33 % had a serum calcidiol < 75 nmol/L, 49 % were vitamin D deficient (serum calcidiol < 50 nmol/L) and 18 % were severelyvitamin D deficient (serum calcidiol < 25 nmol/L). Smoking and season (winter and spring) were independent risk factors forvitamin D deficiency. Sun exposure (being outside daily during summer: 66 ± 25 nmol/L vs not being outside daily during summer: 58 ± 27 nmol/L, P = 0.02) and vitamin D intake (per unit µg/day during winter/spring: 3.1 ± 0.75nmol/L, P < 0.0001) were associated with higher 25(OH) D concentrations.

Conclusions

The prevalence of vitamin D inadequacy was 67% and was dependent on age, season and outdoor physical activities. The results suggest inadequacy between vitamin D intake through habitual diet and the reference needs.

THE NECESSITY OF A BIOPSY DURING ENDOSCOPY IN ORDER TO DIAGNOSE GASTRIC ATROPHY AND GASTRIC INTESTINAL METAPLASIA

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Introduction

Gastric cancer is the third most common cause of cancer-related death in the world. Gastric atrophy and gastric intestinal metaplasia both are frequent preneoplastic lesions which are diagnosed by performing an endoscopy and taking a biopsy. Even though a biopsy can be taken in every endoscopy, diagnosis is often based only on the endoscopical finding as the biopsy is twice as expensive as the endoscopy itself.

Study Aims

Evaluate the need of a biopsy during an endoscopy in the diagnostics of gastric atrophy and gastric intestinal metaplasia.

Methods

660 patients (73% women, 27% men) from Gastric Diseases Centre GASTRO were included in a retrospective cross- sectional study. Patients who had had their endoscopies with a standard biopsy scheme done during the time period of the 1st of January till the 31st of December 2013 were selected.

Results

Out of 660 patients (age 65.3 ± 13.7) 374 patients (56.7%) had gastric atrophy in their biopsies. The sensitivity of endoscopy was 34.5% (95% CI 29.9–39.4%), specifity – 90.5 % (95% CI 86.6–93.4), positive predictive value was 82.7%, negative predictive value – 51.4%, in comparison with the biopsy results ($p < 0.05$). 351 patients (53.2%) had gastric intestinal metaplasia and the sensitivity of endoscopy was 7.4% (95% CI 5.1 – 10.6%), specifity was 99.7% (95% CI 98.2–99.9), PPV was 96.3%, NPV was 48.6% ($p < 0.05$). 33 (6%) of the patients (age ≥ 50 years, n = 547) had high risk gastric atrophy (OLGAIII, OLGAIV) which is considered high compared to none in the younger (age < 50 years, n = 113) patients. 53 (9.7 %) patients (age ≥ 50 years) had high risk gastric intestinal metaplasia (OLGIMIII, OLGIMIV), in comparison only 2 (1.8 %) of the younger patients (age < 50 years) were diagnosed with a high risk intestinal metaplasia.

Conclusions

Results show that endoscopy has a low sensitivity in diagnosing gastric atrophy and intestinal metaplasia, and biopsy should be done in order to diagnose these conditions. Especially in those patients of age ≥ 50 years, who have a much greater chance of high risk gastric atrophy and intestinal metaplasia. For those patients with established atrophic gastritis and established intestinal metaplasia, surveillance screening for dysplasia and gastric adenocarcinoma should be considered.

FEATURES OF MOTOR FUNCTION OF THE UPPER GASTROINTESTINAL TRACT IN CHILDREN WITH HELICOBACTER PYLORI-ASSOCIATED CHRONIC GASTRODUODENITIS

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Introduction

Motor function in exacerbation period is not widly studied in children with chronic gastroduodenitis.

Study Aims

To analyze the characteristics of changes of the motor function of the upper gastrointestinal tract among children suffering from chronic gastroduodenitis (CGD) associated with *H. pylori* infection.

Methods

Motor function of the upper gastrointestinal tract was estimated on the basis of the evacuation rate of stomach contents while carrying out ultrasonic examination taking into account dynamics of change of the area of the antrum calculated according to the formula U × AP/4 *15 (U – longitudinal diameter antrum, AP – anterior-posterior diameter antrum). As a test meal the children took porridge, cooked with water, the average volume was 330 ml. The study was performed by the same technician with the help of the apparatus LOGIQ 400 equipped with convex probe with frequency of 3.5 MHz to perform eradication therapy.

Results

In the period of exacerbation abnormalities of motor-evacuation function were detected among 96 % of children and were generally characterized by acceleration of gastric emptying (86.6%), while the slowing of gastric motility was detected among 10% of children ($p < 0.05$). Δ of the area of the antrum of children with CGD amounted to 49.1% whereas among healthy children it was 32.1% ($p < 0.05$). Among the children with slow motor skills Δ of the area was 25.9 %. There was shown a positive correlation of acceleration of gastric motility with the severity of the pain syndrome characterized by intense pain in the form of colic getting worse after having a meal ($r = 0.68$, $p < 0.05$).

Conclusions

Almost all children with chronic gastroduodenitis, associated with Helicobacter pylori, had disturbances of the motility of the stomach, mainly in the form of acceleration of gastric emptying (86.6%). Slowing of gastric motility was detected among 10% of patients. The data obtained suggest that the method of ultrasound diagnostics with the assessment of dynamics of change of the area of the antrum is an effective non-invasive method for the diagnosis of motor disorders of the upper gastrointestinal tract.

THE ROLE OF POSTPRANDIAL ABDOMINAL HEMODYNAMICS IN THE DEVELOPMENT OF MALNUTRITION

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Introduction

Abdominal circulation plays important physiological role, providing nutritional homeostasis.

Study Aims

To study features of abdominal hemodynamics in patients with the malnutrition syndrome.

Methods

The study included 121 patients (mean age 22.28 ± 3.7 years) with the syndrome of malnutrition. Exclusion criteria: presence of acute and chronic diseases, associated with malnutrition; surgical interventions on the digestive organs; medication affecting blood circulation. The control group – 43 patients without malnutrition, matched by sex and age. Doppler ultrasound (Scanner Sonoace-8000, Medison) of the common hepatic artery, splenic artery, superior mesenteric artery, portal vein was performed in 30 minutes after the food intake. Statistical analysis was performed using Statistica-6 packages.

Results

Body mass index in patients with the malnutrition syndrome was 18.5 [17.1-20.0] kg/m^2, in patients of comparison group – 22.7 [21.0-25.0] kg/m^2 (U = 514.5; Z = -7.5; p = 0.0001), the body surface area: 1.7 [1.6-1.8] cm2 and 1.7 [1.6-1.9] cm^2, respectively (U = 2255.5; Z = -0.7; p = 0.4774). Abdominal blood flow in patients with the malnutrition syndrome in the postprandial period had the following features: a lower volume of blood flow velocity in all studied vessels: in the common hepatic artery 480.5 [425, 0-587.0] ml/min against 591.5 [536, 0-689.0] ml/min in the control group (U = 445.0; Z = -3.4; p = 0.0007); in the splenic artery 600.0 [452.0-709.0] ml/min against 700.0 in the control group [591, 0-795.0] ml/min (U = 536.5; Z = -2.5; p = 0.0143); in the superior mesenteric artery 988.0 [837, 0-1272.0] ml/min versus the comparison group 1136.5 [992, 0-1465.0] ml/min (U = 328.0; Z = -2.1; p = 0.0399); in the portal vein 1332.0 [1094, 0-1551.0] ml/min versus the comparison group 1422.0 [1292, 0-1633.0] ml/min (U = 1625.5; Z = -2.2; p = 0.0314).

Conclusions

Patients with malnutrition syndrome have low volume blood flow in vessels of the abdominal aorta in the postprandial period. Such properties of the abdominal hemodynamics might be one of the causes of malnutrition.

BOWEL NECROSIS AFTER ARTERIAL EMBOLIZATION DUE TO ACUTE LOWER GASTROINTESTINAL BLEEDING

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Introduction

The annual incidence of lower gastrointestinal bleeding (LGIB) is 20.5 in 100,000 in the general Western population and results in 1 to 2% of hospital emergencies. The therapeutic options for patients with massive LGI bleeding include surgery, vasopressin infusion, endoscopy, and transcatheter embolization. Although all may be used successfully, none of these options have been completely satisfactory in all patients. Transcatheter arterial embolization has gained widespread acceptance as first-line treatment for acute gastrointestinal bleeding. The risk of bowel infarction associated with embolization proximal to the mesenteric border of the colon exceeds 10%.

Study Aims

We report the case of a 41-year-old woman who developed bowel necrosis following arterial embolization performed for massive gastrointestinal bleeding.

Methods

A 41-year-old woman presented to the emergency department with main complain of bright red blood per rectum. The patient reported being prescribed NSAID's for a severe low back pain due to lumbar disc herniation. On examination, the patient was hypotensive in the supine position, with a blood pressure of 100/60 mmHg, and was tachycardic, with a heart rate of 110 beats per minute. Abdominal examination was benign without tenderness. Hemoglobin was 70 g/l and hematocrit was 21%; all other evaluated laboratory values were within normal limits. The angiographic finding was extravasation from a. mesenterica superior branch.

Results

Transcatheter arterial embolization of a.colica dexter was performed. After the procedure patient was hemodinamically stable, with no signs of bleeding. Patient continues conservative therapy (haemotransfusions) and observation. Two days after embolization, she developed right upper quadrant abdominal pain and vomiting with pyrexia, tachycardia and leucocytosis. Patient presented with regid abdomen. CT revealed caecum and colon ascendens necrosis. Decision was made to do emergency laparotomy that demonstrated necrosis of the caecum and colon ascendens. Right hemicolectomy was performed. After surgery patient made an uneventful recovery and was discharged from hospital in good condition.

Conclusions

We report this case to highlight this rare but serious complication which might arise following arterial embolization. Although arterial embolization is less invasive method and may be suitable for all patients, attention should be paid to avoid ishemic complications.

ANALYSIS OF THERAPEUTIC ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP) DATA OF POST CHOLECYSTECTOMY FEMALES AND PRIOR ANTIBIOTIC EXPOSURE IN LATVIA

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Introduction

Last decade evidence that human gut microbiota indirectly influence glucose, lipid and biliary acid metabolic pathways prompted retrospective case-control study of the incidence of repeated choledocholithiasis episodes necessitating therapeutic ERCP in patients with the history of prior antibiotic exposure.

Study Aims

We investigated whether use of antibiotics influences the risk of repeated choledocholithiasis episodes and whether the effect can be attributed to specific antibiotic groups.

Methods

The initial 2399 ERCP patients (postcholecystectomy female patients only, men were excluded due to the small number limiting statistical value) from Pauls Stradins Clinical University Hospital Endoscopy department data base during 11 year period was analysed (from January 2000 till December 2011). Data allowed single or multiple time antibiotic exposure identification, but not exact antibiotic preparation identification in all cases. Patients were matched for hormonal background and coronary artery disease. Data base provided only 1–3 months prior ERCP information about such confounding factors as fasting episodes or nutritional irregularities (veganism, vegetarianism, prolonged raw food only intake).

Results

Logistic regression analyses revealed that exposure to a single time antibiotic intake course was not associated with an increased repeated gallstones in ductus choledochus, but more than one course of antibiotics were linked to an increased risk of gallstone formation. The odds ratio (OR) associating repeated ERCP due to recurrent gallstones with exposure to antibiotics of any type was 1.51 (95% confidence interval 1.48–1.53). The highest risk for repeated gallstones necessitating ERCP was for multiple previous antibiotic use at an adjusted odds ratio ranging from 1.13 for penicillin group to 1.21 OR for unidentified antibiotics and to 1.43 OR (95% CI 1.40–1.45) for cephalosporins. The above mentioned data are valid for the analysed Latvian female population. The increased use of antibiotics in these patients was found up to 13 years before the diagnosis.

Conclusions

Obtained data provide indirect evidence suggesting the importance of gut microbiota on metabolic outcomes including repeated choledocholithiasis episodes warranting invasive interventions. Precise all-time antibiotic exposure charts for these patients should be included in clinical algorithms. Dysbiotic human enterotype negatively impact lipid and biliary acid metabolism pathways although the exact mechanism need to be clarified in further microbiota studies.

ELECTRICAL STIMULATION OF LOWER ESOPHAGEAL SPHINCTER IN PATIENTS WITH GASTROESOPHAGEAL REFLUX DISEASE

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Introduction

Effective treatment of gastro-esophageal reflux disease (GERD) can be achieved by direct modulation of the lower esophageal sphincter (LES) pressure. Recently the possibility of LES tonus increasing by the means of implantable electrical stimulator was described. Although this method is already used in clinical practice, optimal parameters of LES electrical stimulation are still unknown.

Study Aims

To obtain clinical data regarding effects of different modes of electrical stimulation of LES tonus.

Methods

LES electrical stimulation using external pulse generator was assessed in 9 patients with severe GERD and decreased LES tonus. These patients underwent standard laparoscopic antireflux intervention with additional insertion of 2 temporary electrodes at the level of gastroesophageal junction. Three sets of parameters were studied: 1) low- frequency, long pulse (375 ms pulses, 6 mA at 6 pulse/min); 2) high-frequency stimulation (0.3 ms, 6 mA at 40 Hz); 3) high-frequency, high-amplitude (0.3 ms, 10 mA at 40 Hz, 5 min intervals). High resolution esophageal manometry was used to assess changes in LES tonus. Each set of parameters was used in three patients. Duration of postoperative LES electrical stimulation session was 20 min. Esophageal manometry data during the stimulation were compared with postoperative baseline (20 min), poststimulation period (20 min) and with preoperative manometric values as well.

Results

The low-frequency, long pulse stimulation produces moderate increase in LES pressure, which is maintained in poststimulation period. The second set of parameters (used in commercially available implantable stimulators) generates moderate relaxation of LES during the stimulation period and significant increase of sphincter tonus in the poststimulation period. Patients stimulated with the third set of parameters did not demonstrated modification of LES tonus during the stimulation with moderate increase of the LES pressured in poststimulation period.

Conclusions

Electrical stimulation of LES produces changes in its tonus. Modifications in LES pressure during the stimulation and after the stimulation period depend on many factors, including frequency, pulse amplitude, waveform and duration of the stimulation. Further clinical studies are necessary for selection of optimal stimulation parameters, which can be applied in the treatment of GERD.

PELVIC, ABDOMINAL AND PULMONARY ACTINOMYCOSIS: A CASE REPORT

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Introduction

Actinomycosis is a subacute-to-chronic bacterial infection caused by gram-positive, anaerobic-to-microaerophilic bacteria. It can cause contiguous spreading, suppurative, granulomatous inflammation and multiple abscesses. Abdominal and pelvic forms are 10-20% of reported cases. Commonly infection is associated with intrauterine contraceptive devices (ICD).

Study Aims

To present a clinical case of pelvic actionomycosis associated with ICD use and spreading to abdomen and lungs.

Methods

Case report presentation of pelvic actynomycosis with wide spreading in to abdomen and lungs.

Results

In July 2015 52-year-old women was hospitalized in PSCUH in severe overall state with complaints of shortness of breath, palpable mass formation on epigastrium front wall and weakness. At the admission laboratory tests showed moderate normocytic anemia (Hgb 86 g/l), leukocytosis (21.2 × 10^9/l) and CRP 321.5 mg/l. Chest X-ray showed the right side pleuritis with septs, thoracentesis was started. Abdominal US showed focal changes in liver (suspected metastases). Also, October 2014 started fatigue, subfebrile temperature. Already then was normocytic anemia, trombocytemia (Plt 670*103/ml). Bone marrow trepan-biopsy was done (02.2015) – no pathology there. Now abdominal and lung's CT showed multiple destructive nodes (size of bigger node – 12.9 × 14.3 cm, with differential diagnosis of abscesses or metastases) in liver, intraabdominal adipose tissue with destruction, abscess formation (connecting with gastric wall), nodal changes in the pelvis, lungs and right side empyema. Video-assisted thoracoscopy of right side pleural space and empyema drainage were done. Gynecological US showed liquid in Douglas space, parametritis. Swab samples from the cervix revealed actimomycoses. Patient had use ICD 5 years ago. Also abdominal abscesses drainages were made (yellowish sputum were obtained). Pathogen flora from pus punctuates had not be gotten. Liver, pleural biopsies showed inflammation process. By basic treatment were started Ceftriaxone, Metronidazole and then Penicillin G (3 million units × 4 per day). After 45 days complex therapy patient was discharged from the hospital in generally satisfactory overall state with administration of Amoxicillin 1gr × 2 per day 6 – 12 months with strict follow-up.

Conclusions

Actinomycosis can mimic tumorous process clinically as well as by imaging. Treatment strategy with long antibiotics (Penicillin G) and active drainage of intra-abdominal abscesses shows good outcome.

WALDMANN'S DISEASE: A CASE REPORT

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Introduction

Waldmann's disease or primary intestinal lymphangiectasia (PIL) is a rare disorder characterized by dilated intestinal lymphatic vessels and the development of protein-losing enteropathy. Less than 200 cases have been reported globally.

Study Aims

To demonstrate the role of new technologies in diagnosing Waldmann's disease as well as the importance of proper diet.

Methods

Case presentation. A 25 year old male was referred to Digestive Diseases Center GASTRO with the history lower extremity edema, general weakness, abdominal distension, periodic diarrhea, pyodermia, recurrent erysipelas, recurrent tetanic attacks and tingling sensation. He experienced the mentioned symptoms from the age of 5 years. Physical examination revealed pitting edema of both legs with edema prevalence on right extremity, abdominal distension, pyodermia. Laboratory tests revealed hypoalbuminemia (26.3 g/l), decreased immunoglobulin G (IgG) concentration (546 mg/dl), hypocalcemia (2.04 mmol/l), lymphopenia (0.66×10^9/l) and elevated parathormone levels (135 pg/ml). Repeated upper endoscopy revealed grade "A" esophagitis. Endoscopic ultrasonography was without significant findings. Capsule endoscopy showed edematous intestinal mucosa with hyperplastic, balloon-like intestinal villi.

Results

The diagnosis of PIL was established by clinical findings, laboratory results and capsule endoscopy findings. A low – fat diet with high protein and vitamin supplementation and complex physical therapy were initiated. Recurrent courses of antibacterial therapy were used for management of pyodermia. Patient showed clinical improvement after application of treatment.

Conclusions

PIL is a rare condition and should be suspected in case of recurring diarrhea and edema of lower extremities, associated with hypoalbuminemia, hypogammaglobulinemia, hypocalcemia, lymphopenia. The diagnosis of PIL might be confirmed by the presence of intestinal lymphangiectasia based on capsule endoscopic findings. These patients require multidisciplinary treatment by gastroenterologist, dietologist, and immunologist.

LOW PREVALENCE OF CELIAC DISEASE IN FUNCTIONAL DYSPEPSIA AND IRRITABLE BOWEL SYNDROME

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Introduction

There is a symptom overlap between a classical celiac disease (CD) irritable bowel syndrome (IBS) and functional dyspepsia (FD).

Study Aims

To analyse the prevalence of CD characteristic markers: tissue transglutaminase IgA (tTgA) and/or antiendomysial IgA group antibodies (EMA) and positive histology in patients with IBS and FD.

Methods

Consecutive patients with FD and IBS in a secondary gastroenterology practice unit of Digestive Diseases Centre GASTRO were retrospectively analysed between 2002 and 2014. The diagnosis of IBS and FD was made under clinical settings by using Rome II (2002–2006) and Rome III criteria (2006 – present). Patient levels of tTgA and/or EMA were evaluated serologically. Total IgA was also measured. Four duodenal biopsies were obtained from duodenum for histopathology. Histopathology was reported according to Marsh classification. Patients diagnosed or being referred for confirmation of CD were excluded from the study.

Results

1875 patients, 1214 (64.75%) women, 661 (35.25%) men, median age 37 years (range 18–83) have been enrolled in the study. 1558 patients were tested for tTgA, positive tTgA was found in 20 patients (1.28%), in patients with dyspepsia positive tTgA was found in 1 (0.18%) of 550 patients. Positive tTgA was found in 15 (2.8%) of 560 patients with IBS. Positive tTgA was found in 4 (0.9%) of 448 patients with IBS and FD. Positive EMA was found in 2 (1.35%) patients of 148 tested. Number of biopsy positive cases was 15 (2.6% of biopsies investigated), most of them with Marsh I lesions (1.9% of the biopsies investigated); Marsh III lesions were found only in 4 cases (0.69% of the biopsies investigated). 11 patients with positive biopsies had negative serological markers for celiac disease. 2 (0.4%) patients with diarrhoea predominant IBS and 2 (0.46%) patients with altered type IBS had positive serology and biopsies. The level of total IgA was measured in 1270 (68%) patients. 4 patients (0.31%) had IgA deficiency.

Conclusions

The prevalence of celiac disease in patients with FD and IBS is low. IgA deficiency could not be reason of low prevalence of CD.

GASTROINTESTINAL STROMAL TUMOUR (GIST) OF STOMACH: RARE PATHOLOGY IN CHILDHOOD

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Introduction

GISTs are uncommon tumours of gastrointestinal tract originate from interstitial cells of Cajal. GISTs are more common in adults over the age of 40. Only 2.7% of GISTS in stomach occur before the age of 21 year. Cells of GISTs carry the receptor of tyrosine kinase therefore immunohistochemically the specific marker for tyrosine kinase (CD117) is used to distinguish GIST from others spindle-cell tumours [Chiarugi et al, 2007].

Study Aims

Aim of the study is to analyze case of GIST in childhood to demonstrate clinical course and possibilities of diagnosis.

Methods

Clinical data, results of radiological examination as well as results of morphological and immunohistochemical investigation in case of GIST in Children`s Clinical University Hospital were evaluated.

Results

13 year old girl was admitted to hospital due to incidental findings of abdominal tumour on ultrasound imaging. MRI investigation showed intraabdominal tumour mass measuring 6.2×7×5 cm involving anterior wall of stomach. Computed tomography scan showed 4 focal lesions in lungs measuring from 1 till 2.8 cm interpreted as metastases. Percutaneous tumour biopsy was performed. Histological investigation revealed uniform spindle cell tumour with immunohistochemical strong CD117 and vimentin positivity in tumour cells while muscular markers were negative. Histological findings and immunohistochemical profile allowed to establish diagnosis of GIST. Because of the likelihood of Carnay triad (GIST, lung chondromas and paraganglioma) and possible differential diagnosis between metastases and lung chondromas, resection of lung lesions was done. Histological investigation revealed lung chondromas. Symptoms of GIST as melena and abdominal pain appeared after the diagnostics of tumour. Gastroscopy showed ulcerations and mass lesions of mucosa of stomach. Specific therapy with Imatinib was applied but reduction in tumour volume was not observed. Finally gastric resection modification Billroth I was done 14 months after establishment of diagnosis. Histological investigation revealed T4N1M0 tumour with metastasis in regional lymph node as well as presence of tumour cells at the proximal line of resection.

Conclusions

1) GIST is rare tumor in childhood which is well detectable by adequate immunohistochemical investigation panel. 2) In childhood aggressive tumor course with formation of regional lymph node metastasis is possible. 3) Correct establishment of diagnosis allowed to determine Carney triad.

DETECTION OF HLA DQ2/DQ8 ALLELES AND ANTIGENSPECIFIC IGG4 ANTIBODIES IN PATIENTS SAMPLES, SUSPECTED FOR COELIAC DISEASE

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Introduction

During few last years we could find a lot of publications regarding IgG4 as a marker of many serious conditions related to IgG4 class antibody presence in serum and tissues as well. It is still little known about IgG4 formation or function in human body or correlation with other laboratory findings.

Study Aims

To find the correlation between HLA DQ2/DQ8 status and presence of IgG4 antibodies.

Methods

In our study we analyze patient blood samples (n = 45, female n = 30, male n = 15, age 1 year – 66 years) regarding presence of antigenspecific IgG4 antibodies and HLA class II DQA1*0501, DQB1*0201, DQA1*0301, DQB1*0302 alleles. Specifically composed antigen panels from Mediwiss Analytic GmbH, Germany (commercially available, immunoblot) were used combining tests for 30 most widely used products from our country's every day's diet. RT PCR HLA detection kits from the DNA Technology company, Russia were used to detect HLA DQ2, DQ8 alleles.

Results

11 samples from the total of 45 were found as positive for presence of HLA DQ2 or HLADQ8 specific alleles; 34 were negative. Only 4 samples, which were positive for presence of HLA DQ2 or HLADQ8 alleles were to be found positive for IgG4 antibodies against wheat or rye proteins and none of them had antibodies against gluten at the same time. 9 samples had IgG4 against egg white, banana and milk proteins. 2 samples were negative against any antigens contained in we had used. 34 samples were found negative regarding presence of HLA DQ2 or HLADQ8 alleles specific for coeliac disease. 13 samples had IgG4 antibodies against wheat or rye proteins, 5 had antibodies against gluten, 13 had antibodies against banana, 23 had antibodies against egg white and 19 – against milk proteins. Most of IgG4 positive samples showed reactivity against 2-4 antigens at the same. Only 5 samples showed no any reactivity in our antigen panel.

Conclusions

We suggest, that detection of IgG4 antigenspecific antibodies could help to find out challenging food proteins in cases where patients have symptoms and/or histological findings specific for coeliac disease and HLA DQ2/DQ8 and anti-TTG test results are negative.

DYNAMICS OF HEPATIC MORPHOLOGICAL ALTERATIONS AND SEVERITY OF PORTAL HYPERTENSION IN CHILDREN WITH AUTOIMMUNE HEPATITIS UNDER PATHOGENETIC THERAPY

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Introduction

Autoimmune hepatitis is a chronic inflammatory condition of the liver of unknown etiology which is characterized by periportal hepatitis, the presence of specific autoantibodies in blood serum and high responsiveness to immunosuppressive therapy. In general, the disease progresses irreversibly and can lead to liver transplantation. The understanding of trajectory of the illness under complex therapy is required to predict the outcome and indications for transplantation at the proper time.

Study Aims

To assess the dynamics of morphological alterations of the liver and the severity of portal hypertension in children with autoimmune hepatitis under pathogenetic therapy with glucocorticosteroid (prednisolone, methylprednisolone) and cytostatic (azathioprine) drugs.

Methods

The study involved 54 children with autoimmune hepatitis examined before, after 6 months and after 12 months of pathogenetic therapy. The severity of hepatic morphological alterations and portal hypertension was assessed by means of earlier proposed scoring system taking into account measures of liver fibrosis and cirrhosis, diameter of the main stem of the portal and splenic veins, spleen length, esophageal varicose veins dilatation, presence or absence of umbilical vein recanalization, ascite, hydropericardium and hydrothorax.

Results

Before therapy, the severity of hepatic morphological alterations and portal hypertension averaged at 20.4 ± 9.2% (24.8 ± 8.3% for patients with cirrhosis and 13.2 ± 2.5% for patients without cirrhosis). After 6 months of therapy, the severity of hepatic morphological alterations and portal hypertension significantly reduced ($p = 0,001$) to 15.1 ± 5.0% (16.9 ± 6.9% ($p = 0.001$) for patients with cirrhosis and 11.0 ± 2.3% ($p = 0.019$) for patients without cirrhosis). After 12 months of therapy, the tendency for reduction in the severity of hepatic morphological alterations and portal hypertension remained (13.4 ± 5.2% in average, 15.6 ± 5.3% for patients with cirrhosis and 9.8 ± 1.8% for patients without cirrhosis) however there was a lack of statistical significance for comparison between the 'after 6 months of therapy' and 'after 12 months of therapy' conditions.

Conclusions

According to the hepatic morphological alterations and portal hypertension scores, significant improvement in children with autoimmune hepatitis can be observed during 6 months of pathogenetic therapy. Subsequent 6 months of therapy did not yield significant improvement of the severity of hepatic morphological alterations and portal hypertension.

BENEFITS OF MULTICHANNEL INTRAESOPHAGEAL-GASTRIC pH-MONITORING IN GASTROOESOPHAGEAL REFLUX DISEASE DIAGNOTICS

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Introduction

Conventional intraoesophageal pH-monitoring is considered as "gold standard" of reflux diagnoses but its sensitivity is not high enough. Using multichannel microprobes can improve diagnostic value pH-monitoring. Previously it was observed that intragastric pH 5 cm below the lower oesophageal sphincter (LOS) often reveals discrepancies between gastric pH and that of the refluxate in the oesophagus, with a lower pH in the oesophagus than in the stomach during reflux. Presumably, these phenomena are more corresponding for gastrooesophageal reflux disease(GERD) and can be explained as duodenum-gastro-esophageal refluxes and "Acid pocket".

Study Aims

To study differences between gastric and oesophageal pH during refluxes and establish diagnostic value for GERD diagnostics.

Methods

We establish 3-channel-probe original system of intraluminal-pH-monitoring (first sensor was situated 5 cm above LOS, second sensor – 5 cm below LOS, the third – 15 cm below LOS) with sampling frequency of 50 Hz. All patients were divided in two groups: with diagnosis GERD (1^{st}) and patients with diagnosis functional dyspepsia (2^{nd}). The first group includes 9 patients with age mean (± S.E.M.) of 52.1 ± 6.2 y.o., and the second one – 7 patients, mean age of 51.6 ± 19 y.o. We noted all episodes of phenomena at both groups during 24-hour study.

Results

Sampling frequency of 50 Hz allowed to observe even small fluctuation of pH-curve and this can be interpreted that 3-channel-probe original system of intraluminal-pH-monitoring is high-resolution method. Mean number of investigated events were 8.6 [1–28; min-max] in first group and 2.1 [1–7; min-max] in second group. To obtain a threshold number of events with stomach-oesophagus pH-discrepancy we constructed ROC-curve and established the best cut-off point > 3 with sensitivity 77.78% and specificity – 85.71% (Youden Index J – 0.63). If it is observed 4 events of pH-discrepancy and more during intraluminal-24-hour pH-monitoring it will give a reason to determinate GERD. The AUC = 0.8 (CI95% 0.53–0.95) of ROC-curve means that accuracy of our test is good.

Conclusions

The event registration with 24-hour-pH-monitoring in stomach and oesophagus can be used as additional criteria for pathological gastrooesophageal reflux diagnostics.

DYNAMICS OF HEPATIC DYSFUNCTION IN CHILDREN WITH AUTOIMMUNE HEPATITIS UNDERGOING PATHOGENETIC THERAPY

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Introduction

Autoimmune hepatitis is a chronic inflammatory condition of the liver of unknown etiology which is characterized by periportal hepatitis, the presence of specific autoantibodies in blood serum and high responsiveness to immunosuppressive therapy. In general, the disease progresses irreversibly and can lead to liver transplantation. The understanding of trajectory of the illness under complex therapy is required to predict the outcome and indications for transplantation at the proper time.

Study Aims

To assess the dynamics of hepatic dysfunction in children with autoimmune hepatitis under pathogenetic therapy with glucocorticosteroid (prednisolone, methylprednisolone) and cytostatic (azathioprine) drugs.

Methods

The study involved 54 children with autoimmune hepatitis examined before, after 6 months and after 12 months of pathogenetic therapy. The severity of hepatic dysfunction was assessed by means of earlier proposed scoring system based on the 14 biochemical parameters that represent the liver role in the protein, fat and carbohydrate metabolism (albumin, alanine aminotransferase, aspartate aminotransferase, AST/ALT ratio, total bilirubin, cholesterol, glucose, lactate, ammonia, urea, transferrin, caeruloplasmin, prothrombin, fibrinogen).

Results

Before therapy, the severity of hepatic dysfunction at 28.8 ± 12.5% (33.3 ± 12.6% for patients with cirrhosis and 21.9 ± 8.9% for patients without cirrhosis). After 6 months of therapy, the severity of hepatic dysfunction significantly reduced ($p = 0{,}001$) to 20.6 ± 7.9% (22.2 ± 8.1% ($p = 0.001$) for patients with cirrhosis and 18.1 ± 7.0% for patients without cirrhosis). After 12 months of therapy, the tendency for reduction in the severity of hepatic dysfunction remained (18.9 ± 9.2% in average, 18.9 ± 10.1% for patients with cirrhosis) however there was a lack of statistical significance for comparison between the 'after 6 months of therapy' and 'after 12 months of therapy' conditions.

Conclusions

According to the hepatic dysfunction scores, significant improvement in children with autoimmune hepatitis can be observed during 6 months of pathogenetic therapy. Subsequent 6 months of therapy did not yield significant improvement of the severity of hepatic dysfunction.

PAPILLARY LESION OF SUBMANDIBULAR DUCT OF DOG IN EXPERIMENTAL SURGERY

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Introduction

The prevention of ductal stenosis in salivary gland surgery is important in oncologic and non-oncologic cases. The maxillofacial surgeons sometimes have difficulties to find out the cause of salivary duct closure. They can diagnose mainly secondary symptoms of gland damage.

Study Aims

Was to investigate the healing process of artificial injury of salivary gland duct.

Methods

An experimental operation was made on a dog to model small damage of submandibular duct. The duct of a dog was opened through intraoral incision in the length of 2 cm. The duct was transversely cut for 75 % of the perimeter. Then only the overlying mucous membrane was sutured. The dog was observed for 10 days. Histological specimens were stained with haematoxylin eosin, PAS and van Gison.

Results

Sialography with iodolipol was performed. In the duct of salivary gland was detected narrowed area with diameter 0.07 mm instead of 0.8 mm in normal conditions. After regeneration process of 10 days light microscopy was done. In the duct papillary lesions were found. Some of them were without epithelium and consisted mainly from granulation tissues and fibrin. Larger lesion was polyp like mass with expressed proliferation of PAS positive epithelial cells. In stroma of it there were a lot of fibroblasts and fibres. In the proximal area a dilated duct with slight elevations of mucosa was observed. Narrowing of salivary gland ducts accordingly different researches may happen due to increased pressure of saliva and due to lumen collapse.

Conclusions

1) Histological examination of narrowed duct in this research was very helpful. 2) Microsurgical operations or sialendoscopy should be made carefully saving the duct wall as even relatively small injuries can cause obstructions of them with the formation of papillary lesions. 3) Long term stenting of salivary gland duct is one of the prevention actions of stenosis in them.

MAGNETIC RESONANCE ENTEROGRAPHY WITH DIFFUSION WEIGHTED IMAGING (DWI) SEQUENCE HELPS TO REVEAL EARLY INFLAMMATORY CHANGES IN PATIENTS WITH SUSPECT BOWEL DISEASE

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Introduction

Over the past decades incidence of inflammatory bowel diseases (IBD) has markedly increased in both adults and children in developed countries. Up to 15% of patients belong to the unclassified IBD, category, and in around 80% of them either Crohn's disease or ulcerative colitis develops within next several years. IBD impairs quality of life, causes disability, and in a number of cases surgical treatment – colectomy is needed. The progression of IBD can be prevented only by timely treatment based on early diagnosis.

Study Aims

To evaluate whether magnetic resonance DWI is applicable in revealing early inflammatory changes in patients with suspected inflammatory bowel disease (IBD).

Methods

16 patients (14–77 years old) suspected for inflammatory bowel disease (IBD) were divided into two groups of faecal calprotectin level ≥300 µg/kg) and < 300 µg/kg), and were examined by 1.5 T MR scanner maintaining bowel distention with Mannitol solution (2.5%). Restricted diffusion areas found in MRI were compared with ileocolonoscopy and / or capsule enteroscopy findings.

Results

Among subjects with elevated calprotectin levels (n = 5) 3 patients showed both restricted diffusion and endoscopic inflammatory signs, in 2 patients restricted diffusion was found but no macroscopical inflammatory signs, but in 1 patient neither restricted diffusion nor macroscopic inflammatory signs were found. Among subjects with low calprotectin levels (n = 11) in 3 patients both restricted diffusion and endoscopic inflammatory signs were present, 4 patients showed restricted diffusion was found but no macroscopical inflammatory signs, and in 4 patients neither restricted diffusion nor macroscopic inflammatory signs were present.

Conclusions

DWI sequence demonstrates the high diagnostic potential of finding presence of inflammation in patients with suspect IBD; it's sensitivity might be superior over sensitivity of calprotectin test and it could improve early IBD diagnostics in patients, suspect for IBD, with low calprotectin levels.

INTESTINAL PERMEABILITY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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Introduction

Accumulated data indicate that increased intestinal permeability plays key role in the pathogenesis of inflammatory bowel disease (IBD). This phenomena is known in literature as "leaky gut syndrome". The most often used method is "saccharide" permeability determination, in particular the lactulose/mannitol ratio, which preferably measures the permeability of the small intestine.

Study Aims

To evaluate the intestinal permeability in patients with IBD.

Methods

We prospectively included 80 people – 60 patients with IBD (27 patients in CD and 33 in UC) and 20 healthy controls. Lactulose/mannitol test was performed classically: person drank a solution containing 6 g of lactulose, 3 g of mannitol and 50 ml of water, after that all of urine was collected within 6 hours. The lactulose and mannitol concentration in urine was determined by chromatography-tandem mass spectrometry with further calculation of the lactulose/mannitol ratio. Mean age in CD was 33.4 ± 1.5 years, in UC – 38.03 ± 1.14, in controls – 30.13 ± 1.5. Severity of CD was assessed by CDAI: remission in 6 cases, mild – 6, moderate – 9, severe – 6, in UC by Mayo score: remission – 7, mild – 11, moderate – 9, severe – 6.

Results

There was an increased lactulose/mannitol ratio in patients with active CD up to 0,042 [0.021; 0.077] compared with remission – 0.009 [0.006; 0.01] ($p < 0.05$) and control group – 0.011 [0.009; 0.017] ($p < 0.05$). Lactulose/mannitol ratio was increased in UC exacerbation – 0.021 [0.014; 0.034] compared with remission – 0.006 [0.005; 0.01] ($p < 0.05$) and healthy controls – 0.011 [0.009; 0.017] ($p < 0.05$). The comparing of the groups of patients in active CD and UC showed very similar data (0.042 [0.021; 0.077] vs 0.021 [0.014; 0.034]). In patients with severe CD attack intestinal permeability level was 0.077 [0.055; 0.107], which was significantly higher comparing with moderate – 0.034 [0.026; 0.042] ($p < 0.05$) and mild – 0.016 [0.01; 0.022] ($p < 0.05$), in UC we observed only tendency.

Conclusions

Increased lactulose/mannitol ratio was observed in patients with active IBD comparing with patients in remission and healthy controls. Also in more severe patients intestinal permeability was higher, comparing to less severe behavior of IBD.

MODERN METHODS IN ESOPHAGAL MUCOSA STUDY IN PATIENTS WITH GASTROESOPHAGEAL REFLUX DISEASE

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Introduction

In recent years there has been a clear tendency to an increasing number of diseases of the gastrointestinal tract that represent important economic, medical and social problem. The recurrent nature of the flow, a wide range of complications, high frequency of unsatisfactory responses to therapy of diseases, determine the directed search of new high-tech innovative bioanalytical methods for diagnosis and optimizing treatment, one of which is proteomic profiling. Studies using proteomic analysis in gastroenterology few, but, according to experts is very promising. Most diseases of the gastrointestinal tract is directly related to the change in the concentration of proteins in the mucosa. Identification of the profile of proteins will allow to expand representations about the molecular mechanisms of development and formation of disease, identifying early diagnostic and prognostic markers.

Study Aims

To explore the informative value of proteomic profiling on the example of gastroesophageal reflux disease.

Methods

In a pilot prospective cohort study with parallel groups included 40 patients with clinical and endoscopically verified GERD: 26 (65%) with non-erosive and 14 (35%) with erosive forms of GERD. The control group consisted of 20 healthy persons. Separation and identification of peptides and proteins in biopsy specimens of esophageal mucosa is made on the basis of SDS-PAGE, 1DE, kits for clinical proteomics, MALDI-TOF-TOF mass spectrometry. Bioinformatic analysis of intermolecular interactions performed in international databases such as NCBI, SwissProt, MSDB, NCBI.

Results

In patients with erosive form of GERD identified 4 protein, absent in the control group: periactin, laminin, an inhibitor of protease B and α-B-crystallin. In the group of patients with NERB differences identified proteins: keratin 8, protein the small intestine, binding to fatty acids, a major transcription factor IIH. There is a decrease in the absolute number of patients with NERB with the protein expression of the esophageal mucosa in healthy.

Conclusions

Identification of protein differences in patients with different GERD demonstrates the heterogeneity of the changes of esophageal mucosa. Further study of the expression of proteins in patients with GERD on long-term antisecretory therapy.

APELIN – POSSIBLE MARKER OF PROGRESSION OF METABOLIC DISORDERS IN THE PANCREAS IN PATIENTS WITH COMBINED COURSE OF CHRONIC PANCREATITIS AND TYPE 2 DIABETES MELLITUS

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Introduction

Apelin is an adipocytokine, which can be considered as unifying link between metabolic disorders in the body and the development of pathological changes in the pancreas in patients with combined course of chronic pancreatitis (CP) and type 2 *diabetes mellitus* (T2DM).

Study Aims

The aim of this study was to explore the causative factors of progression of metabolic disorders in the tissues of the pancreas and their relationships in patients with combined course of CP and T2DM.

Methods

The study was performed on 62 patients (22 males; mean aged 57.38 ± 1.84) with CP and T2DM; control group (n = 20). The survey plan included: BMI, fecal elastase -1, α-amilase, CRP, apelin, cholesterol, TG, glucose, HbA1c, HOMA-IR, IRI.

Results

We found 1.7-fold increase in α-amilase serum level in patients (25.64 ± 1.45) which was significant higher than in control (15.45 ± 0.68) ($p < 0.05$). Levels of elastase-1 were significantly lower in patients compare to control (131.4 ± 5.4 vs 204.9 ± 0.99, $p < 0.05$). Level of CRP in patients was significantly higher compared to control (7.90 ± 0.94 vs 0.25 ± 0.18, $p < 0.05$). We revealed 2.0-fold increase in serum apelin level in patients which was significant higher than in control (349.97 ± 12.77 vs 171.0 ± 8.2, $p < 0.05$). We found significant higher levels of glucose, HbA1c, HOMA-IR, IRI in patients than in control (9.62 ± 0.26 vs 4.98 ± 0.06; 7.73 ± 0.17 vs 5.83 ± 0.07; 7.92 ± 0.64 vs 0.82 ± 0.07; 17.16 ± 0.92 vs 3.7 ± 0.29; respectively, $p < 0.05$). We found 1.8-fold and 1.7-fold increase in cholesterol and TG levels in patients (6.10 ± 0.15 and 2.41 ± 0.11) which was significant higher than in control (3.38 ± 0.06 and 1.36 ± 0.13; $p < 0.05$). There were correlation between apelin and BMI ($r = 0.50$; $p < 0.05$), CRP ($r = 0.72$; $p < 0.05$), elastase-1 ($r = -0.69$; $p < 0.05$), α-amilase ($r = -0.27$; $p < 0.05$), glucose ($r = 0.59$; $p < 0.05$), HOMA-IR ($r = 0.70$; $p < 0.05$), cholesterol ($r = 0.38$; $p < 0.05$) and TG ($r = 0.56$; $p < 0.05$).

Conclusions

The results suggest the use of serum apelin level as a possible marker of progression of metabolic disorders in the pancreas on CP and T2DM.

SMALL INTESTINAL BACTERIAL OVERGROWTH IN CHILDREN WITH DUODENAL ULCER DISEASE AND FUNCTIONAL DYSPEPSIA

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Introduction

The small intestinal bacterial overgrowth (SIBO) is characterized by the increase in the number and type of colonic bacteria in the upper gastrointestinal tract. SIBO disturbs digestion and absorption in the alimentary tract, which seems to cause inflammation. Recent studies suggest a potential relationship between *H. pylori* (HP) infection and SIBO. The state of the digestive tract microflora is not often taken in account in the treatment of patients with duodenal ulcer disease (DUD) and functional dyspepsia, associated with HP. This fact can be considered as one of the causes of the poor effect of HP eradication therapy.

Study Aims

To study the frequency of SIBO in children with DUD and functional dyspepsia, associated with HP.

Methods

The study involved 60 patients with DUD and 50 children with functional dyspepsia, aged 12 to 17 years. DUD was diagnosed by endoscopy. The diagnosis of functional dyspepsia was based on Rome III criteria. HP infection was detected in all patients by the two ways: a rapid urease test with biopsy material and an urea breath test. Diagnosis of SIBO was based on a non-invasive hydrogen breath test with a load of lactulose. The control group was composed by 30 healthy children.

Results

SIBO was detected in 57 (95.0 ± 2.8 %) children with DUD. In 37 (74.0 ± 6.2 %) patients with functional dyspepsia, associated with HP, SIBO was determined. In control group SIBO was diagnosed only in 4 (13.3 ± 6.2 %) children. The differences in frequency of SIBO between patients with DUD, children with functional dyspepsia associated with HP, and control group were statistically significant ($p < 0.05$).

Conclusions

This study demonstrated the high prevalence of SIBO in patients with DUD and functional dyspepsia, associated with HP. It can lead to lower quality of eradication of HP therapy and increase the frequency of side effects of this therapy.

AMYLASE LEVELS IN PATIENTS WITH BRONCHO-OBSTRUCTIVE PULMONARY DISEASE

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Introduction

Steroid use is a relatively frequent reason for pancreatitis due to medical leasions.

Study Aims

To determine the activity of amylase in patients with broncho-obstructive pulmonary disease.

Methods

The study involved 30 patients with asthma of varying severity and 10 patients with COPD combined with asthma. Among them: men 12, women 18. The average age was 47.0 ± 14.5 years. Determined amylase, glucose, total cholesterol and bilirubin. Studied pulmonary function tests. It uses the classification (GINA – Global Initiative for Asthma, 2006), bronchial asthma, COPD (GOLD – Global Initiative for Chronic Obstructive Lung Disease, 2003). SAT test was conducted to assess COPD. Statistical processing of the material used SAS 9.2 software and correlation analysis.

Results

Among the examined patients with persistent asthma 53.3% moderate, and severe persistent intermittent light mild 3.33%. The mean age was 57.6 ± 15.0 years. Duration of illness – 137.4 ± 14.6 months. All patients found an increase amylase levels, without clinical manifestations. The average value of amylase was 9.21 ± 17.69 mmol/l, and increases more than 5 times the norm. In the group of patients with COPD combined with asthma amilazy- level of 6.22 ± 1.24 u/l, and increased more than 3 times the norm. Lung function decreased: FVC was significantly ($p < 0.001$) fell from 4.60 to 1.43 liters. OFV1- ($p < 0.005$) from 3.22 ± 0.76 to 1.15 liters. VC – ($p < 0.002$) from 4.23 ± 2.17 to 1.27 ± 1.36 liters. The cholesterol levels of 3.38 ± 1.17 mmol/l, glucose 4.97 ± 1.13 mmol/l of bilirubin 15.7 ± 3.52 mmol/l were the same as in patients with asthma, or in conjunction with its COPD. SAT test data analysis (in points), the total score was 31.1, showed a significant impact on the lives of patients with COPD.

Conclusions

In patients with bronchial asthma combined with COPD increase of amylase was seen frequently. The duration of steroid use and amylase elevation had a weak relationship and the absence of clinical manifestations of pancreatitis in the studied patients, possibly due to the compensation of its function by the secretion of intestinal enzymes.

BELIEFS ABOUT MEDICATION AND HEALTH RELATED TO QUALITY OF LIFE IN LATVIAN IBD PATIENTS

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Introduction

Patients with IBD are facing two contradicting problems – necessity to take medications and concerns about the possible adverse effects, both of which have been shown to influence medication taking behivour in oposite ways. Beliefs about Medicines Questionnaire has previously been validated to assess these two contradicting incentives in patients with chronic conditions but has been seldom used to assess IBD patients It measures patients' beliefs about medicines over several categories – perceived medication necessity, concerns, overuse, benefit and sensitivity.

Study Aims

The aim was to assess the beliefs about maintenance medication and to test if they correlate with QoL in Latvian patients with IBD.

Methods

The BMQ was translated and given to IBD in-patients in our hospital together with EQ-5D and IBDQ questionnaires. Outpatients were contacted via telephone, and the questionnaire was delivered with a courier and collected the same way afterwards. Statistical analysis was done with SPSS 20.0.

Results

26 inpatients and 14 outpatients (24 males and 16 females) completed the questionnaires. 18 had Crohn's disease and 22 had ulcerative colitis. Patients' mean age was 37.8 years (CI: 33.6–42.0). In EQ-5D mobility and self-care activities were the significantly less affected than everyday activity, pain and depression items (mean scores 1.3 and 2.3 respectively, $p < 0.01$). The average QoL in inpatients was significantly lower both on EQ-5D (50.7 vs. 72.3, $p < 0.001$) and IBDQ (124.3 vs. 169.0, $p < 0.001$). No differences between males and females or patients with ulcerative colitis and Crohn's disease were noted. 67% of patients were ambivalent towards their medications, therefore simultaneously perceiving them as necessary, but having high level of concerns. And only 8% (4 patients) showed either a clear belief that their medication was necessary (4%) or harmful (4%). Patients who perceived themselves more sensitive to medicines more often also thought that medical treatment is used excessively (r value 0.535, $p < 0.001$).

Conclusions

QoL was mostly influenced by items that are easy to improve with medication – pain and depression/anxiety, which seems to indicate that these concerns are not addressed properly in the clinical care. No correlation between patients' beliefs and their perceived QoL was found.

PATHOGENIC MECHANISMS OF FUNCTIONAL DYSPEPSIA IN CHILDHOOD

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Introduction

The leading place among the violations of the digestive tract takes functional dyspepsia (FD), the clinical significance of which is determined by the fact that it is the first step in the formation of chronic gastroduodenal pathology. At the same time diagnosis and treatment of FD in children cause considerable difficulties, since many aspects of the pathogenesis of FD, especially in childhood, remain unclear.

Study Aims

Clarification of the mechanisms of formation of functional dyspepsia in children.

Methods

The study involved 134 children with FD aged 5–15 years and 62 children of the same age with chronic gastritis, gastroduodenitis (CGD), and 30 healthy children of peers. All children conducted psychological research, the study of the vegetative status, EGD with urease test, followed by a morphological study of mucosal membrane, pH-monitoring, ultrasound, determination of the levels of histamine, serotonin, cortisol and insulin in the blood serum.

Results

As in adult patients, in children in all age periods prevailed dismotility-like FD (47.8 ± 4.3%), non-specific variant had a 34.3 ± 4.1% of children, and ulcer-like FD was detected in 18.0 ± 3.3% of children. With age, the frequency ulcer-like FD significantly increased. In 15.7 ± 3.1% of children with FD were no changes in mucosal membrane. Focal hyperemia of antral occurs in 32.8 ± 4.1%, but "spotty" hyperemia – at 51.5 ± 4.3% of patients. Positive urease test were in 30.0 ± 4.0% of children, mostly in ulcer-like FD. Histology coolant in FD was characterized by the absence of changes in 33.3 ± 8.6% of children, the presence of mild to moderate degree of lymphocytic- plasmocytic infiltration in 66.6 ± 8.6%, reduced of mucosal formation in 23.3 ± 7.7% of children. Psychological features of children with FD are characterized by a high degree of emotional stability, increased personal anxiety and introversion, and the original vegetative tone – vagotonia and sympathicotonia with a predominance of tone of the parasympathetic part of the autonomic nervous system, which is especially pronounced in patients with ulcer-like FD. Most children with FD have hyperhistaminemia and hyperserotoninemia, and stored at a ratio between the levels of this biologically active substances. The most significant increase in histamine was observed in children with ulcer-like FD. All patients with FD revealed hyperinsulinemia, the most significant in the ulcer-like and dysmotility-like FD. Cortisol levels in children with FD was within the lower normal range, unlike patients with ulcer-like FD in which it is higher than normal.

Conclusions

Unidentified change of vegetative and psycho-emotional status in conjunction with hyperinsulinemia regularly detected in all patients. In addition, in 89.6 ± 2.6% of cases they were combined with hyperhistaminemia and hyperserotoninemia, which may indicate the role of this pathogenetic mechanisms in the implementation of the disease.

THE IMPACT OF GENDER ON CLINICAL FEATURES IN PATIENTS WITH HCV RELATED LIVER CIRRHOSIS

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Introduction

Approximately 3% of the world population is chronically infected with hepatitis C. Both genders are equally susceptible to infection causing cirrhosis, however study shows us that diversities among genders are responsible for different manifestation of disease.

Study Aims

The aim of the study was to evaluate genders' impact on clinical features in patients with hepatitis C virus related liver cirrhosis.

Methods

A retrospecitive cross-sectional study was performed. All the data was obtained from Riga East Clinical University Hospital from the time period of 2010 to 2014. Original protocol and database were developed with consequential data statistical analysis using SPSS ver.20.0.

Results

In total 221 HCV related cirrhosis cases were enrolled. Out of these 93 (42%) were females and 128 (58%)- males. On average females were older than males (56 years old vs. 50 years old, $p < 0.05$). A statistically significant difference between gender was observed only in HCV and alcohol related liver cirrhosis (males vs. females OR = 2.13 95% Cl = 1.18–3.85). In addition, among laboratory findings a difference between levels of C reactive protein (males-25.6 vs. females-14.4, $p < 0.05$) and GGT (males – 240.2 vs. females – 96.7, $p < 0.05$) were found. Difference in MELD score between groups did not reach a statistically significant value.

Conclusions

1) HCV related cirrhosis affects men at younger age than females. 2) Males more often are suffering from HCV and alcohol related liver cirrhosis. 3) C reactive protein and GGT levels were higher in males.

INTERCELLULAR ADHESION MOLECULE ICAM-1, ICAM-2, L-SELECTIN ACTIVITY INDICATORS OF THE INFLAMMATORY RESPONSE IN THE COLONIC MUCOSA IN ULCERATIVE COLITIS

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Introduction

At the moment, we have very conflicting data regarding the participation of free adhesion molecules in the pathogenesis of ulcerative colitis (UC). Specific expression of adhesion molecules in tissues initiates leukocyte migration and local inflammation.

Study Aims

To examine the contents of ICAM-1, ICAM-2 and L-selectin expression in peripheral blood of patients with active UC with varying intensity of inflammation in the colon mucosa (CM).

Methods

The survey of 45 active UC patients. The content ofiCAM-1, ICAM-2 and L-selectin in the serum was determined by ELISA in the intensity of inflammation was studied by the method of the CM Avtandilov G.G. Depending on the density of the inflammatory infiltrate patients were divided into two groups: those with a weak inflanunatory response (1group) and marked infiltrate intensity (2 group).

Results

Levels of serum adhesion molecules with active UC increased. A direct dependence of the ICAM-1, ICAM-2 and L-selectin on the density of the inflammatory infiltrate in the weave. Patients in group 2 serum ICAM-1 and ICAM-2, L-selectin on average in 2 times were higher than in patients of the 1st group.

Conclusions

The intensity of the inflammatory process in the CM depends on the level of ICAM-1, ICAM-2 and L-selectin. These indicators can be used as auxiliary criteria inflammatory activity and as risk factors for early recurrence of UC.

EROSIVE ESOPHAGITIS – NEW APPROACHES TO DIAGNOSIS

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Introduction

At present time, the spread of the gastroesophageal reflux disease and its morbidity is still on a considerably high level, which compels to searching for new approaches to diagnosis and treatment.

Study Aims

To study the incidence of the virus persistence of the herpes febrilis (HSV), cytomegalovirus (CMV) and human herpes virus type 4 (EBV) in the esophageal mucosa of patients with an erosive form of gastroesophageal reflux disease.

Methods

75 patients with erosive esophagitis (detected via esophagogastroduodenoscopy) were included in this research, the mean age of the patients: 53 ± 14.7 years, males – 55 years, females – 20 years. During the endoscopic examination all patients underwent a biopsy of the esophageal mucosa from the visual defect (2 cm from the gastro-esophageal junction) for immunohistological analysis (IHC test).

Results

According to the results of the IHC test, 32 patients (42.7%) had a virus infection. The degree of incidence of the virus infection in patients with an erosive esophagitis was the following: 21 patients (40.4%) had herpes febrilis (HSV), 19 patients (36.5%) had cytomegalovirus (CMV) and 12 (23%) patients had human herpes virus type 4 (EBV). 18 patients (56.3%) had a combination of several virus types, from two to three types simultaneously.

Conclusions

Chronic virus infection of the esophageal mucosa is widespread amongst patients with an erosive form of gastroesophageal reflux disease. In the majority of cases, several virus types are present.

REGULAR BOWEL HABIT DECREASES RISK OF OBESITY

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Introduction

There are two main factors of obesity: overeating and lack of exercise, the role of bowel movement habits remains unexplored.

Study Aims

The aim of this study was to elucidate the relation between bowel habit regularity and the risk of obesity.

Methods

Validated questionnaires were used for weekly monitoring of circadian rhythm of defecation at 2501 persons, who consider themselves healthy. Regular bowel habit was detected in 1399 persons (56%). Irregular bowel habit was diagnosed in 1102 patients (44%). To diagnose the risk of obesity we randomized two groups of 200 persons with regular and irregular rhythm of defecation. The first group of 100 persons (86 women) 23–85 years demonstrated regular bowel habit (RBH- daily morning bowel movement with a frequency of 7 times per week). The second group of 100 persons (90 women) 25–79 years demonstrated irregular bowel habit (IBH -not daily defecation, frequency 1–6 times per week). We calculated the Body Mass Index (BMI), according which each group was divided into three subgroups: BMI 20–25 kg/m^2 – normal, BMI 25–30 kg/m^2 – overweight, BMI above 30 kg/m^2 – obesity.

Results

There were identified 53 persons with normal BMI, 37 persons with overweight and 10 subjects with obesity among 100 individuals of the first group with RBH. Consequently, in a group of persons with RBH the risk of obesity was 10%. There were 36 persons having normal BMI, another 36 persons-having overweight, and 28 patients having obesity among 100 persons of the second group with the IBH. Consequently, the risk of obesity among persons with irregular bowel habit was 28%. Thus, the risk of obesity among persons with RBH was almost three times lower than among persons with IBH.

Conclusions

Among individuals with regular bowel habit the probability of normal body mass index (53%) was almost 1,5 times higher than among patients with irregular bowel habit (36%). Among persons with RBH the risk of obesity (10%) was almost 3 times lower than among persons with IBH (28%). The regularity of bowel habit predominantly in women of different age is the useful factor, which significantly decreases the risk of obesity.

FREQUENCY OF CO-MORBIDITIES IN PATIENTS WITH COLON CANCER

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Introduction

Colorectal cancer (CRC) is one of the most commonly diagnosed type of cancer in the world, including Latvia. There are more than 1000 new CRC cases and more than 700 deaths per year. Approximately, in one half of the cases, the cancer is localised in the colon. According to the literature, nearly 70% of patients are older than 65 years, and more than one comorbidity is diagnosed and treated alongside the CRC. These fmdings can impact the morbidity and mortality in the postoperative period.

Study Aims

To detect and analyze comorbidities in patientswith primary diagnosed and treated colon cancer with diagnosis code C18.

Methods

Patient data with diagnosis code C18 were collected retrospectively. Patients were operated in the Riga East University Hospital (REUH) Latvian Oncology Center Abdominal and Soft tissue department, in one year period (1.01.2014.–31.12.2014.) An excel table was used to summarize the collected data, while descriptive statistical methods were applied in the process of analysis.

Results

178 cases of primary colon cancer (C18) that were treated are analyzed. There were 52 (29%) cases of patients with IV stage cancer, and 28 (28%) cases with I stage cancer. The distribution between the genders was: 95 (53%) women and 83 (47%) men. The average age was 70.03 ± 12.64. 92% of all the patients had one and more comorbidity. Having compared additional diseases among the cancer staging groups, the moda of comorbidities was 4 in patient group with IV stage. The moda of comorbidities was 3 in the cancer stage group I-III The most cases were cardiovascular diseases -73 (arterial hypertension 40%; coronary heart disease 33%, stroke at anamnesis-7%), gastrointestinal tract disease 54 (13% gastric ulcer disease at amamnesis; 8% cholecystectomies), diabetes in 36; urogenital tract diseases in 37; respiratory tract diseases in 9 cases.

Conclusions

The data from the retrospective stury has shown that practically all patients who have underwent surgery with colon cancer have concomitant diseases which can possibly impact their recovery. Further long-term data collection and research is needed to analyze the relevance.

POTENTIAL NUTRITIONAL BENEFITS OF HULL-LESS OATS IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE AND IRRITATED BOWEL SYNDROME

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Introduction

Evidence shows that oats can be protective in prevention of inflammatory bowel disease (IBD) and irritated bowel syndrome (IBS), and can improve clinical signs of persisting illness. Oats are suggested to possess anti inflammatory, anti-oxidant and prebiotic effects.

Study Aims

In this study, we investigated the effect of high intake of new variety of Latvia originated hull-less oat (*Avena sativa L*) on clinical signs ofiBD and IBS assessed by changes in subjective status and laboratory examination data.

Methods

The study includes 40 patients with IBD, 33 patients with IBS and 25 participants in control group. All participants received daily supplement of 100 g oat flakes for 8 weeks. Dietary intake was assessed before intervention using 3 day food diary. Blood samples were taken from fasting participants at baseline and after 8 weeks.

Results

Only 10.3% (n = l0) of participants considered oat flakes unpalatable, while the majority accepted the taste of oat flakes. 38.1% (n = 37) reported subjective improvement of symptoms. In the beginning of the study we found an insufficient intake of dietary fiber in all the groups; insufficient intake of calcium, except for men in the control group; insufficient intake of magnesium in women in IBD group; insufficient intake of iron in women and excess intake of iron in men. We found an excessive cholesterol intake in all men and women ($p = 0.02$) participants. Consumption of oats significantly increased concentration of antioxidants ($p = 0.03$) in all three groups analysed together; concentration of magnesium tended to be higher, though not statistically significant. Whereas in case of IBS, the concentration of magnesium increased considerably ($p = 0.0l$).

Conclusions

The results suggest a potential of anti-oxidative activity of hull-less oats. In addition, hull-less oats could serve as a considerable source of magnesium and fiber. Hull-less oats could be part of daily diet due to their acceptable taste and gastrointestinal symptoms reducing properties. Further prospective trials are indicated to evaluate the potential of hull-less oats, using strong selection of patients and taking into account other factors.

Conflict of interests

This research received financial support from the European Social Fund project No. 2013/0072/lDP/1.1.1.2.0/13/APIA/VIAA/032

INFLIXIMAB INFLUENCE ON IMMUNOGLOBULINE SUPERFAMILY LEVELS IN PATIENTS WITH INFLAMMATORY BOWEL DISEASES

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Introduction

During the inflammatory processes the level of the immunoglobuline superfamilies siCAM-1, siCAM-2, siCAM-3 increases in the inflammation focus and in the blood serum. The higher the activity of the inflammatory process the higher the concentration of the immunoglobuline superfamilies.

Study Aims

To study the influence of infliximab (INFL) on the level of siCAM-1, siCAM-2 and siCAM-3 in patients with inflammatory bowel diseases (IBD).

Methods

20 IBD patients under infliximab treatment were studied, 12 of them were ulcerative colitis (UC) and 8- Crohn's disease (CD) patients. Their age ranged from 21 to 70 years, average 46,1 ± 4,0. The diagnosis was verified using data of clinical, laboratory, immunological, histological and instrumental methods of research. Before and after the regular INFL treatment the level of the immunoglobuline superfamilies (siCAM-1, siCAM-2, siCAM-3) in the patients' blood serum was determined by ELISA using test-system "Bender MedSystems" (Austria). The statistic data analysis was performed using the computer program "STATISTICA 6.0", the validity of the data was determined using the Student t-criteria.

Results

According to the results of the present research the level of siCAM-1 and siCAM-3 in the blood serum was estimated as respectively 74.8 ± 7.1 and 16.0 ± 1.9 ng/ml on average during active IBD. In spite of the infliximab therapy the level of siCAM-2 not only did not decrease but even on the contrary increased from 22.1 ± 1.7 ng/ml to 24.0 ± 0.1 ng/ml ($p < 0.00l$). The increase of the immunoglobuline supperfamilies level in these patients was attended by the rise of the clinical activity of the disease: up to 7.8 ± 0.6 by Rachmilevitz score in UC patients and up to 328.3 ± 34.4 by Best score in CD patients. After the regular INFL treatment the levels of siCAM-1 and siCAM-3 decreased significantly up to 65.5 ± 3.7 and 11.5 ± 1.1 mg/ml respectively ($p < 0.00l$). This decrease of the immunoglobuline supperfamilies level was attended by the clinical improvement in the course of UC and CD: the Rachmilevitz index dropped.

Conclusions

The performed research shows the increase of the immunoglobuline superfamilies level in the blood serum of the IBD patients pointing to the eventual participation of these immunoglobuline superfamilies in the mechanisms of development of this disease.

ASSOCIATION OF GASTRIC CANCER RISK WITH GENETIC VARIANT OF HRH2

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Introduction

Histamine H2 receptor (HRH2) has a crucial role in the regulation of gastric acid secretion and has an important role in the process of the gastric mucosa inflammation. SNP of HRH2 gene enhancer element promoter rs2607474 results in transition of -1018 G > A and may be associated with the changes of expression of the receptor. Currently only a few papers are published by the Arisawa group on the association of HRH2 SNP rs2607474 with gastric mucosa atrophy and gastric cancer in Japanese population [Arisawa et al., 2012; Yamada et al., 2012].

Study Aims

Is to find out if there is association of HRH2 -1018 G > A (rs2607474) genotype and gastric cancer in Latvian population.

Methods

Gastric cancer patients (n = 121) and control patients (n = 650) from Latvia were included in the study. All gastric cancer patients had approved histopathological diagnosis by two expert pathologists. All control group patients underwent upper gastrointestinal tract endoscopy with the further histopathological evaluation. The local Committee of Ethics approved study protocol before patient recruitment was started. All the patients signed informed consent forms before the enrollment. Blood sample was taken from each patient for DNA extraction with further genotyping. Genotyping for rs2067474 (-1018 G > A) was performed with Taqman Probe-based system (Applied Biosystems Inc., Carlsbad, CA, USA) using commercially available probe (C_15859301_10) on an automatic sequence detection instrument (Real-Time PCR System, Applied Biosystems Inc., Calrsbad, CA, USA).

Results

AG genotype was present in 1/121 gastric cancer patient and 20/650 control group patients. AA genotype was not present in gastric cancer group, neither among control group. Frequency of A allele in the gastric cancer group was 0.41% and in control group – 1.54% (p = 0.231). There was no significant difference comparing genotype ratios between two study groups (p = 0.228). After adjusting for gender, age and HP serology no significant difference in genotype frequency was identified (OR = 0.236, CI95% = 0.030–1.896, p = 0.176).

Conclusions

Our results suggest that HRH2 -1018 G > A (rs2607474) genotype in Latvian population is not associated with gastric cancer frequency. Further studies with larger study population are needed to check the hypothesis.

CHRARACTERISTICS AND HLA II CLASS POLYMORPHISM IN PATIENTS WITH ALVEOLAR ECHINOCOCCOSIS IN LATVIA

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Introduction

Infection with Echinococcus multilocularis causes alveolar echinococcosis that behaves as a slow-growing malignant tumor and without appropriate treatment the infection is lethal.

Study Aims

Our objective was to characterize patients with alveolar echinococcosis and identify HLA II class alleles of risk to acquire Echinococcus multilocularis infection.

Methods

Medical records of a total of 95 patients were used, of which 14 patients with a fully verified diagnosis were selected for analysis. The following information was collected from the clinical records: demographic data (age, sex), ultrasound data, clinical data (symptoms), and data of liver markers. We fully genotyped HLA-DRB1; DQB1; DQA1-using RT-PCR with sequence-specific primers. Associations ofDRB1; DQB1; DQA1 alleles in patients were examined individually using the χ^2 test. P-value and odds ratio were calculated using EPI INFO software version 6 with 95 % confidence intervals. As a controlgroup 100 individuals were taken from the genetic bank of RSU JLCII.

Results

Out of 14 selected patients, 11 were female and 3 were male. Patients' age varied from 13 to 63. Time until diagnosis ranged from the absence of complaints to a period of 180 months; the median time 6 ± 6 months. The most common complaints were abdominal pain or discomfort. The main method of examination was ultrasound. The parasitic lesion was localised in the right hepatic lobe (n = 8), was solitary (n = 8).Two patients had lesions elsewhere -lungs and kidneys. For 6 patients there were indications of infiltration of parasitic tissue in the nearby structures- bile ducts and major blood vessels. Analysing biochemical markers we found deviation in 25%, median levels of ALT was 50 IU/ml, ASAT – 60.13 IU/ml, AF – 372 IU/ml, GGT – 220.6 IU/ml. Checking for immunogenetic markers for susceptibility we found following haplotypes HLADRB1*17:01/DQB1*03:01/DQA1*01:02, gene frequency (gf) 0.10, OR = 11.42 in comparison with control group gf 0.01; HLA-DRB1*11:01/ DQB1*03:01/DQA1*01:03, gf 0.17, OR = 20.63,gf 0.01 in control group and HLA DRB1*11:01/DQB1*03:01/DQA1*03:01, gf 0.31, OR = 22.05,but gf0.02 in control group.

Conclusions

Based on data we found it is necessary to create an algorithm including immunogenetic markers that would allow identifying patients at as early stages of the disease as possible, in order to ensure more efficient treatment.

IS PREOPERATIVE CHEMOTHERAPY ASSOCIATED WITH HIGHER COMPLICATION RATES IN COLORECTAL CANCER PATIENTS AFTER HEPATECTOMIES?

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Introduction

For patients with colorectal cancer liver metastases surgical treatment in most cases is combined with perioperative chemotherapy. Various patohistological studies have shown chemotherapy induced liver injury, for example, steatosis and vascular injury. Therefore higher complication rates in these patients could be expected.

Study Aims

To compare rates of intraoperative complications and morbidity after hepatectomies in patients with and without preoperative chemotherapy.

Methods

Study included 73 colorectal cancer patients with surgicaly treated liver metastases. In total 89 hepatectomies were performed. In 52 cases (58.4%) patients received preoperative chemotherapy: in 10 cases 1–4 cycles were administered (group 1) and in 42 cases more than 4 cycles (group 2). Thirteen patients had completed their adjuvant chemotherapy course after colon resection with no therapy before hepatectomy (group 3). In 24 cases patients didn't recieve any chemotherapy. Intraoperative and post operative complications were studied in each group.

Results

Intraoperative complications developed in 6 cases (6.7%) – 5 massive bleedings and 1 portal vein thrombosis. Two patients were from group 2 and 4 patients had not received chemotherapy. There was no statistically significant difference between these groups (p = 0.17) in terms of intraoperative complications. Overall 30 days morbidity was 21.3% and mortality 1.1%. Liver related complications were infectious or non infecious collections (9 cases) and liver failure (3 cases). General complications included kidney failure, pneumonia, pleuritis, eventeration, bleeding from colon, adhesive bowel obstruction (8 cases). Four patients had to undergo repeted surgery due to complications. Preoperative chemotherapy was not independently associated with rate of postoperative complications in group 1 (p = 0.64), group 2 (p = l) or group 3 (p = 0.68).

Conclusions

Preoperative chemotherapy seems not to be associated with higher intra or postoperative complication rates. Therefore hepatectomies can be safely performed in these patients.

PORTOPULMONARY HYPERTENSION DATA FROM LATVIAN REGISTRY

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Introduction

Portopulmonary (PoPH) hypertension is a form of pulmonary arterial hypertension (PAH) associated with portal hypertension with or without underlying chronic liver disease. It belongs to group 1 in current classification of pulmonary hypertension. PoPH affects 1-5% of patients with portal hypertension and 3% to 10% ofPAH patients. The disease is characterized with elevated hepatic venous pressure gradient (equal to or greater than 5 mmHg) and mean pulmonary artery pressure (mPAP) greater than 25 mmHg combined with increased pulmonary vascular resistance (PVR) > 240 dyne/sec/cm-5) and mean pulmonary artery wedge pressure (mPAWP) lower than 15 mmHg. Definite diagnosis should be made after performing transthoracic echocardiography and right heart catheterization. Long-term survival in cases of PoPH is poor.

Study Aims

The aim is to estimate the number of patients diagnosed with portopulmonary hypertension in Latvia and their hemodynamic parameters.

Methods

Analysis of hemodynamic features of patients included in Latvian Pulmonary hypertension registry, present with portal hypertension.

Results

To present day, a total of 110 patients are included in the Latvian PAH registry since its establishment in 2008. Abdominal ultrasound was performed for all patients for the screening of portal hypertension. Only two patients were found with portal hypertension due to cirrhosis of the liver. The hemodynamic results of the right heart catheterisation for both patients meet the criteria for pulmonary arterial hypertension: • V.A. – 51 year old male; mPAP – 56 mmHg, mPAWP – 14 mmHg, PVR – 388.8 dyne/sec/cm-5 • T.M. – 38 years old female; mPAP – 54 mmHg, mPAWP – 15 mmHg, PVR – 480 dyne/sec/cm-5. The results show that portal hypertension associated PAH accounted for 1.8% of registered patients of PAH. For a comparison, PoPH accounted for 10.4% of the PAH population in the French national registry. Also the prevalence of PoPH has been retrospectively assessed by several studies to be ranging from 3% to 10%.

Conclusions

It can be concluded that there might be a significant number of undiagnosed cases in Latvia due to insufficient recognition and lack of more specific information of the disease.

EPIDEMIOLOGICAL AND CLINICAL DATA CORRELATION IN PATIENTS WITH PRIMARY BILIARY CIRRHOSIS IN LATVIA: A FIVE-YEAR SINGLE CENTER EXPERIENCE

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Introduction

Primary biliary cirrhosis (PBC) is a chronic autoimmune liver disease that affects small bile ducts and leads to progressive cholestasis, biliary fibrosis and cirrhosis. PBC mostly affects middle-aged women. The incidence of PBC is increasing as a result of better awareness and diagnostics of the disease. PBC epidemiological and clinical data has not been systematically studied in Latvia yet.

Study Aims

To analyse epidemiological data in patients with confirmed PBC diagnosis in Latvia.

Methods

Retrospective medical documentation study of all PBC patients admitted to Riga East Clinical University Hospital – the biggest, 2270-bed medical centre in Latvia, from 2010 to 2015. An originally created study protocol, containing more than 35 parameters, was completed for each patient and data was entered into database with consecutive statistical analysis using SPSS 20.0.

Results

34 patients, 33 (97%) female and 1 (3%) male patient, were admitted 54 times. Mean age at PBC suspicion was 58 ± 11.77 years. Mean age at PBC confirmation was 61 ± 10.75 years. Mean time between suspected and confirmed PBC was 1158 ± 1276.9 days. Most frequently mentioned reasons for PBC suspicion were elevated liver enzymes in 23 (68%) cases, pruritus in 15 (44%) cases, pathological findings on abdominal ultrasound in 5 (15%) cases, jaundice in 5 (15%) and fatigue in 4 (12%) cases. Main reasons for admission included symptoms of cholestasis (pruritus, jaundice) in 15 (28%) cases, PBC diagnostics in 14 (26%) cases, PBC decompensation (variceal bleeding, ascites) in 14 (26%) and hospitalization for legal medial documentation in 4 (7%) cases. Mean duration of hospital stay was 6 ± 5.4 days. A positive statistically significant correlation was found between the age of PBC suspicion and MELD class ($rs = 0.390$; $p = 0.0l5$). The longer was the period between PBC suspicion till PBC diagnosis conformation, the higher was the MELD score ($rs = 0.334$; $p = 0.041$).

Conclusions

MELD score correlates with patient age at the time of PBC suspicion and time between PBC suspicion and confrrmation. Further studies need to be carried out in this field, to analyse PBC epidemiological and clinical data in Latvia more completely.

ENDOSCOPIC OESOPHAGEAL STENTING FOR MALIGNANT ESOPHAGEAL TUMOR COMPLICATIONS: SINGLE CENTER EXPERIENCE IN LATVIA

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Introduction

Oesophageal stenting (OS) is mostly used for patients with malignant oesophageal tumours to reduce dysphagia and inanition. OS shows good results and efficacy in patients with complicated disease, significantly improving their quality of life.

Study Aims

The aim was to analyse the main reasons for oesophageal stenting in our clinic and their association with dysphagia and mortality.

Methods

A cross-sectional study of all patients admitted to Riga East clinical university hospital, who underwent oesophageal stenting with self-expanding WallFlex™ (Boston Scientific, US) metal stents from March 2014 to October 2015 was performed. An originally created study protocol with more than 30 parameters (including endoscopic and clinical data) was completed for each patient. All data was entered into database with consecutive statistical analysis using SPSS 20.0.

Results

During one-year period 26 patients: 22 male (84,6%) and 4 female (15.4%) patients with mean age of 62.85 ± 11.48 years, 95% CI [58.21– 67.48] underwent OS. 16 (51,6%) of all OS cases were performed for malignant stenosing tumours. 7 (41.2%) of all OS cases – for other malignant tumour complications, including fistulae and ulcerations. Median time from the cancer diagnosis to the stent placement was 177 (38.50- 525.50) days. 19 (73.1%) patients had dysphagia and 13 (50%) patients had inanition. Inanition was more observed in patients with stenosis comparing to other tumour complications – fistulae and ulcerations ($p = 0.04$). For patients with dysphagia time from tumour diagnosis confirmation till oesophageal stenting was 4 times longer ($p = 0.04$) than for patients without dysphagia. Patients who stayed in hospital longer ($Md = 31$, $n = 7$ vs $Md = 13$, $n = 19$) had higher mortality ($p = 0.01$). No statistically significant differences were found in epidemiological and clinical data (gender, age, time between cancer diagnosis and stent placement, dysphagia) between patient group who had stenosis and patient group who had other tumour complications – fistulae and ulcerations.

Conclusions

1) Oesophageal stenting was mostly performed on male patients with dysphagia and inanition, especially patients with stenosis as the malignant tumour complication. 2) Time from tumour diagnosis confrrmation till oesophageal stenting was 4 times longer for patients with dysphagia. 3) Patients who stayed in hospital longer had higher mortality.

INFLIXIMAB BIOSIMILAR REMSIMA FOR CROHN'S DISEASE PATIENT IN LATVIA: ONE CENTER EXPERIENCE

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Introduction

In prior decades inflammatory bowel disease (IBD) patients had a lack of effective treatment options. The first biologic agent approved for CD was infliximab, a humanized chimeric monoclonal antibody that binds to TNFa. and causes apoptosis of macrophages and activated T lymphocytes. Remsima is the first infliximab biosimilar now available in Latvia.

Study Aims

To demonstrate the first clinical experience with infliximab biosimilar Remsima treatment for CD.

Methods

This is prospective observation study of a 19 years old male with Crohn's disease (A1L2B3), CDAI 334.3, who did not respond to basic treatment and then started infliximab biosimilar Remsima infusions. From past history: In November 2012 colonoscopy biopsy revealed Crohn's disease manifestation in colon and caecum and terminal ileitis. He was operated due to paraproctitis and pararectal fistula. The patient suffered from abdominal pain, fever, diarrhea (10 times/day), weight loss (BMI = 13.3), malnutrition, inanition, hypoproteinemia, chronic iron deficiency anemia, arthalgies. After patient started to receive Remsima infusions, responses were recorded based on the physician's global clinical assessment, physical examinations and laboratory findings.

Results

The patient was treated with one to nine infusions of infliximab biosimilar Remsima at a dose of 300 mg. After the first infusion on July 14 on the third day the patient denied any complains of abdominal pain, in addition he became more active. After 2 weeks the patient received second infusion of Remsima and the diarrhea reduced to 4 times/day. After the third infusion on the 6th week it was an improvement in the nutritional status and clinical conditions of the patient. BMI increased to 17.3. Due to rash all over the body and itching that appeared on the 5th week the patient did not received the next infusion on November. The fourth infusion of Remsima was injected with steroids on December 21. As a result it was an improvement in the patient's clinical symptoms and CDAI decreased to 195.6. The next infusions of Remsima patient received every 8 weeks.

Conclusions

The patient in the present case report realized significant clinical benefit, with minimal side effects, following treatment with infliximab biosimilar. These preliminary data is supportive for this medicinal product inclusion in a broader clinical practice.

MELD SCORE CORRELATION WITH LABORATORY FINDINGS AND COMPLICATIONS OF HEPATITIS C CAUSED BY LIVER CIRRHOSIS

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Introduction

Model for End-Stage Liver Disease (MELD) is a scoring system used to estimate the severity of chronic liver disease. Score is based on objective variables and predicts survival among different populations of patients.

Study Aims

The aim of the study was to retrospectively analyze potential connection between MELD score and laboratory fmdings and complications of hepatitis C caused liver cirrhosis.

Methods

A retrospective cross-sectional study based on data from Riga East Clinical University Hospital from the time period of 2010 to 2014 was performed. Patients with liver cirrhosis due to chronic hepatitis C were enrolled into the study. Obtained data was statistically analysed using SPSS ver. 20.0.

Results

In total 221 cirrhosis cases were enrolled in the study. Mean age was 52.7 ± 13.4 years. Gender had no statistically significant influence on MELD score, which varied between 7 and 51 with mean of 16.6 ± 7.7. Statistically significant correlation was found between leukocytes ($r = 0.4$, $p < 0.00l$), urea ($r = 0.4$, $p < 0.00l$), serum albumin ($r = -0.4$, $p < 0.00l$) and MELD score, which means that higher leukocytes, higher urea and lower serum albumin rates give higher MELD score. At the time of hospitalization 208 (94%) of the patients had different complications of liver cirrhosis. Correlation between MELD score varied significantly with esophageal varices ($r = 0.2$, $p < 0.05$) and esophageal vein bleeding ($r = 0.2$, $p < 0.05$). Results show, if patient is present with esophageal varices and esophageal vein bleeding, MELD score is higher.

Conclusions

1) Patients with higher leukocytes, urea and lower serum albumin level are presenting higher MELD score. 2) In patients who presented with esophageal varices and esophageal vein bleeding, higher MELD score was observed.

CLINICAL EVALUATION OF DIFFERENT BOWEL CLEANSING SCHEMES PRIOR CAPSULE ENDOSCOPY

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Introduction

Despite the fact that video capsule endoscopy (CE) has proved to be a valuable diagnostic tool, there are several factors influencing the quality of this procedure, including impermeable fluids, food remains etc.

Study Aims

To evaluate the effectiveness o the most popular currently used bowel preparation schemes (BPS) prior CE.

Methods

CE was performed in P. Stradins Clinical University Hospital and Latvian Maritime Medicine Centre for the period from 2006 to 2015. One of the 4 BPS were used a day prior to CE: 1) 2L polyethylene glycol (21PEG) 2) 41 polyethylene (41PEG) 3) 30 ml of castor oil (Co) 4) 24 hours of fasting (Fas), when PEG or Co was contraindicated. The main regimens were either 21PEG or Co. 41PEG was chosen in cases if it was known, that the patient has delayed intestinal transit. The assessment of the bowel cleanliness (BCL) was as follows: excellent (no bubbles / fluid in the lumen); satisfactory (bubbles / fluid are hindering visualization); poor (due to the bubbles / fluid some areas cannot be visualized) [DeFranchis K, 2005]. SPSS ver.22. was used for data analysis.

Results

Out of 500 patients who underwent CE, 399 were entered into the database. Fas scheme was obtained in 25 (6.3%) pts., 41PEG – 76 (19.0%), Co – 117 (29.3%), 21PEG – 181 (45.4%). BCL was as follows: excellent-88 (22.0%) cases, satisfactory – 268 (67.2%), poor – 43 (10.8%). Excellent BCL was ascertained mostly using 21PEG (25.4%) and 41PEG (25%), Co – (17.9%), but poor – mostly with Fas {24%). The total percentage of excellent and satisfactory BCL was obtained in 93.9% in patients with 21PEG BPS, 86.8% – with 41PEG, 86.3% – with Co and 76% – with Fas. The positive correlation ($\chi^2 = 13.833$, $p = 0.032$) was observed between the degree of BCL and BPS, respectively, best BCL was observed in patients with PEG 21 BPS.

Conclusions

Relatively large percentage of satisfactory bowel cleanliness and comparatively small percentage of bowel cleanliness rated as “excellent”, using currently most popular BPS, point out to the important issues in bowel preparations prior to CE. Due to our data better BCL could be obtained using 21PEG scheme.

CLINICAL SIGNIFICANCE OF CAPSULE ENDOSCOPY IN PATIENTS WITH UNEXPLAINED CHRONIC ABDOMINAL PAIN

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Introduction

Unexplained chronic abdominal pain (UCAP) is a controversial indication for video capsule endoscopy (CE). It was mentioned as one of indications for CE according to ESGE (European Society of Gastrointestinal Endoscopy) guidelines in year 2006, however – excluded in year 2015. Neverthe1ess, Latvian experience shows that CE could be helpful diagnostic modality in patients with UCAP.

Study Aims

To evaluate capsule endoscopy clinical significance in patients with unexplained chronic abdominal pain.

Methods

CE was performed in P. Stradins Clinical University Hospital and Latvian Maritime Medicine Centre for the period from 2006 til12015. All the patients had upper or/and lower endoscopy, different imaging studies (CT, SBFT, MRI) before CE, but the reason of UCAP was still unclear. Original study protocol with more than 370 parameters (demographic, clinical, laboratory, CE data) was fulfilled for each patient. All the data was entered into the database with consecutive statistical analysis using SPSS ver.22.

Results

In total 500 CE were performed and 372 CE were entered into the database. Out of these, patient number with UCAP was 71 (19.1%). 28 (39.4%) of patients were females and 43 (60.6%) were males. There was no statistically significant difference observed between patient genders. Patients' age was from 13 to 78 (average 46.72 ± 14) years. Capsule endoscopy results were as follows: • UCAP cause was established in 40 (56.4%) cases: erosive enteropathy – in 27 (38%) cases, Crohn's disease – 7 (10%); nonsteroidal anti-inflammatory drug enteropathy – 4 (5.6%); parasite in small bowel – 1 (1.4%); small bowel tumor – 1 (1.4%); • UCAP cause was judged as possible in 28 (39.4%) cases: segmental enteropathy – 28 (39.4%) cases. • UCAP cause was judged as unlikely in 3 (4.2%) cases: multiple nodular mucous uplifts – 1 (1.4%), multiple phlebectasias – 1 (1.4%), small bowel diverticulum – 1 (1.4%).

Conclusions

Capsule endoscopy could be an informative procedure for finding the cause of UCAP in patients who underwent other endoscopical and radiological modalities without clearly stated diagnosis. Cause of unexplained chronic abdominal pain was established in 56.4% and possibly found in 39.4% of diagnosed patients, which shows rather high diagnostic yield of CE for such indication.

INFLUENCE OF ORGANISM SUPPLY OF PROTEIN AND ESSENTIAL AMINO ACIDS ON SIMULATION OF ALLOXAN DIABETES

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Introduction

It is generally accepted that the mechanism of diabetes is a violation of the metabolism of carbohydrates and lipids. Therefore, the main direction of diet therapy directed at reducing food of the diet compounds containing carbohydrates and fats. According to our model, the metabolic relationship between the metabolism of proteins, fats and carbohydrates, we can assume that the mechanism disturbances in carbohydrate and fat metabolism play a big role protein exchange.

Study Aims

Assess the impact of the amount of protein in the diet and its qualitative composition and limited physical activity on carbohydrate and fat metabolism in the simulation of diabetes.

Methods

Diabetes simulated (by intraperitoneal injection alloxan in a dose of 150 mg/kg) on August rats, divided into four groups depending on protein content in the quantitative or qualitative dietary composition. In each group of animals was also carried out assessment of the effect of limiting motor activity and the impact of alloxan. As markers of carbohydrate and lipid metabolism was used glucose tolerance test, and the concentration of triglycerides in the blood.

Results

It is shown that deficiency of the protein or essential amino acids leads to an increase glucose level in blood from 4.1 to 4.7 and 5.1 mmol/L. The same dynamics marked also for triglyceride level, which increased by 64.9 and 48.6%, respectively. We note the synergism influence of protein deficiency with hypokinesia for glucose and lipids. With the introduction of alloxan glycosuria was more pronounced with a deficit of the protein or essential amino acids and amounted 32.1 and 42.5 mmol/L, (in the control group – 19.6 mmol/L). Increasing of protein in the diet led to decrease in the adverse effects of hypokinesia and of alloxan on carbohydrate and fat metabolism.

Conclusions

It was found that in the mechanism of the development of carbohydrate and fat metabolism disorders in diabetes plays important role in protein metabolism changes and it is necessary to consider this fact to develop methods for prevention and treatment of diabetes.

THE INFLUENCE OF THE INTESTINAL MICROFLORA AND ITS METABOLITES ON THE COURSE OF NON-ALCOHOLIC FATTY LIVER DISEASE

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Introduction

Among all chronic liver diseases non-alcoholic fatty disease (NAFD) is the most popular one. In pathogenesis of NAFD important role is played by the violation of the ratio between the intestinal microflora and its metabolites.

Study Aims

The study of the influence of the intestinal microflora and its metabolites on the course of NAFLD.

Methods

An examination of the patients, an assessment of the quality of life (SF-36), clinical and biochemical blood tests, Fibromaks test, bioimpendancemetry, an ultrasound of the liver, a quantification of the microbiota of the large intestine (in real-time [qRT-PCR]) and an analysis of the composition of blood metabolome were used for an inspection of 25 patients with NAFD. All the patients received a standard dose of "Hepaguard active" (Eurasian patent No.019268 from 28.02.14).

Results

As a result of blood metabolome analysis there were identified more than 70 ports: marginal carboxylic acids; nitriles, carboxylic acids, unsaturated carboxylic acid, succinic acid, urea, some amino acids, glycyrrhizinate, glycerides acids, various sugars, saharospirties, urea, uric acid, vitamins, etc. After the treatment there was an increase in the number of metabolites and their content in the blood. After the quantitative determination of representatives of major bacterial groups in feces by PCR the majority of patients had a microbial imbalance (dysbiosis of the large intestine), which is expressed in a substantial decrease in the proportion of *Bacteroides*. After therapy there was a significant increase in bacteroides with 11.3% ± 10,6 (mean ± SO) to 47.6% ± 28,8 of the total number of microorganisms ($p < 0.0001$), which demonstrates the ability of the drug to restore the disturbed microbial balance in the colon because of overweight. Thus, the increase in the number of bacteroids has not violated the balance of the representatives of the anaerobic microbiota of the intestine. It is important that the proportion of one of the most important representatives of *Firmicutes* butyrate-producing bacteria *Faecalibacterium prausnitzii* has increased (from 0.9% to 1.7%). The therapy all the patients have lost some weight and improved their quality of life.

Conclusions

"Hepaguard active" normalizes clinical and laboratory findings in NAFD, reduces excess weight, eliminates microbial imbalance in the large intestine, because of obesity and systemic metabolic disorders and improves the patient's quality of life.

Authors

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