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Allergy to cow's milk protein as a cause of functional diarrhea in toddlers

Andrew Nalyotov

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Introduction

The gastrointestinal symptoms of allergy to cow's milk protein (CMP) are caused by inflammation, dysmotility, or combination of these mechanisms. Functional diarrhea (FD) is defined by the daily painless recurrent passage of 3 or more large unformed stools for 4 or more weeks with onset in infancy or preschool years while child is not suffering from frequent stool. However FD may cause anxiety of the patient's parents, which further leads to uncontrolled use of various treatment methods. The reasons for the development of FD are not fully explored to date.

Study aims

To study the frequency of the allergy to CMP in toddlers with FD.

Methods

The study involved 12 toddlers with FD. The diagnosis of FD was based on the diagnostic criteria of the Rome consensus IV. Patients with iatrogenic (antibiotics, laxatives) and infectious FD were excluded.

Results

The formula feeding was begun in the first 6 months of life in 8 (66.7 ± 13.6 %) toddlers. Allergic changes of the skin (persistent rash, redness) were diagnosed in 6 (50.0 ± 4.4 %) patients. Persistent colic during first 6 months of life was seen in 5 (41.7 ± 14.2 %), severe regurgitation – in 6 (50.0 ± 4.4 %) patients. 3 (25.0 ± 12.5 %) toddlers had functional constipation. The level of specific IgE to CMP was increased in 5 (41.7 ± 14.2 %) patients. The diagnostic elimination trial (dairy-free) diet has shown efficiency during the first two weeks in 8 (66.7 ± 13.6 %) patients. While using dairy-free diet children with FD had normal stool frequency up to 1 time per day.

Conclusions

The allergy to CMP is an important etiologic factor of FD in toddlers. The diagnosis of allergy to CMP at first may be based on the anamnesis and conduct of the dairy-free diet. In the correction of the frequency of stool in children with FD, the primary way is the temporary dairy-free diet (up to one month), followed by evaluation of the form and frequency of the stool. The use of the dairy-free diet may be the only therapy in patients with allergy to CMP.

The efficiency of dexlansoprazole in the treatment of erosive esophagitis

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Introduction

Currently, erosive esophagitis is the actual problem of gastroenterology.

Study aims

To evaluate the efficiency of the treatment and maintenance of erosive reflux-esophagitis with the use of dexlansoprazole.

Methods

The study included 67 patients of the mean age 54.3 ± 16.4 years (45 men and 22 women) presenting with "acute" reflux in whom esophagogastroduodenoscopy revealed erosive esophagitis. The severity of erosive esophagitis was based on the Savary–Miller (S–M) classification. The patients were allocated to two groups. The study group was comprised of 34 patients treated with dexilant at a dose of 60 mg once daily regardless of the mealtime for 8 weeks (56 days) while the control group consisted of 55 patients given omeprazole at a dose of 20 mg twice daily before meal as the main treatment during the same period. Then the patients of the study group were given the maintenance treatment with dexilant at a dose of 30 mg once daily without regard to timing of food ingestion whereas the patients of the control group were treated with omeprazole at a dose of 20 mg once daily, 30 minutes before the meal. The duration of the maintenance therapy in both groups was 8 weeks (56 days).

Results

The heartburn practically disappeared within 56 days after the initiation of therapy in the patients of the study group as compared with those of the control group ($p < 0.05$) while the number of the patients complaining of eructation and regurgitation decreased to 8.8 % and 14.7 % respectively and was significantly lower than before the treatment ($p < 0.05$). Epithelization of the erosions and ulcer cicatrisation were documented in 79.4 % of the patients of the study group within 28 days after the onset of the treatment in comparison with the patients of the control group ($p < 0.05$). By the end of the basal therapy, 100 % of the patients underwent complete endoscopic remission. No cases of recurrent heartburn were documented.

Conclusions

The present study has demonstrated the efficiency and safety of dexilant therapy at a dose of 60 mg for the management of the patients presenting with the erosive form of gastrointestinal reflux disease (GERD).

Natuma Bactoflor 12+ at conducting anti-*Helicobacter pylori* therapy of *H. pylori*-induced diseases

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Introduction

Standard sequential therapy does not correspond to modern criteria of efficiency.

Study aims

To determine the efficiency of modified sequential therapy (MST) in combination with a synbiotic preparation *Natuma Bactoflor* 12+ (NB) in patients with *Helicobacter pylori*.

Methods

We conducted a multicentre study of a tailor-made protocol. In the 1st group (n = 57) 35 patients with *H. pylori*-induced chronic gastroduodenitis, 18 patients with peptic ulcer with localization of ulcers in the duodenum and 4 patients with peptic ulcer with localization of ulcers in the stomach were included. Patients of the 1st group received a 14-day MST (the first 7 days of proton pump inhibitor – rabeprasole (Hirabezol) 0.02 × 2 times a day 30–60 minutes before breakfast and supper + amoxicillin 1.0 × 2 times a day, following 7 days rabeprazole 0.02 × 2 times a day 30–60 minutes before breakfast and supper + clarithromycin, and tinidazole, each 0.5 × 2 times a day). Additionally, patients of the 1st group from day 1 of treatment took NB 1 sachet once a day for 24 days. The specificity of this drug is its ingredients: *Lactobacillus acidophilus* LA 14 – 5.0×10^9 CFU, *Bifidobacterium lactis* HN 019 – 1.0×10^9 CFU, zinc oxide, vitamin B6, lactoferrin, fructose, maltodextrin. Patients in the control group (n = 31) were similar to MPT patients of the 1st group, but without the intake of the synbiotic NB.

Results

In the 1st group who used NB on the background of the MST eradication of *Helicobacter pylori* was observed in 53 of 57 patients (ITT) – 93.0 %, and 53 of 55 (PP) of 96 %. In the 2nd group during conducting of SPT without NB eradication of *Helicobacter pylori* in 24 of the 31 patients included in the study of 77.4 % (ITT) and in 24 of the 28 who completed the study, 85.7 % (PP). Adding NB to the regimen of MST increased the percentage of eradication of *Helicobacter pylori* in 15.6 % (ITT) and 10.3 % (PP).

Conclusions

The application of *Natuma Bactoflor* 12+ on the background of modified sequential *Helicobacter pylori* therapy, increases the chance of eradication of *Helicobacter pylori*.

Modified hybrid therapy of *Helicobacter pylori*

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Introduction

Existing anti-*Helicobacter pylori* regimes do not reach optimum values.

Study aims

Evaluation of a modified version of the hybrid therapy of *Helicobacter pylori*, as standard hybrid therapy did not reach the required value of *Helicobacter pylori* eradication that is > 90–95 %.

Methods

We conducted an open multicentre study on specially made protocol, in which patients with *Helicobacter pylori* – associated diseases (chronic gastritis n = 32, chronic gastroduodenitis n = 35, peptic ulcer with localization of ulcers in the duodenum – n = 17, or in the stomach – n = 11) received a modified hybrid tailored therapy: PPI rabeprazole (Pariet®) 10 mg × 4 times a day, amoxicillin 0.5 × 4 times a day for 14 days, and 8 day treatment with clarithromycin 0.5 + tinidazole 0.5 × 2 times a day for 7 days. All patients on the background of modified hybrid therapy took floralact 5.0 2 times a day for 28 days. Eradication of *Helicobacter pylori* was confirmed only in case of negative results of all three conducted tests (rapid urease test during endoscopy (Biochit), histologically and conduction of monoclonal *Helicobacter pylori* antigen test in faeces. Not earlier than 4 weeks after the cessation of the anti-*Helicobacter pylori* regime. The choice of the PPI rabeprazole was based on data of population structure of genetic polymorphism of CYP2C19 in Saint-Petersburg. Of the surveyed 921 patients 34.8 % patients with a rapid metabolism and 37.1 % with ultrarapid metabolism, a total of 71.9 % with extensive metabolism and is consistent with Maastricht Consensus (statement 10, treatment).

Results

Eradication of *Helicobacter pylori* was observed in 92 of 95 patients included in the study – 97 % and in 92 of the 93 patients who completed the treatment, 99 %. 31 of 32 patients with chronic gastritis – 97 %; 34 out of 35 patients with chronic gastroduodenitis – 97 %; 17 of 17 patients with peptic ulcer with localization of the defect in duodenum – 100 %, in 10 out of 11 patients with peptic ulcer with localization of the defect in the stomach is 91 %.

Conclusions

Modified hybrid therapy of *Helicobacter pylori* due to optimized acid suppression and using amoxicillin 4 times a day significantly increases the performance of the eradication of *Helicobacter pylori*.

The state of the colon microbiocenosis in children with chronic colostasis

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Introduction

Colostasis is increasingly being recognized both among children and adults. In a number of works parallel with other diagnostic clinical and laboratory methods of diagnosis of the patients with colostasis and for determination of the need in treatment there is shown microbiological diagnosis, that is, determination of the intestinal dysbacteriosis.

Study aims

Analysis of microbiocenosis results of the colon intestine in children with chronic colostasis.

Methods

We investigated and studied the results of the state of intestinal microflora in 71 children with chronic colostasis. The microbiological study of faecal masses was carried out using a bacterioscopic and bacteriological methods. The identification of genera or species of microorganisms was carried out according to the Bergey's Manual.

Results

Dysbacteriosis of the first degree was diagnosed in patients with insignificant changes of the aerobic-facultative flora (*E. coli* in the first turn) and absence of changes of the lactoflora and bifidoflora. The quantitative and qualitative changes of the colon bacilli and other opportunistic bacteria on the background of insignificant quantitative reduction (by one-two stages) of bifidoflora and lactoflora were attributed to the dysbacteriosis of the 2nd degree. The 3rd degree of dysbacteriosis is characterized by significant reduction (to 105) of bifidobacteria in combination with reduction of lactoflora and acute changes of the level of normal colon bacilli.

In patients with chronic colostasis of compensated stage (22 pts.) diagnoses were distributed as follows: dysbacteriosis of the 1st degree – 10 (45.5 %) pts.; dysbacteriosis of the 2nd degree – 12 (54.5 %) pts. In patients with chronic colostasis of sub-compensated stage (25 pts.) diagnoses were distributed as follows: dysbacteriosis of the 1st degree – 2 (8.0 %) pts.; dysbacteriosis of the 2nd degree – 10 (40.0 %) pts. and of the 3rd degree – 13 (52 %) pts. In patients with decompensated stage (24 pts.): dysbacteriosis of the 2nd degree – 7 (29.2 %) pts. and of the 3rd degree – 17 (70.8 %) pts.

Conclusions

In all studied patients with chronic colostasis there was identified intestinal dysbacteriosis of the 1st degree in 12 (16.9 %) children, of the 2nd degree – in 29 (40.8 %) and of the 3rd degree – in 30 (42.2 %) children. The dysbacteriosis of the 3rd degree developed mostly often in patients at the stage of decompensation (70.8 %).

Features of the immunological state of children with chronic colostasis

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Introduction

Delayed correction of constipation results in various complications and rough changes in microbe landscape (disbacteriosis), the activity of intestine as organ of digestion and immunity is disturbed.

Study aims

Study the state of changes in immunological parameters in children with chronic colostasis.

Methods

Investigations of immunologic status was performed on 30 children with chronic constipations induced by one or other pathology of the colon. Evaluation of the state of cellular immunity was performed by expression of the superficial antigen of lymphocytes in the reaction of immunofluorescence according to application of instruction with use of monoclonal antibodies of series LT to differential antigens of human leucocytes: CD3 (T-lymphocyte marker), CD4 (marker of helpers / inductors), CD8 (marker of suppressor / cytotoxic T-lymphocytes), CD16 (marker of natural killers), CD25 (α-chain of interleukine-2 receptor), CD45 RA (marker of native T- and B-lymphocytes), CD95 (FAS/APO-1 antigen, causing apoptosis). Immunoregulatory index was calculated by the ratio of CD4+ and CD8+ cells. The parameters of humoral immunity were studied with method of radial immunodiffusion with analysis of the levels of immunoglobulins G, A, M in the peripheral blood with use of monospecific serums to various classes of immunoglobulins.

Results

In children of the young age with chronic colostasis the intoxication on the background of the immaturity of immune system is accompanied by marked T-cellular immunodeficiency (decrease in CD3+, CD4+, CD8+ lymphocytes), without significant changes of the functional activity of B-immunity, neutrophilia, activation of natural killer cells (NKC). Conservative therapy in children with chronic colostasis provided improvement of T-cellular immunity with restoration of CD4+ helper / inductor cells with tendency to positive changes of humoral and monocytic-macrophagal chains of immunity at the short-term period after onset of treatment. Analysis of the immune status, performed 5–10 days after surgery, revealed immunosuppression that is explained by surgical postoperative stress, using of antibiotics. As it is known, antibiotics inhibit immune system.

Conclusions

In the children with chronic colostasis the immune system is differed by marked cellular and humoral deficit on the background of immaturity of immune system, thus these patients require inclusion of immunomodulation into the complex of treatment.

Use of double balloon enteroscopy in diagnostics and miniinvasive treatment of structures of pancreatojejuno- and hepaticojejunoanastomoses

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Introduction

In the past 10 years, a number of reports have been published about the endoscopy of the small intestine with its altered anatomy after reconstructive procedures on the bile duct and pancreas.

Study aims

To evaluate the results of a double balloon endoscopic (DBE) examination and minimally invasive interventions of the hepaticojejunoanastomosis (HJA) and pancreatojejunoanastomoses (PJA) on the Roux loop after reconstructive procedures on the bile ducts and the pancreas.

Methods

In our clinic from year 2010 to 2017 67 patients with a suspected pathology in the PJA (24 patients) and strictures of the HJA (43 patients) were examined by a DBE. We began to use complex minimally invasive Rendez-voux methods in cases with strictures of the HJA and intrahepatic cholangiolithiasis. Minimally invasive interventions were performed in 18 of 21 (85.7 %) patients.

Results

We were able to examine the zone of HJA in 22 (63.6 %) patients. In 10 cases the anastomoses functioned adequately. In 12 out of 22 examinations, the stricture of the HJA was confirmed (54.5 %). Among them, 3 reoperations were performed, 11 – minimally invasive interventions (laser recanalization of strictures – 4, lithoextraction – 3, laser lithotripsy with lithoextraction – 1, in one of these observations lithoextraction was performed first and laser vaporization twice). A Rendez-voux technique was used in 1 patient with intrahepatic cholangiolithiasis. The PJA zone was examined in 14 out of 24 observations (58.3 %). In 7 out of 14 observations the anastomoses functioned adequately. In the remaining 7 cases there were minimally invasive DBE procedures: laser and mechanical lithotripsy – 6, laser vaporization of the cholangiostomy stricture – 1. The diagnostic efficiency of the examination of HJA and PJA was 53.7 %, the therapeutic efficiency was 85.7 %.

Conclusions

1. With the resumption of the pain syndrome after the traditional operation of the pancreas, it is advisable to include in the survey report a DBE examination of the Roux loop and the PJA.
2. With stricture of HJA complicated by intrahepatic cholangiolithiasis, it is necessary to use Rendez-voux technique.

Multidrug-resistant bacteria in hospitalized cirrhotic patients with urinary tract infection

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Introduction

Bacterial infections are among the most important complications of end-stage liver disease. Recent investigations suggest that the prevalence of infections caused by multidrug-resistant bacteria (MDR) is increasing in cases of cirrhosis. Urinary tract infections (UTI) in cirrhosis are usually asymptomatic.

Study aims

We aimed to assess the rate of MDR-bacteria in hospitalized cirrhotic patients with UTI.

Methods

This was a retrospective study of 151 patients with cirrhosis in Department of Gastroenterology (between 2009 and 2011). Cirrhosis was clinically and/or histologically confirmed. The types of infections were defined according to conventional criteria. MDR-bacteria were defined as strains resistant to at least three of the main antibiotic groups including beta-lactam antibiotics.

Results

In our study 151 patients with decompensated cirrhosis were enrolled, 67 patients (44.4 %; 95 % CI: 36.3–52.7 %) had various infections, from which urinary tract infections (UTI, n = 31), pneumonia (n = 24) and spontaneous bacterial peritonitis (SBP, n = 8) were the most frequent. Characteristics of the patients with infections were: median age was 52 (IQR 41–59) years; male 39 %; median Child-Pugh score 10 (IQR 9–11). Ethiology of the cirrhosis was mainly alcohol (55 %). The culture-positive samples were found in 33 cases from 27 patients. Gram-positive cocci (73 %) were the most common causative bacteria in nosocomial infections such as bacteremia / sepsis and SBP. UTI were caused by *Enterobacteriaceae*'s family (75 %) mainly. From 16 uropathogens 5 were considered to be MDR-strains. Isolated MDR-uropathogens were the following: *E. coli* (n = 2), *P. agglomerans*, Acinetobacter spp., *E. faecalis*. On background of UTI caused by MDR-bacteria were diagnosed SBP (n = 1) caused by *S. aureus* and bacteremia (n = 3) caused by *S. aureus*, *S. epidermidis*, *E. coli* during current hospitalization. The rate of MDR-bacteria was 31.3 % (95 % CI: 11.0–58.7 %). At the same time among bacteria which caused UTI susceptibility to quinolones was 93 %.

Conclusions

We identified a high rate of MDR-bacteria in UTI (31.3 % (95 % CI: 11.0–58.7 %) in our unit. Cases of MDR-UTI were combined with other severe bacterial complications (SBP, bacteremia). The current management of infections in cirrhotic patients' group should be corrected according to the results of microbiological monitoring in local unit.

Assessment of malnutrition and its association with other predictive factors in Latvia

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Introduction

Various studies from different countries have shown that the prevalence of malnutrition varies substantially in hospitalized patients, ranging between 10 % and 50 %, however, the prevalence of malnutrition at secondary-care hospitals has never been thoroughly assessed in Latvia. Disease-related malnutrition in hospitalized patients is usually associated with old age, longer hospitalization and chronic conditions. Association of malnutrition with predictive risk factors may vary among different patient populations.

Study aims

Aim of this study was to assess the prevalence of malnutrition at secondary-care hospitals in Latvia using the Nutritional Risk Assessment (NRS-2002) tool, as well as associating malnutrition with various potentially predictable factors.

Methods

The study was conducted at the Talsi clinic of the Northern Kurzeme Regional Hospital from May till June 2016. All patients were weighed, their height was measured, and they were assessed on the basis of NRS-2002 by an experienced physician (E. P. B.) within 24 hours of admission. The diagnosis of malnutrition was made if the NRS-2002 score was ≥ 3. Data related to age, gender, length of hospital stay (LOS) and health conditions was collected. In total, 223 patients were included in the study. Age and LOS are shown as median (interquartile range). The association of malnutrition with age, LOS and various existing pathologies was assessed on the basis of binary logistic regression. The local ethics committee approved the study protocol.

Results

Malnutrition was identified in 28.7 % (64/223) of hospitalized patients. 42.2 % (94/223) were male. Patients with malnutrition were older 69 (55–78) *vs.* 78.5 (70.25–85) years, p = 0.001 and had longer LOS 5 (3–8) *vs.* 7 (5.25–10) days, p = 0.012. During their hospital stay, six malnourished patients died (p = 0.001). Malnutrition was significantly associated with oncological disease (OR = 5.0), pulmonary disease (OR = 3.2) and kidney disease (OR = 3.2).

Conclusions

Malnutrition is prevalent in secondary-care hospitals in Latvia, mostly affecting elderly patients, as well as patients with oncological, lung and kidney diseases. Malnourished patients require longer hospital stays and have higher rates of mortality. The NRS-2002 tool may be used in secondary-care hospitals in Latvia to diagnose malnutrition.

Confocal laser endomicroscopy in diagnostics of pediatric gastric and duodenal diseases

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Study aims

To analyse the value of confocal laser endomicroscopy in diagnostics of gastric and duodenal mucosa changes in children.

Methods

In the current study a total of 116 children aged from 3 to 18 years old underwent conventional endoscopy with confocal laser endomicroscopy supplemented with mucosal biopsy followed by traditional histology in the period from year 2011 to 2014. To determine the prognostic value of the of probe based CLE in the evaluation of normal and pathological changes of the gastric and duodenal mucosa a comparison of results of optical biopsy with the data obtained during the standard histological examination were performed.

Results

After results of probe-based CLE and traditional histology were compared optical biopsy showed 83.7 % sensitivity and 87.5 % specificity to gastritis with Spearmen correlation 0.67 (p = 0.001); 86.7 % sensitivity and 81.8 % specificity to duodenitis with Spearmen correlation 0.67 (p = 0.001).

Conclusions

Confocal endomicroscopy may become one of the leading methods in pediatric gastroenterology since it allows the endoscopists to inspect the mucosa at the cellular level during the endoscopic procedure and can help to eliminate the mismatch between histological and endoscopic diagnosis.

The impact of pacient preparation process on the quality of colonoscopy

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Introduction

In order to perform an effective colonoscopy, it is necessary to properly prepare by obtaining an adequate intestinal cleanness. Quality criteria for colonoscopy as adequate bowel preparation, cecum intubation, adenoma diagnostics allows to evaluate the performance of examinations.

Study aims

To investigate the relationship between patient's socio-demographic factors, awareness of the preparation process, the pre-colonoscopy preparation methods, their regimen to the results on the Boston scale (BBPS).

Methods

Collect data from literature on the quality of colonoscopy depending on the preparation of the intestinal purity, collect the PSKUS colonoscopy data from February to July 7, 2017, conduct a patient survey, analyse the obtained results.

Results

Adequate intestinal purity was achieved in 310 (65 %) cases, incomplete – in 82 (17 %), of which 29 (6 %) was the left colon. In 24 % of the cases, inpatients were unsatisfactorily prepared (BBPS < 3 points). Out of 100 phone-interviews it was learned that 48 were preparing for colonoscopy with Fortran; 7 patients additionally used enema. Of 100 patients, 93 followed a one-day plan. In the case of first-time colonoscopy, the average BBPS score was 5.29 points, repeated – 5.83 points. There was no statistically reliable relationship between the time between the acquisition of information and the colonoscopy, the body mass index (BMI) and inadequate purity of the intestine before colonoscopy ($p > 0.05$). Most of the information on the preparatory process (82 cases) was obtained from written sources. 56 patients thought that the information received was sufficient.

Conclusions

35 % of colonoscopies intestinal purity is inadequate, as the patient is poorly prepared for examination, especially in the left colon. Inpatients and those who have chronic illnesses or are undergoing a colonoscopy for the first time, are more likely to be poorly prepared for it. The BBPS does not directly relate to the patient's education level or BMI. Additionally, application of enema and when information is provided on intestinal preparation process, is not relevant as it does not affect the evaluation of intestinal purity (BBPS). Fortran is the most commonly used intestinal cleanser before colonoscopy at PSKUS. Most patients were not prepared by implementing European guidelines for bowel-cleansing and additional work is needed to uncover reasons for it. Patients require more explanation and written information, as only 56/100 found the received support adequate.

Clinical characteristics of reflux esophagitis in patients with obstructive sleep apnea syndrome

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Introduction

Literature data suggest that at least 20–40 % of adults all over the world suffer from gastroesophageal reflux disease (GERD). Actually this percentage seems to be higher due to the abundance of clinical forms of the disease including asymptomatic form. Patients who have such clinical forms of GERD consult the doctor more rarely and cannot be subjected to appropriate investigation and treatment in time. Patients with GERD seen in primary care practices have comorbid conditions. Obstructive sleep apnea (OSA) seems to be one of such conditions. Nowadays the prevalence of gastroesophageal disturbances, relationships between GERD and OSA are not researched.

Study aims

The aim of study was to estimate the characteristics of reflux esophagitis in patients with OSA.

Methods

Sixty patients with reflux esophagitis have been examined at Grodno city hospital № 2, Belarus. The average age was about 47 (37; 56) years. Patients were divided into 3 groups: the 1st group – patients with esophagitis (n = 24), the 2nd group – patients with esophagitis and mild OSA (n = 21), the 3rd group – patients with esophagitis and moderate OSA (n = 15). The expressiveness of symptoms of gastrointestinal tract involvement was estimated with the help of gastroesophageal reflux disease questionnaire (GerdQ). For visualization of upper gastrointestinal canal esophagogastroduodenoscopy (EGD) was used. Also morphological examination was provided by means of biopsy of the lower third of the esophagus. For analysing data nonparametric statistical methods were used.

Results

In the 3rd group of patients in comparison with the 1st group statistically significant lower value of points of GerdQ was revealed (6 (4; 6) and 7 (6; 8.5) respectively) ($p = 0.005$). In the 3rd group of patients in comparison with the 2nd group statistically significant lower value of GerdQ points was obtained (6 (4; 6) and 7 (6; 8) respectively) ($p = 0.007$).

Conclusions

The results of the research suggest about difficulties in diagnostic of reflux esophagitis in patients with moderate OSA. Lower value of symptom expressiveness allows us to attribute these patients to the risk group of Barrett's esophagus and esophageal adenocarcinoma development. It requires recommending EGD for patients with OSA without reference to the severity of GERD symptoms expressiveness.

The state of autonomic nervous system in patients with gastroesophageal reflux disease associated with obstructive sleep apnea syndrome

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Introduction

Gastroesophageal reflux disease (GERD) is a very common condition, which affects 20–40 % of adults. Nowadays obstructive sleep apnea syndrome (OSAS) is a topical problem of medicine too, which affects 5–7 % of adults after 30 years of age. These diseases are interrelated because of common risk factors and mechanisms of development. Some aspects of pathogenesis, which are dedicated to the state of vegetative nervous system in patients with GERD and OSAS are not researched.

Study aims

The aim of study was to estimate the state of autonomic nervous system in patients with GERD associated with OSAS.

Methods

Eighty two patients have been examined, average age was 46.8 ± 9.7 years. Patients were divided into 3 groups: 1st group – patients with GERD (n = 21), 2nd group – patients with OSAS (n = 30), 3rd group – patients with GERD and OSAS (n = 31). Patients were subjected to registration of ECG during 5 minutes with evaluation of time and spectral indices of heart rate variability (HRV).

Results

In comparison with 1st group, patients from 2nd and 3rd group have statistically significant lower value of total power of neurohumoral spectrum (TP 2245 (1022; 4029); 1249 (878; 2166); 1442 (600; 1965), $p < 0.05$). There is a higher value of sympathetic nervous system in patients of the 1st and 3rd groups (LF/HF 2.21 (0.76; 3.24); 2.32 (1.10; 4.94)). Statistically significant lower values in indices of low frequency and high frequency components were obtained in patients of the 2nd and 3rd groups in comparison with 1st group (LF 347.5 (241; 564); 391 (119; 673); 464 (325; 886), $p < 0.05$; HF 199.5 (99.8; 442); 168 (61.4; 323); 287 (115; 1173), $p < 0.05$). All patients demonstrated a high value of very low frequency (% VLF 44.4 (36.4; 52.1); 54.45 (47.8; 62.7); 56.7 (43.2; 70.5), $p < 0.05$), which indicate increase of level of low humoral regulation. Decrease of centralization index confirms this fact (IC 1.3 (1.0; 1.8); 0.8 (0.6; 1.1); 0.8 (0.4; 1.3), $p < 0.05$).

Conclusions

The obtained data show, that OSAS influences and aggravates indices of HRV in patient with GERD. The results of this study require further investigations to elaborate new more effective methods of treatment of patients with GERD and OSAS.

Vitamin D deficiency in children with cystic fibrosis

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Introduction

Vitamin D insufficiency is a widespread phenomenon with adverse effects on human health and also including patients with cystic fibrosis (CF). The reasons for low concentration of vitamin D in an organism are considered to be the following: the decrease in vitamin D absorption in intestines as a result of pancreatic insufficiency, disorder in vitamin D hydroxylation in liver, the decrease in the level of vitamin D-binding protein, the avoidance of staying in the sun because of photosensitivity with certain antibiotics, the lack of adipose tissue. All of the above mentioned factors are typical for CF. Lung function test is used as an early objective criterion of effectiveness evaluation of CF treatment.

Study aims

To evaluate the provision of vitamin D at different age periods and in different seasons in the CF patients. To evaluate the influence of vitamin D deficiency on lung function.

Methods

One-hundred-fifteen children and adolescents between the ages of 0 and 18 who were on treatment in Russian CF Center over 2014 to 2016 were examined. The children were divided into groups: 4 were formed depending on age, 4 were formed depending on seasons. Spirometry was performed in 43 CF children with vitamin D insufficiency at the age of 6–18. The concentration 25(OH)D in blood plasma 20–29 ng/ml was considered to be vitamin D insufficiency, deficiency – 10–20 ng/ml, significant deficiency < 10 ng/ml. FVC > 80 % and FEV > 80 % were considered as a normal spirometry.

Results

The normal levels of vitamin D was observed in 41 (35.7 %) of children with CF, vitamin D deficiency was found in 36 (31.3 %) patients, vitamin D deficiency in 32 (27.8 %) examined patients, pronounced deficiency in 6 (5.2 %) children. FVC > 80 % was found in 32 children, the average concentration of vitamin D 21.95 ng/ml, < 80 % was found in 11 children concentration of vitamin D 14.30 ng/ml.

Conclusions

In the examined groups about ⅔ of the children with CF are characterized by insufficiency or deficiency of vitamin D, especially in autumn and winter months. The direct dependence of the decrease in the indicators of spirometry on the degree of vitamin D deficiency was discovered: the lower vitamin-D levels, the lower the lung function.

Homeostasis of patients with obesity and pancreatopathy during the low-calories diet

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Introduction

Metabolic disorders in patients with obesity and pancreatopathy are the source to pathogenic effect on homeostasis of whole organism. Management of it includes many interventions that are based on dietary advice, exercise and pharmacological approach. But little is known about the effect of restricted diet on the lipid peroxidation as initiation of chronic metabolic inflammation related to pancreatic enzyme activity. Therefore, it is important to plan an effective strategy to this pathology.

Study aims

Aim of this study was detection of antioxidant enzymes activity, lipid peroxidation intensity and functions of pancreas during the course of low-calories diet (registrated "cascade dietotherapy").

Methods

We observed 23 patients: females 47–65 y.o. before treatment and 9 days after. There was uptaking standard no protein, no salt, less than 300Kcal/day in the Centre of Dietology. Diagnosis of obesity and pancreatopathya was confirmed by the standard clinical and laboratory methods and ultrasonoscopy. Malondyaldehyde (MDA) as lipoperoxides marker, catalase in erythrocytes (antioxidant enzymes, pancreatic lipase and amount of triacylglycerols (TG)) was tested in blood.

Results

Our results are following: MDA in the patients before the course was above the norm (3.57 ± 0.04 nmol/ml) and after – 3.30 nmol/ml. Catalase stood in the normal ranges – 240 ± 18 k/gHb, after 9 days was decreased to 193 ± 17 k/gHb; pancreatic lipase in plasma before course was in normal interval 28.1 ± 0.07 U/L, but after treatment it declined to 38 %. TG: 2.8 ± 0.04 mmol/l was reduced to 1.3 ± 0.01 mmol/l.

Conclusions

These data show positive dynamic pathological metabolic signs of homeostasis in patients with pancreatopathy and obesity, restness of pancreas secretory activity can be characterized as physiological method for treatment of this pathology.

Evaluation of diet and enzyme therapy of children with cystic fibrosis with the help of the computer program

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Introduction

Diet and enzyme replacement therapy are the basis of adequate rates of the child's physical development. An important component of complex therapy of CF is the optimization of enzyme therapy, including analysis of the calculation of enzyme preparations during the day in basic and additional meals taking into account the actual fat intake.

Study aims

Objective of the study was to assess the actual nutrition and adequacy of enzyme therapy in children with cystic fibrosis using the developed computer program "Monitoring of nutritional status, enzyme therapy, diet in cystic fibrosis."

Methods

A multicentre, one-stage study was conducted at the Russian Cystic Fibrosis Centre. The analysis of the data of 55 patients aged from 1 to 17 years (the age of the youngest – 1 year 1 month, the senior – 16 years 9 months), both sexes. The distribution of enzymes was evaluated before and after application of the program based on the results of 42 one-day menu of actual nutrition.

Results

When assessing energy requirements for personalized norms, it was found that in the group of children from 1 to 3 years, the energy value of the ration was 5 % higher than the estimated need, in children from 4 to 6 years, there was an energy deficit of up to 8 %, and 7–18 years – increased to 20 %. Deficiency of the energy value of the diet increased with age and was noted in 15 % of children aged 4–6 years and 42 % 7–18 years. The total evaluation of all meals and the adequacy of the enzyme dose, taking into account the actual fat content in food, showed that only in 5 % of cases the empirical method and the method of calculating enzymes, using the program, coincided.

Conclusions

In all groups of children with cystic fibrosis, a high variability in the energy value of the diet was noted in comparison with the estimated energy demand, while the variability increased with age, as did the calorie deficit in the diet. The application of the computer program helps to increase the effectiveness of diet therapy and the precise calculation of enzymes.

The clinical features of cholelithiasis associated with metabolic syndrome

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Introduction

It is well known that the course of many somatic diseases is aggravated in the presence of metabolic syndrome, and also with the increase in the number of its components. However, in the modern literature there is no information about the peculiarities of the clinical course of cholelithiasis against the background of the metabolic syndrome.

Study aims

To study the clinical features of cholelithiasis in patients with metabolic syndrome.

Methods

Eighty three patients were included in our study, of which the main group consisted of 54 patients with cholelithiasis in combination with metabolic syndrome, including 32 women and 22 men aged 36 to 65 years. The control group consisted of 29 persons with only cholelithiasis, without metabolic syndrome, comparable in sex and age with patients of the main group. All patients had a thorough collection of complaints and anamnesis of the disease and also an analysis of outpatient cards. To assess the statistical significance of the differences between independent groups, the Pearson Chi-square test (χ^2) was used in the comparison of categorical variables. The results were considered statistically significant at $p < 0.05$.

Results

When assessing clinical manifestations, it was noted that the cholelithiasis associated with metabolic syndrome was statistically significantly more likely to be accompanied by a bitter taste sensation in the mouth – 70.4 % of cases compared to 31 % in the control group ($\chi^2 = 11.89$, $p = 0.0006$); symptom severity or pain in the right upper quadrant – 68.5 % versus 24.1 %, respectively ($\chi^2 = 14.92$, $p = 0.0001$). Attention was also drawn to the fact that in patients with cholelithiasis without metabolic syndrome significantly more often than in the patients of the main group, the disease was asymptomatic and was diagnosed accidentally with planned follow-up ($\chi^2 = 9.16$, $p = 0.003$). There were no statistically significant differences in the presence of symptoms such as decreased appetite, nausea, fatty food intolerance, stool disorders, swelling along the bowel.

Conclusions

In patients with cholelithiasis associated with metabolic syndrome, a dyspeptic form of the disease is more common, manifested by complaints of bitterness in the mouth and discomfort / heaviness in the right upper quadrant.

Liver involvement in various pathologies of fatal HIV infected patients in Latvia

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Introduction

During last 20 years liver disease in HIV/AIDS patients is changed due to antiretroviral therapy, medication against tuberculosis, alcohol misuse and other agents (M. Puoti *et al*., 2009; J. Price, C. Thio, 2010; M., G. Sture *et al*., 2014). Liver is between the three more common affected organs in these persons (D. Salmon-Ceron *et al*., 2005; S. Bhagani, 2015; P. Puri *et al*., 2017).

Study aims

Aim of the study was to evaluate the liver involvement in fatal HIV/AIDS cases in Latvia in the years 2010–2016.

Methods

We have done retrospective review of the HIV/AIDS patient medical autopsy case files and histological slides at Rīga East University hospital, Pathology center. Specimens were stained with hematoxylin / eosin, Masson Tri Chrome, some immunohistochemical reactions. All statistical data was processed in IBM SPSS Statistics.

Results

We have analyzed 455 cases. Ratio ♂: ♀ was 2.4 : 1. Mean age in analyzed patients was 40 years (± 9 SD, range 22–68). Conditions leading to death were opportunistic infections (OI) – 28 %, TB – 23 %, wasting syndrome complicated by nonspecific pneumonia and sepsis or HIV/AIDS unrelated conditions – 27 %, malignancies – 11 % (B large cell lymphoma, primary and secondary cancers, Kaposi sarcoma) and end stage liver disease – 11 %. Liver was affected in 379 cases (83.3 %). The main causes of chronic liver disease in analyzed group were: HCV (n = 137) but combination of HCV with hepatotoxic liver were in 38 cases, HCV/HBV – 9, but HCV/HBV/toxic changes – 8 cases, only HBV – 4 and its combination with hepatotoxicity – 1 case, but only hepatotoxic reactions were diagnosed in 14 persons. Besides liver was affected by opportunistic infections in 49 individuals, TBC-41, MAC-6, fungal sepsis – 2, steatosis – 42. Three primary hepatocellular cancer cases were diagnosed after viral hepatitis and 25 secondary malignancies were found in liver. In 44 patients had progression to liver cirrhosis and 93 % of them had portal hypertension.

Conclusions

Advanced liver disease of HIV/AIDS cases during years 2010–2016 was due to overlapping disseminated opportunistic or nonspecific infections, tuberculosis, steatosis, malignancy and liver cirrhosis. Hepatotoxicity with necrotic and degenerative changes of hepatocytes are sequels of various co-infections, drugs, alcohol and besides by other concomitant pathologies of these patients.

Oat non-starch polysaccharides increases production of organic and short chain fatty acids by *Bacillus licheniformis* and *Bacteroides ovatus*

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Introduction

The two major cell wall polysaccharides of oats are heteroxylans and (1.3; 1.4)-β-D-glucans. The health benefits of oats are related mostly to its β-glucan content and due to its capacity of generating highly viscous solutions in the proximal gut, however knowledge of the bacterial fermentation properties of oat non-starch polysaccharides (NSP) is limited. Thus, more studies are needed to recognize oat NSP prebiotic effects, production of short chain fatty acids (SCFA) and organic acids (OA) by less studied microorganisms with probiotic potential.

Study aims

To determine the ability to ferment oat NSP by *B. licheniformis* and *B. ovatus in vitro*.

Methods

Bacterial fermentation of oat carbohydrates was tested in a complex growth medium where β-glucan was isolated from oats with purity 25 % and the same substrate without β-glucan (β-glucan was degraded enzymatically) were used as carbon sources for bacterial growth. Both substrates did not contain starch. The SCFA and OA produced by *B. licheniformis* and *B. ovatus* were analyzed by Liquid chromatography time-of-flight mass spectrometry (LC-TOF-MS) analytical method. Degradation of β-glucan viscosity was measured by a digital rotational viscometer (Thermo Scientific 7 Plus).

Results

B. licheniformis degraded the high viscosity of the solution containing β-glucan to the lower point. Both studied oat fractions, containing β-glucan and β-glucan free, are fermented by *B. licheniformis* that produce lactic and succinic acids, but have no potential to produce propionic and butyric acids. However after *B. ovatus* was added to the growth medium contained *B. licheniforms*, butyric and propionic acids were obtained. The SCFA produced by *B. ovatus* increases over a prolonged 96 hours of fermentation of both studied oat substrates, it can be advantage, because some probiotic bacteria, like *L. lactis* have a short survival time (~ 24 hours) in the human gastrointestinal tract, leading to reduced time of action. Because *B. licheniformis* is a lactic and succinic acid producer, it can be involved in butyrate synthesis through the butyrogenic bacterial cross-feeding, as well using succinate and lactate in propionate synthesis through succinate or acrylate synthesis pathways.

Conclusions

The results of this study show that oat-based food products can have a beneficial prebiotic effect and enhance production of SCFA and OA by less studied microorganisms with probiotic potential.

Efficiency of biological therapy in patients with inflammatory bowel diseases

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Introduction

Inflammatory bowel diseases (IBD) are chronic autoimmune diseases mostly affecting young patients. The use of biological therapy can promote the achievement of early remission in patients with IBD.

Study aims

Aim of our study was to investigate the clinical efficacy of using biological therapy in patients with moderate and severe course of IBD.

Methods

The study included 54 patients with IBD treated by biologic therapy. Among 54 patients ulcerative colitis (UC) was found in 29 (54 %) (14 male, 15 female), Crohn's disease (CD) – 25 (46 %) (12 male, 13 female). The average age of the patients was 32.9 ± 2.8 years. Clinical features of the patients were analysed before beginning of biological therapy. Patients with moderate severity IBD were 35 (65 %), severe – 19 (35 %). Extraintestinal manifestations of the disease were found in 32 (59 %) patients, complications in 17 (31 %) patients.

Results

All patients had following types of biological therapy: *infliximab* – 41 (76 %) patients, *adalimumab* – 9 (17 %), *certolizumab pegol* – 4 (7 %). Indications for treatment with biological therapy were: severity of IBD – 28 (52 %), steroid-dependence – 14 (26 %), steroid resistance – 6 (11 %), intolerance / ineffectiveness of immunosuppressants – 6 (11 %). 47 (87 %) patients achieved remission of IBD after the induction of biological treatment. Therapy was not effective in 5 (9 %) patients who were on *infliximab*, one (2 %) on *certolizumab* and one (2 %) on *adalimumab*. Due to the ineffectiveness of treatment it was stopped. Two patients with primary inefficiency of *infliximab* were switch on *adalimumab* and achieved remission. 18 (38 %) of the 47 patients with an effective biological therapy continue to receive it. 19 (40 %) patients had exacerbation of the disease during 6–12 months after the abolition of biologic therapy, 10 (22 %) people continue to keep remission.

Conclusions

The use of biological therapy allows to achieve clinical remission in patients with moderate and severe course of IBD, including the ineffectiveness of steroid and immunosuppressive therapy. Primary or secondary ineffectiveness of biological therapy was observed in 13 % of cases. Continuous course of biological therapy is effective as an anti-relapse treatment and the abolition of the biological therapy leads to relapse of the disease.

Quality of life and mood disorders of patients with inflammatory bowel disease and irritable bowel syndrome

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Introduction

Patients in remission of inflammatory bowel disease (IBD) have similar clinical symptoms with patients with irritable bowel syndrome (IBS), but patients with these diseases can have different quality of life (QoL) and psychological condition that affects the course of the disease.

Study aims

The aim of our study was to identify the quality of life and psychological features of patients in the remission of IBD and patients with IBS.

Methods

36 patients in the remission of IBD and 38 patients with IBS were examined. Among the IBD, the diagnosis of UC was in 15 (41.7 %), CD – in 21 (58.3 %) patients. 16 (44.4 %) patients was male, 20 (55.6 %) was female, the average age – 34.6 ± 3.2 years. IBS with diarrhoea was in 21 (55.3 %), IBS with constipation in 15 (39.5 %), mixed form of IBS in 2 (5.2 %) patients. 12 (31.6 %) patients with IBS was male, 26 (68.4 %) was female, the average age – 33.4 ± 2.3 years. SF-36 questionnaire was used for assessment patient's QoL; Hospital anxiety and depression scale (HAD) – for assessment mood disorders.

Results

According the SF-36 questionnaire physical component of the QoL patients in the remission of IBD was significantly reduced compared to patients with IBS (42.9 *vs.* 49.2 points, $p < 0.05$), but the mental health of patients with IBD was higher than IBS (48.9 *vs.* 32.6 points, $p < 0.01$). HAD questionnaire showed that depression and anxiety were observed in 66.7 % of patients with IBD; clinically significant anxiety was in 8.3 %, clinically significant depression – in 13.9 % of patients. Among patients with IBS the HAD questionnaire showed the presence of depression and anxiety in 57.6 % of patients; clinically significant anxiety was observed in 10.2 % of patients, clinically significant depression – in 18.7 % of patients.

Conclusions

Patients in remission of IBD have decrease in the physical domain of QoL compared to patients with IBS. However, in patients with IBS there is a more pronounced decrease in the mental domain of QoL, as well as a greater prevalence of depression and anxiety compared with patients with IBD. This can be explained by the significant role of stress and emotional instability in the development of IBS.

Fujinon intelligent color enhancement (FICE) as a method of *in vivo* biopsy

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Introduction

Epithelial lesions are the most common pathology that is met during the screening colonoscopy. Nevertheless, not every lesion has a potential risk for developing colorectal cancer. The FICE analysis of the pit and vascular pattern allows to determine the histological type of a lesion in vivo and to identify neoplasms with the highest risk for malignancy which have to be treated later.

Study aims

To explore the possibilities FICE in the evaluation of pit and vascular pattern of colonic mucosa.

Methods

In present multicentre study conducted in endoscopic units of Municipal Hospital No. 85 and in Russian Railways Research Centre, 74 patients had colonoscopy with in vivo evaluation of their lesions using Fujinon endoscopes of 590 series.

Results

One hundred-fifty-eight polyps of different types and size were identified. All lesions were subjected to the in vivo evaluation of the pit and capillary pattern using S. Kudo and Y. Sano classification and FICE technique. Magnification of FICE-0 in the user modes: light spectrum R 530, G 485, B 505, light amplification R 3, G 4, B 3 and FICE-1: light spectrum R 550, G 500, B 470; light amplification R 2, G 4, B 4. No biopsy was made before. 158 polyps were treated endoscopically with loop polypectomy and mucous resection. In 79.4 % of cases, earlier suggestions as to the histological type of neoplasms coincided with their pathomorphological findings.

Conclusions

FICE can effectively determine the structure and precancerous changes in a lesion. Preliminary calculations of FICE technique shows that it may replace the chromoscopy with dyes and reduce costs for colonoscopy.

Osteopathic correction as a cholelithiasis preventing method

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Introduction

Osteopathic treatment integration into traditional allopathic treatment of biliary disorders contributes to the normalization of contractile capacity and soundness of the gall bladder, which may become a basis of prevention such disease as cholelithiasis.

Study aims

Research objective: to examine the effectiveness of osteopathic correction in patients with biomechanical and neurodynamic disorders and patients' functional state of the gall bladder.

Methods

Sixty-eight patients with gall bladder anomalies and colloid resistance of bile disorder were put under our supervision, we used prospective examination from 3 to 12 months. The main group consisted of 48 patients who underwent osteopathic diagnostics and treatment, treatment lasted from 5 to 7 sessions.

Osteopathic diagnostics algorithm: Osteopathic diagnostics included the following tests: Fascial hearing (global, local), craniosacral synchrony identification, identification of mobility at the level of the cervical, thoracic, lumbar spines well as rump, identification of thoracic and pelvic diaphragm mobility, identification of mobility and motility of liver, gallbladder, stomach, duodenum, small and large intestine, identification of tension and/or pain at the level of Oddi's sphincter, pyloric part of the stomach, duodenojejunal sphincter, ileocecal valve, in the gall bladder area, along the way of a common bile duct.

Osteopathic treatment algorithm: The following osteopathic correction methods were used in treating patients with cholelithiasis, pre-calculi formation stage: Soft tissue, fascial, articulation, visceral, cranial methods.

Results

Osteopathic correction caused disfunctions elimination after single or multiple procedures. Ultrasound examination of the study group showed the gall bladder size of 7.5 ± 1.6 cm long, and 3.3 ± 0.8 cm wide, with the gallbladder body and neck volvulus, with sound non-uniform bile in the gallbladder cavity, where moving clots of various density without an acoustic shadow were present. The control group showed the size of the gall bladder 7.8 ± 1.7 cm long, and 3.2 ± 0.9 cm wide, with the gallbladder body and neck volvulus, with biliary suspension.

Conclusions

Osteopathic correction caused absence of biliary sludge, the gall bladder was reduced in comparison with the original length down to 4.0 ± 1.7 cm and width down to 1.5 ± 0.5 cm, the discharge rate was more than 50 %, indicating an increase in the gall bladder contractile capacity and efficiency of the treatment procedure. The control group, receiving ursodeoxycholic acid showed positive trend in clinical symptoms and signs, biliary sludge disappearance, the gall bladder was 7.9 ± 1.8 cm long and 3.4 ± 0.9 cm wide. The gall bladder discharge rate after choleretic breakfast was less than 45 %, indicating to a hypokinetic function of the gall bladder. The above data shows efficiency of treating patients having biliary sludge with ursodeoxycholic acid, this type of treatment has no influence on the gall bladder contractile capacity.

Thiosulfite system as a non-specific resistance criterion in people with celiac disease

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Introduction

Thiol-containing compounds with SH groups involved in all biochemical processes play an important role in cell vital functioning. Thiol compounds play an important role in antioxidant system functioning as well as in adaptive process formation, both being predictors for non-specific resistance of the body (L. P. Smirnov, I. V. Sukhovskaya, 2014). Celiac disease is an autoimmune disorder, and the first target to suffer after gluten-containing grain varieties consumption is enterocytes. Non-specific resistance detection in celiac disease patients is an early predictor, reflecting cellular biomembrane structural and functional state pathology as a result of free-radical oxidation.

Study aims

To assess the impact of gluten-free diet on thiosulfite system being a non-specific resistance criterion in people with celiac disease.

Methods

Eighty one patient with genetically and morphologically confirmed diagnosis of celiac disease were placed under our supervision. All the patients were divided into two groups: Group I: celiac patients without ENT disorders (35 people); Group II: celiac patients with ENT disorders (46 people). The average age of the patients was 31.4 ± 11.0 years (18 to 65 years old). We studied 40 (44.4 %) men, and 50 (55.6 %) women. All patients were examined by the ENT specialist, a blood test for defining thiolsulfite groups was carried out, with thiol disulfite ratio (K = SH/SS) calculation.

Results

Comparative study shows the quantitative level of SH-groups to be positively higher ($p < 0.001$) in patients from Group I (418.6 ± 69.0) compared to patients from Group II (283.5 ± 44.1). At the same time, the level of SS-groups had no significant differences and amounted to 136.0 ± 9.5 in patients from Group I and 138.0 ± 13.2 in patients from Group II. The values of the tiolsulfite ratio's coefficient were positively different in the groups being compared ($p < 0.001$). Thus, patients from Group I have this value at the level of 3.1 ± 0.4 and patients from Group II have 2.1 ± 0.3.

Conclusions

Celiac disease patients have their disease being accompanied by the ENT pathology development. After received data examination, one can assume that in patients with ENT pathology thiol sulfite coefficient changes show cellular biomembrane structural and functional changes.

Low-level inflammation and insulin resistance in nonalcoholic fatty liver disease

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Introduction

The degree and the relationship between low-level inflammation and insulin resistance in other forms of nonalcoholic fatty liver disease (NAFLD) is not fully clear.

Study aims

To compare the low-level inflammation and insulin resistance in other forms of NAFLD – in simple steatosis (S) and steatohepatitis (SH) and their relationship and influence on clinical course of NAFLD.

Methods

We studied 139 NAFLD patients: 90 (64.7 %) men, 49 (35.3 %) women, aged 49.2 ± 9.8 years; 38 (27.3 %) patients with steatosis and 101 (72.7 %) with steatohepatitis. The diagnosis was established on the basis of clinical, laboratory, sonographic data, in a part of patients – on the basis of morphologic examination of liver biopsy specimens. Alcoholic, viral, autoimmune, drug etiology of liver damage was excluded. The levels of insulin, TNF-α, interleukin 1β (IL1β), interleukin 6 (IL6) were determined by ELISA. HOMA-IR was calculated. Statistical processing of data was carried out with the help of "StatGraphics 2.1".

Results

Significantly lower levels of traditional markers of inflammation and proinflammatory cytokines were observed in steatosis compared to such indices in steatohepatitis: C-reactive protein (CRP) – 3.7 ± 1.0 g/ml *vs.* 10.8 ± 4.9 g/l ($p < 0.05$), TNF-α – 6.0 ± 1.8 pg/ml *vs.* 6.8 ± 2.1 pg/ml ($p > 0.05$), IL-1β – 2.42 ± 0.33 pg/ml *vs.* 4.46 ± 1.09 pg/ml ($p < 0.05$), IL-6 – 3.92 ± 0.22 pg/ml *vs.* 6.89 ± 1.8 pg/ml ($p < 0.05$) in steatohepatitis. HOMA-IR in steatosis was 6.7 ± 3.0 and in steatohepatitis – 13.5 ± 4.4 ($p < 0.05$). The level of alkaline phosphatase – 265.4 ± 67.3 U/l and triglycerides – 2.8 ± 1.8 mmol/l in patients with steatosis with insulin resistance was higher than level of those markers in steatosis without insulin resistance – 180.6 ± 67.2 U/l ($p < 0.05$) and 1.5 ± 0.6 mmol/l ($p < 0.05$) respectively. In patients with steatohepatitis with insulin resistance the level of TNF-α was –7.5 ± 1.9 pg/ml *vs.* 7.1 ± 1.1 pg/ml.

Conclusions

The degree of low-level inflammation and insulin resistance were significantly higher in steatosis than in steatohepatitis. The markers of inflammation and insulin resistance changed in parallel to each other.

Physical inactivity and prevalence of constipation in patients with type-2 diabetes with adequate glycemic control

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Introduction

The pathogenesis of constipation has not been fully elucidated in type-2 diabetic (T2D) patients with adequate glycemic control. Excessive weight and sedentary lifestyle may have an influence in development of constipation.

Study aims

To examine the association between constipation and physical inactivity in T2D patients with adequate glycemic control.

Methods

An observational clinical study carried out in non-insulin dependent T2D patients with adequate glycemic control (HbA1c < 7.0 %), treated at the Paul's Stradin's outpatient Endocrinology clinic. Inclusion criteria for patients were the following: both sexes patients with non-insulin dependent T2D and adequate glycemic control, age 35–70 years. Exclusion criteria were: cognitive impairment, age > 70 years, HbA1C > 7.0 %, insulin therapy, fasting, diets, vegetarians / vegans. Constipation was defined through the Rome III diagnostic criteria. The Global Physical Activity Questionnaire (GPAQ) version 2 was used to assess physical activity level. Results are expressed as mean ± SD. Comparisons between means were carried out using the independent sample t-test.

Results

Ninety-seven patients were questioned, of whom 29 % used monotherapy and 71 % combined therapy for diabetes control. 38 % of patients were men and 62 % were women. The mean baseline characteristics of enrolled patients were: age (years) 60 ± 8 for women and 59 ± 6 for men; duration of diabetes (years) 7 ± 4; HbA1c (%) 6.6 ± 0.4; BMI (kg/m^2) 33 ± 4. Constipation was identified in 34 % of patients. 54 % of patients had a sedentary lifestyle, 44 % moderate daily activity, and 2 % high physical activity. Patients with constipation have longer daily sedentary periods compared to patients without constipation (9.1 ± 1.2 *vs.* 8.2 ± 1.5 hours per day, t(95) = 2.9, p = 0.005). BMI was higher in patients with constipation compared to patients without constipation (34 ± 6 *vs.* 31 ± 7, t(95) p = 0.03).

Conclusions

Sedentary behaviour and excessive weight are frequent among T2D patients. Low physical activity not only causes weight gain, but also is associated with constipation in patients with T2D with adequate glycemic control. T2D is a multifactorial disease, and thus, more studies are needed to demonstrate hypothesis between other factors and gastrointestinal disorders in this patient group.

Small neuroendocrine tumour in rectum

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Introduction

Gastrointestinal neuroendocrine tumours arise from neuroendocrine cells of endodermal origin. They are located in decreasing order of frequency in appendix, ileum, rectum, stomach, and colon. The vast majority of lesions are asymptomatic and are found incidentally during endoscopy.

Study aims

To demonstrate a clinical case of small neuroendocrine tumour in rectum, which is a rare localization for that kind of lesions.

Methods

Clinical case report.

Results

A 56 years old female patient was referred to an Endoscopy Unit by a family doctor because of prolonged persistent (at least 3 years) complaints of diarrhoea (4–5 times a day). There was no visible blood in stool, also guaiac faecal occult blood test was negative. Calprotectin was 48 mcg/g, gastrointestinal infections and parasites were excluded. General condition of patient was defined well and her vital signs were within the normal range (arterial tension: 130/85 mmHg, pulse: 86/min). C-reactive protein was normal. There was no family history of colorectal cancer. She had a history of primary arterial hypertension, controlled by therapy recommended by cardiologist, no other diseases were mentioned. Diagnostic colonoscopy was performed in August 2017. Bowel preparation was done by polyethylene glycol solution, result of Boston scale was 7. Small solitary 3 mm flat sessile lesion with intact overlying epithelium was detected in rectum, about 12 cm from anal merge. The lesion was removed by biopsy forceps in 4 pieces and sent to laboratory as a hyperplastic polyp. The lesion was inspected immunohistochemically and it showed a characteristic trabecular pattern and it was positive for CKAE1-AE3, synaptophysin and negative for chromogranin. It was concluded that analysed material is taken from neuroendocrine tumour.

Conclusions

It is important not to dismiss small flat lesions in colon and evaluate them histologically and immunohistochemically. Rectal neuroendocrine tumours are usually seen as subepithelial nodules as well as polyps, lesions also can be seen like an ulcers. Considering guidelines of National Comprehensive Cancer Network (1.2017) because of small size of tumour and its total resection, no additional follow-up was required.

Eosinophilic esophagitis as a rare case of dysphagia

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Introduction

Eosinophilic esophagitis is a leading cause of dysphagia and food impaction in children and young adults. It is an inflammatory condition in the esophagus, when esophageal mucosa is infiltrated by eosinophilic cells (more than 15 Eo cells / high power field). It is local, immune-modulated esophageal disease. Symptoms are related to esophageal dysfunction, endoscopic examination can be normal.

Study aims

To demonstrate a clinical case of eosinophilic esophagitis, which is a rare condition in daily practice, therefore diagnostic and therapy methods are different from methods, which are used in cases of dysphagia caused by other, most frequent reasons.

Methods

Clinical case report.

Results

A 27 years old male patient was referred to an Endoscopy Unit by a family doctor because of prolonged persistent (at least two years) complaints of dysphagia, heartburn and a food bolus impaction. He also had a history of bronchial asthma, controlled by therapy recommended by a pulmonologist and indefinite etiology dermatitis, which was not reacting to therapy, recommended by a dermatologist. So far four upper endoscopy examinations were performed (last in April 2016) and the only pathology was established was cardiac insufficiency. Another diagnostic endoscopy was performed in June 2017 and considering the anamnesis of the patient it was resolved to take biopsies from the mucosa of an esophagus. Four specimens were taken from the middle part of an esophagus. It was requested not to take any proton pump inhibitors four weeks prior the procedure. The samples were collected in formalin solution and delivered to the laboratory. The original hematoxylin & eosin stained slides were reviewed, and the number of biopsy fragments containing squamous mucosa were recorded. By using a ×40 objective and ×10 oculars (field diameter = 0.52 mm, field area = 0.21 mm (2)), the number of eosinophils per high power field (Eo cells/HPF) in three high power fields were counted in each biopsy fragment. All reviewed biopsy fragments contained more than 15 Eo cells/HPF, which approved the diagnosis of eosinophilic esophagitis.

Conclusions

Eosinophilic esophagitis must always be considered as an etiologic factor of dysphagia in children and young adults. The diagnosis is proven histologically.

Anecdotal case of biliary colic etiology

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Introduction

Ascaris lumbricoides is one of the most common parasitic worms worldwide. Entering hepatobiliary tract, parasite invasion might lead to such complications as cholecystitis, cholangitis, pancreatitis and hepatic abscesses. Previous interventions into hepatobiliary tract such as papillotomy seem to increase the risk of complications. Adult parasite usually can be diagnosed by computer tomography, magnetic resonance or MRCP, however some cases are diagnostically challenging.

Study aims

We report a case of biliary ascariasis.

Methods

Clinical record and intraoperative photographic materials of a Rīga East University hospital patient were used.

Results

Sixty-three-year old Caucasian woman was admitted with complaints about severe pain in right hypogastrium, nausea, fever, multiple vomiting episodes with bile over past two days. Previously, in 2008, she had episode of complicated cholecystitis and underwent laparoscopic cholecystectomy. In 2009 ERHP with papillotomy was performed because of choledocholithiasis. During the investigation she revealed tenderness in the right upper abdominal quadrat. Laboratory showed increased transaminases (ALAT – 372.0 U/L, ASAT – 499.0 U/L), higher glucose level (10.0 mmol/L). The other analyses were within reference range. Abdominal ultrasonography was performed, which revealed accented intrahepatic bile ducts. Common bile duct was seen only proximally, dilated to 11 mm. To clarify the diagnosis, magnetic resonance was performed, however it did not depict any pathologic content of biliary ducts. During the period of investigation a conservative therapy with antibiotics (Ciprofloxacin, Metronidazole), rehydration, as well as hepatoprotectors was started. The therapy had no effect; therefore patient was transmitted to surgical department for further investigations, where ERCP was performed. During the procedure 18-centimetre long helminth was evacuated. After a course of antiparasitic medication all symptoms have disappeared.

Conclusions

Helminth invasion in biliary tract is quite rare finding in developed countries. Clinics may usually mimic classic biliary colic and lead to secondary cholangitis, as it happened in described case. The diagnostics of the pathology sometimes is complicated due to bad visualization of helminths during imaging in comparison with stones, but therapy almost always is effective – 95 % of patients respond well to antiparasitic medication.

Comorbidities in primary biliary cirrhosis in Latvia: 10 year experience

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Introduction

Primary biliary cirrhosis (PBC) is frequently associated with comorbid conditions, such as autoimmune hepatitis, systemic lupus erythematosus, rheumatoid arthritis, thyroid dysfunction, metabolic bone disease, urinary tract infections and malignancy. PBC patients often undergo such surgical interventions as cholecystectomy, tonsillectomy and colonic polypectomy.

Study aims

To evaluate PBC comorbidity and surgical intervention data in patients with confirmed PBC diagnosis.

Methods

The study included data from case records of 116 patients with 270 admission episodes in 2 biggest Latvian hospitals: Pauls Stradiņš Clinical University Hospital and Rīga East University hospital from January 2004 to December 2014. An originally created study protocol, containing more than 35 parameters, including information about concomitant diseases (autoimmune, digestive, neurological, pulmonary and surgical interventions), grouped and classified according to the ICD-10 (2015) classification, was completed for each patient and data was entered database with consecutive statistical analysis using SPSS 20.0.

Results

One-hundred-sixteen patients, 115 (99.1 %) female and 1 (0.9 %) male patient was admitted 270 times. Mean age 70.01 ± 10.19 years. The most common comorbidities were: 30 (25.86 %) appendectomy cases, 28 (24.14 %) primary arterial hypertension, 21 (18.1 %) osteoporosis cases, 15 (12.93 %) chronical pancreatitis, 12 (10.34 %) autoimmune hepatitis, 10 (10.34 %) *diabetes mellitus*, 6 (5.17 %) rheumatoid arthritis. Statistically significant positive correlation was found between the patient age and cardiovascular diseases (ischemic heart diseases, primary arterial hypertension, atrial fibrillation) ($r_s = 0.29$; $p < 0.005$) and neurological diseases (vascular encephalopathy and deforming spondylosis) ($r_s = 0.15$; $p = 0.01$).

Conclusions

1. PBC correlates with multiple comorbid conditions, consistent with the literature data.
2. In 60.3% of all admission episodes' patients have undergone surgical interventions.
3. Older (> 65 years) PBC patients suffer more from cardiovascular and neurological diseases.

Evaluation of primary biliary cirrhosis diagnostics according to EASL guideliness: 10 year experience in Latvia

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Introduction

According to EASL guidelines 2008, primary biliary cirrhosis (PBC) diagnosis is confirmed with a combination of abnormal liver tests (elevated alkaline phosphatase (ALP) of liver origin for at least 6 months) and presence of antimitochondrial antibodies (AMA) (> 1 : 40) in serum. AMA is the diagnostic hallmark of PBC and is detected in more than 90 % of all affected individuals. The diagnosis is confirmed by disclosing characteristic histological features of florid bile duct lesions.

Study aims

To analyse PBC diagnostic methods in patients with confirmed PBC diagnosis in Latvia.

Methods

This is a retrospective record-review study of case files of 116 patients in two largest hospitals in Latvia – Pauls Stradiņš Clinical University Hospital and Rīga East University hospital from January 2004 to December 2014. An originally created study protocol, containing more than 35 parameters, was completed for each patient and data was entered in the database with consecutive statistical analysis using SPSS 20.0.

Results

One-hundred-sixteen patients, 115 (99.1 %) female and 1 (0.9 %) male patient, were admitted 270 times. Mean age at confirmation of PBC diagnosis was 59.05 ± 9.55 years. First symptoms which caused suspicion of PBC was elevated liver enzymes (26.4 %), pruritus (19.7 %) and jaundice (9.1 %). PBC diagnostics were conducted according to EASL guidelines in 66 (56.9 %) patients, when both ALP and AMA levels were taken into account. Positive AMA was found in 70 (60.34 %) patients. ALP was determined in 98 (8.48 %). Liver biopsy was performed and stage was determined in 50 (43.1 %) patients: 5 (10.9 %) stage I, 12 (26.1 %) stage II, 17 (37 %) stage III, and 10 (21.7 %) stage IV liver cirrhosis. The mean time between PBC suspicion and diagnosis was 15.52 months.

Conclusions

PBC diagnostics were conducted according to EASL guidelines in only 56.9 % of all cases, pointing out on the discrepancies between guidelines and real life.

A case of dysphagia of unclear etiology

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Introduction

Stomach cancer is one of the most preponderate cancer types in Latvia. Despite the wide use of 21st century technologies for treatment, this disease still accounts for a high number of death cases in our population. According to the Lauren classification, stomach cancer should be divided to two pathological subtypes – intestinal and diffuse.

Study aims

We present a case of dysphagia of unclear etiology in a patient with atypically long clinical manifestation.

Methods

A 56-year-old man presented with a two-year history of a progressively worsening dysphagia, weight loss (–35 kg), and weakness. He had no known allergies, chronic diseases, previous surgical interventions or family history of malignancy, chronic/major diseases. One risk factor was mentioned – smoking (25 pack-years). At admission patient was alert, malnourished (BMI 15 kg/m^2), dehydrated. Laboratory showed increased urea 38.6 mmol/L (1.7–8.3), creatinine level 228 mkmol/L (62.0–106.0) and hypoalbuminemia 27.5 g/L (35.0–52.0). Patient had undergone upper endoscopy, that revealed stenotic lesions in distal part of esophagus. Biopsies demonstrated chronic atrofic gastritis with low-grade dysplasia. Chest CT scan without contrast depicted no tumour process in distal esophagus or proximal stomach. After radiologic examination – a barium swallow study – achalasia was found, therefore laparoscopic miotomia was performed, which revealed a tumour of gastroesophageal junction. Patient had undergone surgical interventions – total gastrectomy, partial esophagectomy, D2 lymphnode dissection; Roux-en-Y anastomosis was created.

Results

Histopathological examination of the biopsy samples proved stomach intestinal type adenocarcinoma, cancer stage at moment of diagnosis was $pT4aN_0M_0G_2R_0$. Patent was discharged from hospital in overall good clinical state. Radiation therapy first course was performed. Follow-up is planned at the beginning of January 2018. Prognosis is dubia (less than 33 %).

Conclusions

The intestinal type is the most common histologic type of stomach cancer and often related to environmental factors such as diet, life style, and associated with intestinal metaplasia, *Helicobacter pylori* infection. Patients with intestinal type cancer have better prognosis than those with diffuse type. Stomach cancer is a pathology that is confronted daily by endoscopy practitioners, gastroenterologists, surgeons and family doctors therefore it is imperative to diagnose the illness in timely fashion and to begin treatment as soon as possible.

Features of monosaccharide absorption modification in the small intestine by a high carbohydrate diet in early postnatal ontogenesis

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Introduction

Some forcible arguments for the presence of regular response of the monosaccharide transport systems in the small intestine to carbohydrate content changes in the dietary intake have been obtained in the last decades. Nevertheless, some peculiarities and the mechanisms of this adaptive response remain debatable.

Study aims

The aim of the study is to research features of glucose and fructose absorption in the small intestine by a high carbohydrate diet in early postnatal ontogenesis.

Methods

The research has been carried out on male rats with an isolated segment of the small intestine in situ (single-pass intestinal perfusion). After weaning (on day 18–19), young rats of the experimental group were on a high carbohydrate diet (59.0 % of forage weight and 78.2 % of consumed energy) during 6 weeks. Then, a part of the animals were put on the standard food ration (the diet AIN-93G). The reference group comprised of the animals that after weaning were kept on the standard diet.

Results

It has been revealed that, after 6 weeks of the high carbohydrate diet, the intensity of glucose absorption is increased in 1.3–1.5 times and that of fructose – in 1.5–1.6 times depending on the monosaccharides' initial concentration in the intestinal cavity (25–110 мМ); the maximum glucose transport rate (Jmax) is noticeably increased; the nonsaturable absorption rate constant (Kd) is decreased; the active glucose transport system's efficiency coefficient (Jmax/Kt) is increased more than in 1.5 times; the Michaelis' constant (Kt) is not significantly changed. Putting the animals from the high carbohydrate diet on the standard one leads to only partial normalization of fructose absorption and, later on, glucose one, and the level of absorption of both the monosaccharides remains significantly higher than that of the reference group even for a long time (6–8 weeks).

Conclusions

Thus, the high carbohydrate diet causes a noticeable increase of monosaccharide absorption in the small intestine and furthers the development of its disorders. That shows the possibility of the purposeful impact on intestinal absorption function specifics formation by means of nutritional factors in early postnatal ontogenesis.

Echinococcus multilocularis infection of the liver: a clinical case

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Introduction

Echinococcosis is a chronic, slowly progressing parasitic disease that is found relatively rarely in the northern parts of Europe, however, in Latvia, in comparison with neighbouring countries, there is a larger number of patients, since only 14 cases of echinococcosis have been registered in Estonia, but there have been only some reports of clinical cases from the Scandinavian countries.

Study aims

Clinical case.

Methods

The patient is a male born in 1944. He has been complaining about episodic discomfort in the right side of the abdomen for several months, but since they were not severe, he did not seek medical help. He has history of melanoma that was surgically removed in 2000, no data on recurrence. In June 2016, due mentioned complaints, abdominal CT was performed – it described right liver lobe lesion 5.4 × 5.2 and 7 × 4.2 cm in size with perifocal low radiodensity areas up to 13 to 10 cm – conclusion was hepatoblastoma or atypical hepatocellular carcinoma. In 2000 abdominal CT shoved no abnormalities in the liver.

Results

By assessing patient complaints, anamnesis and CT findings a liver biopsy is performed and its response are striking – PAS positive structures indicative for echinococcus. Then serological investigations were carried out in which IgG is detected against Echinococcus spp. and *Echinococcus granulosus*, which are subsequently confirmed by the WesternBlot method. After these results repeated abdominal CT was performed – is described several small cysts in left liver lobe and main structure in right liver lobe with total size 13.5 interpreted as *Echinococcus multilocularis*. Radical surgery was performed, short-term hepatic failure develops in the postoperative period, which is corrected accordingly. Now patient feels satisfactory and continues treatment with Albendazole.

Conclusions

It can be concluded that the diagnosis of echinococcosis in Latvia may be misinterpreted and delayed. In the case described, there is a discrepancy between the radiologic and serological findings. Now it is recommended that in determining diagnosis, radiological data should be of primary importance. However, the patient had radical parasite evacuation, and there are currently no data on recurrence.

Real-world effectiveness of DAA in hepatitis C virus genotype-1 infection: single centre experience in Latvia

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Introduction

Since January 2017 two directly acting antiviral (DAA) – *elbasvir / grazoprevir* and *ombitasvir / paritaprevir / ritonavir* plus *dasabuvir* – combinations became available in Latvia. We report on real world effectiveness of mentioned medication for hepatitis C genotype-1 infected patients.

Study aims

Study aim was to report real world effectiveness of DAAs for hepatitis C genotype-1 infected patients.

Methods

Data from one of the hepatitis C treatment leading centres in Latvia – Rīga East University hospital Gastroenterology, hepatology and nutrition clinic were analysed. The primary endpoint of the treatment was achievement of sustained virologic response (SVR) 12 and 24 weeks after completion of treatment. By current guidelines in Latvia patients treated was ones with advanced liver fibrosis, defined as liver stiffness of 9.5 kPa or confirmation of at least fibrosis 3 in liver morphology.

Results

Since beginning of treatment in January 2017, treatment with DAAs started 50 patients (50 % woman and 50 % man). Among them 92 % (46) had genotype 1b infection but 4 had genotype-1 non-differentiated infection. All patients had advanced liver disease: fibrosis stage III – 64 % (32) patients, fibrosis stage III–IV – 4 % (2) patients and cirrhosis 30 % (15) patients; 8 patients confirmed with liver elastography and 7 patients had clinical signs of cirrhosis. There was one specific case – patient after kidney transplantation without significant fibrosis. There was 68 % (34) treatment naive patient and 32 % (16) treatment experienced who previously received interferon alfa either alone or in combination with *ribavirin* or *ribavirin* plus *simeprevir*. Among all patients 70 % (35) received *elbasvir / grazoprevir* combination and 30 % (15) *ombitasvir / paritaprevir / ritonavir* plus *dasabuvir*. At this moment 60 % (30) patient finished treatment from which 84 % (25) patients had undetectable viral load after treatment but 5 had inconclusive results. All patients had achieved SVR12. At the beginning of treatment 68 % (34) patients had increased ALAT but after treatment 90 % (27) had normalization of this transaminase.

Conclusions

Both treatment regimens were highly effective in patients with advanced liver fibrosis and cirrhosis in case of genotype-1 infection as all achieved SVR 12 and can be safely used in future treatment.

Correlation of gastric cancer pathologic factors and recurrence after radical surgery

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Introduction

Gastric cancer is 4th common cause of oncology related death in Latvia. Gold standard of treatment is radical surgery with adequate lymphadenectomy and combination with chemotherapy in N positive disease. This strategy allowed improving 5-year survival. Nonetheless patients with curative gastrectomy continue to experience recurrence, which is most common cause of death in this group of patients.

Study aims

Aim of this study is to explore correlation between gastric cancer pathological factors and fact of recurrence, to aim more precise prediction of recurrence and to improve follow up strategy.

Methods

Retrospective trial. We analysed 240 patients that underwent treatment for gastric cancer in Rīga East University hospital, Clinic of oncological surgery, Department of abdominal and soft tissue surgery (between 2007–2013). We collected and analysed pathological and follow up data. We used IBM SPSS to perform statistical analysis.

Results

One-hunder-ninety-five patients were included in final dataset. During follow up recurrence happened in 73 patients (37.4 %), 110 patients 56.4 % were disease free and there is no data about 12 patients (6.4 %). Mean time of recurrence was 18.6 month. Mean overall survival in patients with recurrence was 28.9 month. There was statistically proven relationship between the fact of recurrence and TNM stage ($p = 0.00$), vascular invasion ($p = 0.00$), lymphatic invasion ($p = 0.024$) and pathological type of cancer ($p = 0.108$). Patients with recurrence were mostly readmitted to the department, and received closer examination and treatment. 14 patients had curative or potentially curative surgery, 4 of them also received systemic chemotherapy. 9 patients had palliative chemotherapy, one of them had chemoradiation. 50 patients had only symptomatic treatment.

Conclusions

Closer examination of gastric cancer pathology during primary treatment allows to make more precise predictions of recurrence and improves early diagnosis of recurrent disease. In at least 20 % of patients with recurrent gastric cancer potentially curative treatment is possible. Larger prospective trials are needed to improve strategy of diagnosis and treatment of recurrent gastric cancer.

Polypragmasia and probiotic microorganisms containing fermented foods in the diet of Latvian patients with gastrointestinal complaints

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Introduction

Increased knowledge about the significance of human gut microbiota role in the formation of immunological system and regulation of diverse metabolic pathways supports regular inclusion of fermented food products with viable probiotics in the daily diet of chronic internal disease patients. Inclusion of live probiotic microorganisms in the diet promotes digestive health, ensures adaptive immune response and reduces chronic systemic inflammation background for multi-morbid patients.

Study aims

A study was conducted in order to gather data about the Latvian patients with gastrointestinal complaints knowledge regarding probiotic microorganism beneficial effects and the existing dietary habits of these patients regarding the use of various traditional Latvian fermented food product containing viable probiotic microorganisms. The extent of regular confounding factors that interfere with gastrointestinal rehabilitation attempts was investigated.

Methods

The prospective randomized study investigated 105 Latvian patients with GI complaints with GP referrals to Pauls Stradiņš Clinical University Hospital, endoscopy department and analysed fermented product use questionnaires, endoscopy findings (biopsies) and possible correlations between the data and the result significance for the long-term digestive health benefits.

Results

Significant confounding factor, namely polypragmasia, was found in all but one of the investigated patients. Maximal number of used drugs was 14 diverse group medications. No food supplements or drugs or only one medication was used by 21 patients. 83 fermented food product users (with extreme case 14 one time drug users) and non users (with extreme case 11 one time drug users, also, in reality half being uninformed fermented food users) both due to negative modulating vectors present from said drugs practically neutralize any possible therapeutic gain expected from probiotics or traditional probiotics containing fermented foods as evidenced by the endoscopy, questionnaire information and laboratory data.

Conclusions

Fermented food products could be recommended either together with the admission of synbiotics or without additional food supplements, but in order for this therapy to favourably interact with the patient enterotype and decrease GI complaints, patient polypharmacy habits have to be corrected and monitored by gastroenterologist. Use of short term probiotics containing fermented foods in the absence of prebiotics in the regular diet together with polypragmasia characterize Latvian patients with GI complaints nowadays.

Proteome comparative study of the proteins of the mucosa of the esophagus in gastroesophageal reflux disease

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Introduction

The research of gastroesophageal reflux disease (GERD) is very important and associated with increasing prevalence of the disease, emergence of resistance to conventional therapy and development of significant complications. Undecided questions are questions concerning the mechanisms of the disease progression and requirement of the solution by new high-tech innovative bioanalytical methods, particularly focused on specification of proteomic profile of the mucosa of the esophagus.

Study aims

Study of proteomic profile of the mucosa of the esophagus in GERD and different gradation of reflux-esophagus, as well as the complicated clinical course – Barrett`s esophagus (BE).

Methods

The prospective study includes 40 patients of both sexes at the age of 24–64, 15 of them had the severity of GERD level as A, B, 13 – C, D (according to Los-Angeles classification), 12 patients had GERD with BE, that was confirmed by complex clinic-endoscopic and morphological examination. Materials for examination were biotic patterns of the mucosa of the esophagus. Disintegration of peptides and proteins of the mucosa of the esophagus, and their identification are made on the basis of SDS-PAGE, 1 DE, sets for clinical proteomic analysis. Mass-spectrographic analyses were obtained with use of tandem MALDI-TOF/TOF mass-spectrometer Ultraflex II. Authenticity of differences in proteomic profile of the mucosa was identified with the help of χ^2-criterion and fourfold tables of contingency (Statistica 10.0).

Results

Comparative analysis of molecular profile of patients with gradations of reflux-esophagus A, B and C, D elicits 7 proteins of diversity. The most important for regulation processes is galectin-7, gamma chain of fibrinogen, periplocin, heat-shock protein 90, prothymosin-α, stathmin-1, protein S 100 A 9. Along with that, patients with BE have advanced expression of member 10 of set 1 aldo-keto reducstase, inorganic pyrophosphatase, heat-shock protein 60, thioredoxin, elongation factor Tu, tropomyosin 2, all participate in process of generating transretinic acid, hydrolytic degradation of pyrophosphate into phosphate necessary for proliferative activity of tumour cells.

Conclusions

Expressed proteins of the mucosa of the esophagus participate in regulation of inflammation process, apoptosis, adhesion, transportation of ions. Modification of proteomic profile of the mucosa of the esophagus is an important pathogenetic factor of development of GERD.

Use of laminolact in complex therapy of patients with chronic kidney disease on peritoneal dialysis

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Introduction

Today, chronic kidney disease (CKD) at different stages can be found in 10 % of the adult population of different countries. Gut microbiota in CKD is disrupted both quantitatively and qualitatively that contributes to progression of the CKD, development of complications of CKD. Therefore, one of the strategies of therapy of patients with CKD is the use of medicines that affect the gut microbiota, such as pre-, pro-, sim-, synbiotics.

Study aims

The aim of the study was to assess the effectiveness of use of Laminolact for one month to the nitrogen metabolism and gut microbiota of patients with CKD on peritoneal dialysis (PD).

Methods

The study included 60 patients who received PD, they were divided into 2 groups: first group received Laminolact and standard therapy, second group received standard therapy. There were biochemical analysis of blood (urea, creatinine) and analysis of faeces for gut microbiota by PCR-RV with fluorescent detection.

Results

Before the start of therapy, the mean creatinine level in the patients of the first group was 657 ± 201 μmol/l, urea – 21.6 ± 5.0 mmol/l, of the second group – 648 ± 188 μmol/l and 18.8 ± 4.7 respectively, with p (DA) < 0.001. After month of treatment in first group patients there was a decrease in both creatinine and urea. Analysing the gut microbiota as total bacterial mass, Lactobacillus spp., Bifidobacterium spp., *E. coli*, *E. coli* enteropathogenic, Enterobacter / Citrobacter, *Cl. perfringens*, the initial values of which before the course of treatment were approximately the same in both groups, after a month of therapy in patients of the first group, there was improvement – a decrease in the total bacterial mass, *E. coli* enteropathogenic, Enterobacter / Citrobacter, an increase of Lactobacillus spp., Bifidobacterium spp. and *E. coli* and the absence of *Cl. perfringens* in comparison of patients in second group.

Conclusions

Thus, Laminolact beneficially affects not only the state of gut microbiota but also the nitrogen metabolism. Synbiotic Laminolact was effective in the complex therapy of patients with CKD on PD and may be considered to be included in the management of such patients.

UGT1A1 gene's G211A variation as a cause of Gilbert's syndrome in the Latvian population

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Introduction

Gilbert's syndrome (GS) is a common condition that is estimated to affect 3 to 7 percent of population, characterized by periods of unconjugated hyperbilirubinemia (UH). It is an autosomal recessive disorder, which is caused by mutations in the *UGT1A1* gene. The majority of GS cases in Caucasians, including Latvian population, are caused by the homozygous TA insertion in the promotor region of *UGT1A1* gene, whereas other mutations, in particular G211A, which is the subject of this research, are extremely rare. However, G211A is a common variation among Asian populations, reaching up to 10 % in the general population. That is why most of the laboratories in Europe, including those in Latvia, perform the TA insertion analysis only.

Study aims

To analyse the significance of G211A variation as a cause of GS and its frequency in Latvian population.

Methods

Our study included 197 patients from Latvia with suspicion of GS: 22 patients with genotype (TA)6/(TA)6, 87 – with genotype (TA)6/(TA)7 and 88 – with (TA)7/(TA)7. To analyse the frequency of G211A variation in the general population of Latvia, 182 samples were kindly provided by the Genome Database of the Latvian Population. PCR-RFLP assay was used to genotype G211A variation.

Results

The frequency of G211A variation among the patients with suspicion of GS and (TA)6/(TA)6 genotype is 0/22 (0 %), with (TA)6/(TA)7 genotype – 5/87 (5.8 %) and with (TA)7/(TA)7 genotype – 0/88 (0 %). The allele frequency of G211A variation in the general population of Latvia is 0.0028 (identified in 1 of 182 individuals). Compound heterozygosity with both – TA insertion and G211A explains UH in 5/109 (4.6 %) of patients without homozygous TA insertion.

Conclusions

Variation G211A occurs only among patients with UH and confirmed heterozygous *UGT1A1* promoter TA insertion. It is recommended to include the variation in GS molecular diagnostic algorithm in Latvia in patients with UH, who don't have homozygous TA insertion in the *UGT1A1* gene. The frequency of G211A mutation in general population of Latvia is low.

The role of the changes in intestinal microbiota and microbiota exometabolites in the development, course and prevention of non-alcoholic fatty liver disease

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Introduction

In recent years, non-alcoholic fatty liver disease (NAFLD) is of frequent occurrence and is diagnosed in 37.3 percent of the Russian population. One of the factors contributing to the development of NAFLD is a disturbance of the qualitative and quantitative composition of the intestinal flora – dysbiosis.

Study aims

The objective of our study was to determine the effect of disturbances of intestinal microflora and its metabolites on the development, course, and prevention of NAFLD.

Methods

25 overweight patients age 45.4 ± 16.2 years with NAFLD (with steatosis) were examined. There were included such methods as: questioning, inspection, assessment of life quality (SF-36), clinical and biochemical blood tests, Fibromaks-test, analysis of the metabolome of blood, bacteriological examination of the contents of the colon (PCR-RT), bioimpedance analysis of the component composition of the body and an ultrasound examination of the liver (SPD). All patients took "Gepagard Active": containing essential phospholipids, L-carnitine, and vitamin E (Eurasian patent No. 019268 from 28.02.14), 1 capsule 3 times a day during a meal for 3 months.

Results

All patients were found to have a microbial imbalance, expressed as a significant decline in the proportion of Bacteroides. After treatment there was a significant increase from 11.3 % ± 10.6 (media ± CO) to 47.6 % ± 28.8 of the total number of microorganisms ($p < 0.0001$). The drug restored the microbial balance in the large intestine associated with excess body weight and the risk of systemic metabolic disorders. This fact proves the prebiotic effect of the drug (patent RF No. 2571495 from 20.12.2015). After therapy an overall increase in the number of metabolites in the blood was observed. It was achieved due to the mobilization of fatty acids from fat depots, and an increase of the activity of their oxidation in the liver. The level of 3-oxopropionate acid in serum may be a marker of changes of microbial metabolism in the colon during the treatment. In addition, the positive dynamics of clinical laboratory indicators were achieved.

Conclusions

All the patients with NAFLD suffered from dysbiosis associated with obesity and systematic metabolic disorders. Gepagard Active optimizes the qualitative and quantitative composition of microflora and its metabolites. It improves the quality of life.

Evaluation of the clinical response to *Sofosbuvir* (generic, Searle) treatment regime in Pakistani patients with chronic hepatitis C in real practice

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Introduction

In Pakistan, prevalence rate of hepatitis C is the second highest ranging from 4.5 % to 8 %. Globally, Interferon-free direct-acting antiviral therapy has revolutionized treatment for chronic hepatitis C. However, due to the slow regulatory process of DAAs registration in Pakistan and against the current AASLD / IDSA Hepatitis C Guidance, the Sofosbuvir / Ribavirin combination is the registered treatment regimen.

Study aims

This post-marketing observational studies (PMOS) was conduced across 30 sites at 10 major cities of Pakistan started from January 2017, evaluating the safety and efficacy of Sofosbuvir (Searle, Pakistan) plus ribavirin (generic, Searle, Pakistan) therapy among treatment-naïve Pakistani patients with chronic genotype 3 HCV infection. The study data reflects to the demographic local population safety and effectiveness of Sofosbuvir combination regime. This abstract shares the week four (4) interim analysis results.

Methods

In the HOME (hepatitis observational management envision) study as per study inclusion / exclusion criteria, 244 GT-3 HCV infected non-cirrhotic, treatment naïve Pakistani patients received SOF (generic) 400 mg with Ribavirin (generic, Searle) daily for 24 weeks. The study assesses the overall safety, rapid virological response (RVR) (week 4) and sustained virological response (SVR) at week 24.

Results

Two-hundred-forty-four patients, 121 (49.59 %) females, 123 (50.40 %) males were included. Mean age was 43.16 ± 11.21 (SD). It was observed that treatment was well tolerated among infected patients. Province wise RVR data is as follow. Number (GT-3): (10) Sindh, (178) Punjab, KPK/Capital (56). RVR achieved (%): 09 (90 %) Sindh, 171 (97 %) Punjab, 51 (94 %) KPK/Capital. No response rates, week 4 (%): (0) Sindh, 4 (2.9 %) Punjab, 2 (1.2 %) KPK/Capital. Discontinuation rates (%): (0) Sindh, 4 (2.9 %) Punjab, 2 (1.2 %) KPK/Capital. Lost to follow-up: 01 (10 %) Sindh, 03 (1.6 %) Punjab, 02 (3.5 %) KPK/Capital. No of adverse event reported: (02) Sindh, (12) Punjab, (05) KPK/Capital.

Conclusions

In this pooled analysis, the tablet regimen of SOF/RIB for 4 weeks provided high rates of RVR and is a safe, well-tolerated option for HCV patients.

Esophageal stenting in patient with *myasthenia gravis*: case report

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Introduction

Myasthenia gravis is a chronic autoimmune neuromuscular disease that causes weakness in the skeletal muscles. It is newly diagnosed in up to thirty per million people annually. In a myasthenic crisis, a paralysis of the respiratory muscles occurs, necessitating assisted ventilation to sustain life. Infection, fever, an adverse reaction to medication, or emotional stress could become a trigger of such crises. Chronic tracheostomy, which is used in severe cases, in association with main disease and malnutrition may lead to formation of tracheoesophageal fistulas.

Study aims

We present a case report about a 37-year-old woman with acquired generalised form of *myasthenia gravis* since age of 23 years, with a myasthenic crisis and respiratory insufficiency.

Methods

A patient was admitted with complaints about fatigue, cough, dyspnoea, and discomfort in right side of chest cavity. Previously prescribed medications were not used regularly. During period of hospitalisation weakness of respiratory muscles progressed, pulmonic arteremboly developed in combination with bacterial endobronchitis and right-sided pneumonia. Due to the persistent respiratory muscle insufficiency and decubitus risk associated with endotracheal intubation, it was decided to insert tracheostomy to provide respiratory support. Later patient underwent bronchoscopy through tracheostomy because of progressive cough and dysphagia – in the upper third of the trachea ~ 2 cm large traheoesophageal fistula was found.

Results

It was decided to close the fistula surgically, however due to the patient's overall severe status, malnutrition and immunosuppressive therapy, inadequate healing of fistula with dehiscence of sutures was detected. To achieve adequate nutrition status, percutaneous endoscopic gastrostoma was inserted. The next step was the protection of airways with stent implantation in esophagus, however a short period after the procedure, chest x-rays revealed new fistula below the stent. The patient developed severe septic pneumonia. Despite the active therapy, the condition worsened and after 16 days patient died.

Conclusions

Airway management is one of the most important treatments for a myasthenic crisis. However, malnutrition and immunosuppressive therapy are the risk factors for tissue damages such as tracheoesophageal fistulas, which are highly resistant to invasive therapy. Fistula closing and use of artificial stents may be the solution, however the prognosis depends mostly on the main disease.

Comparison of two faecal occult blood test methods in patients with anaemia

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Introduction

Faecal occult blood tests (FOBT) are a screening tool for colorectal cancer that should be done annually after 50 years of age. There are two kinds of FOBT: guaiac-based (gFOBT) and immunochemical (iFOBT). Because of wide range of drugs or foods containing compounds with peroxidase or pseudoperoxidase activity that can lead to false positive gFOBT, this test is gradually replaced with iFOBT.

Study aims

To compare two faecal occult blood tests (FOBT) in patients with anaemia.

Methods

We tested a group of patients for anaemia that were undergoing a FOBT. Two kinds of FOBTs were used – NDS (gFOBT) and QuikRead go® (iFOBT). Patient demographic data and diagnosis were registered. Results were analysed using statistics program SPSS.

Results

In total, 122 patients underwent FOBT. There were 83 (44 (53.0 %) male, 39 (47.0 %) female) patients of whom 75 (88.2 %) were tested for anaemia. Mean age was 68.9 ± 19.5 years. 82 patients (98.7 %) had positive NDS test, 59 (71.0 %) had positive QuikRead go® test. 62 (82.6 %) patients had anaemia. 13 (17.5 %) patients with positive NDS test did not have anaemia. 13 (23.2 %) patients with positive QuikRead go® test did not have anaemia. 4 (14.2 %) patients with highest QuikRead go® test value (> 1000 ng/ml) did not have anaemia whereas only one patient (8.3 %) with highest NDS value (4 crosses) did not have anaemia. 24 (29.2 %) patients with positive NDS test had a negative QuikRead go® test results (< 75 ng/ml). 1 patient with negative NDS had a positive QuikRead go® test results (> 1000 ng/ml). Sensitivity of NDS test was 98.3 %, for QuikRead go® – 75.8 %.

Conclusions

1. Almost a quarter of patients with positive FOBT did not have anaemia.
2. Almost 30% of patients with positive NDS test had negative QuikRead go® test suggesting false positive results since there are factors that might influence the results (inadequate diet before the test).
3. Sensitivity is higher using NDS method whereas specificity is higher in QuikRead go® method.

Further investigations in patients undergoing faecal occult blood test

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Introduction

Faecal occult blood tests are important screening methods for colorectal cancer (CRC). Studies show that mortality of CRC is lower in annually screened patients. If a test is positive, further investigations like colonoscopy, sigmoidoscopy or others should be done.

Study aims

Our aim was to evaluate the frequency of further investigations of gastrointestinal (GI) tract in patients with presenting positive faecal occult blood tests (FOBT).

Methods

We analysed patients undergoing FOBT and whether they received further investigations in a case of positive test results. Demographic data, diagnoses were registered. Data analysis was done using statistics program SPSS.

Results

There were 83 patients (39 (47.0 %) female, 44 (53.0 % male) patients. Mean age was 68.9 ± 19.5 years. 82 patients (98.7 %) had positive NDS test, 59 (71.0 %) had positive QuikRead go® test. From those with positive NDS test, 74 (90.2 %) did not receive a colonoscopy, 44 (53.6 %) did not receive fibrogastroscopy; 6 (7.2 %) received irigoscopy and 6 (7.2 %) had rectoscopy. From those with positive QuikRead go® test, 51 (86.4 %) did not receive colonoscopy, 28 (47.4 %) did not receive fibrogastroscopy; 4 (6.7 %) had irigoscopy and 5 (8.5 %) had rectoscopy. One patient with negative NDS test received fibrogastroscopy whereas 8 with negative QuikRead go® test received fibrogastroscopy that revealed erosions, ulcers or polyps. One patient with negative QuikRead go® test received irigoscopy that revealed no pathologies.

Conclusions

1. More than 50 % patients with positive FOBT did not receive colonoscopy, which is the most common technique for further investigation.
2. Patients with negative FOBT that received further investigations, all but one was diagnosed with GI tract pathologies.
3. NDS test was positive in more patients than QuikRead go® test suggesting false positive results.

Chronic hepatitis C: clinical course and outcome

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Introduction

Each year the number of people infected with chronic hepatitis C (HCV) increases by 3–4 million, whereas in Latvia, epidemiological research data indicates this number increases by more than 1000 people. It is important to diagnose the infection as soon as possible to prevent complications such as portal hypertension, liver cell insufficiency and hepatocellular carcinoma from occurring.

Study aims

To investigate HCV clinical course by analysing genotype, stage of fibrosis at the time of discovery.

Methods

137 cases of chronic HCV were enrolled in this retrospective study by analysing medical records of patients who were admitted to hospital "Gaiļezers" of Rīga East University hospital from January 2014 to December 2016. Statistical data was processed by IBM SPSS and Microsoft Excel.

Results

From 137 total cases, 49 (35.77 %) were women from whom in 9 (18.37 %) cases *exitus letalis* was observed and 88 (64.23 %) were men from whom in 21 (23.86 %) case *exitus letalis* was observed. HCV genotype data was available for 69 cases, from which genotype 1b was determined in 38 (55.07 %), genotype 3 in 17 (24.64 %), genotype 1 (undifferentiated) in 12 (17.39 %), genotype 2 in 1 (1.45 %) case and genotype 1a in 1 (1.45 %) case. Stage of fibrosis was available for 102 cases, from which 6 (5.88 %) had stage 0, 35 (34.31 %) had stage 1, 10 (9.80 %) had stage 2, 6 (5.88 %) had stage 3 and 45 (44.12 %) had stage 4. HCV complications were diagnosed in 78 cases, from which the most common were: portal hypertension 66 (84.62 %), liver cell insufficiency 60 (76.92 %) and hepatocellular carcinoma 11 (14.10 %).

Conclusions

Male patients had higher mortality and were generally more represented in the study compared to female patients. The most common HCV genotype was 1b and the least common were 2 and 1a. Almost half of the patients were diagnosed with HCV at the fibrosis stage 4. From all observed complications the most prevalent was portal hypertension.

Authors