ABSTRACT BOOK

e-Posters

THE ROMANIAN BIENNIAL MEETING OF NEUROGASTROENTEROLOGY WITH INTERNATIONAL PARTICIPATION

24-26 March 2022

Cluj-Napoca, Romania

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CONTENT

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Foreword

We have the pleasure to present here the abstracts of some of the oral presentations and of all the posters displayed during the Meeting of the Romanian Society of Neurogastroenterology with International Participation, Cluj-Napoca, Romania, 24-26 March 2022.

While the meeting included fine speakers representing outstanding leaders of opinion from Romania and Europe, the poster session included research carried out by young investigators from Romania, Moldova and Albania. This offers us a frame to look into the landscape of neurogastroenterological research and clinical practice in this part of Europe. You will find out that the interest in functional and motility disorders of the gastrointestinal tract is large and many interesting studies have been performed and reported.

Now that the e-posters of NeurogastRO 2022 have been collected in this abstract book, we wish you a useful and satisfactory reading.

The editors

e-Posters

Peculiarities of Irritable Bowel Syndrome in comorbid patients with COVID-19

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Introduction. The COVID-19 pandemic has severely affected patients with Irritable Bowel Syndrome (IBS), which has led to a change in the symptoms of Brain-Gut axis disease.

Aim. The aim of this study was to evaluate the particularities of IBS symptoms in comorbid patients with COVID-19 positive.

Material and methods. In the prospective study, 31 patients with IBS + COVID-19 positive were examined compared to 34 patients with IBS without infection, representing the control group (diagnosis was established according to ROME-IV criteria, as well as after exclusion Crohn's disease, ulcerative colitis, CDI (Clostridium Difficile Infection) and colorectal cancer The mean age was 38 ± 2.1 years, the ratio of women to men was 4: 3 All patients underwent fibrocolonoscopy (FCS) with biopsy , Stool Ag-Hp test, quantitative / qualitative calprotectin, onco-markers (CEA, CA-19.9, CA-153, CA-125).

Symptoms of IBS were assessed at the beginning and end of COVID-19 acute and symptomatic COVID-19 infection in progress (according to NICE division).

Results. Division according to ROMA IV criteria highlighted: IBS-constipation - 7 patients (22.6%), IBS-mixed - 12 patients (38.7%), IBS-diarrhea - 9 patients (29%), IBS-unclassified - 3 patients (9.7%). Of patients with positive SII + COVID-19 (58.1%) reported a deterioration of symptoms: diarrhea and mixed symptoms (alternating constipation / diarrhea), as well as pain syndrome. SII predominantly with diarrhea was positively associated with COVID-19. In the control group IBS patients stated that their symptoms remained unchanged.

Conclusions. Patients with IBS comorbid with SARS CoV-2 infection have been adversely affected by the COVID-19 pandemic, which should be considered at the developmental stage and in the unspecified post-COVID syndrome.

Meditation and Irritable Bowel Syndrome – a soft healing approach

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Background. Irritable bowel syndrome (IBS) is the condition with the highest prevalence among gastrointestinal functional diseases (between 7-10% of the general population, globally). It is estimated that about 40% of gastroenterology consultations are due to functional disorders of the digestive tract. Treatment guidelines for IBS continue to be based mainly on symptom control, often unsatisfactory. Studies on this topic estimate the percentage of patients satisfied with the standard treatment received is less than 50%, many of whom resort to alternative medicine solutions. Meditation-based therapies, in various techniques, have been shown to be significantly effective in multiple conditions: chronic pain, affective disorders, somatization disorders, chronic inflammation, generally.

Objectives. To analyze the effectiveness of meditation as a therapy in the treatment of IBS.

Methods. We undertook a systematic review of randomized controlled trials in adult subjects with IBS. We assessed the meditation-based therapies effect on symptomatology, quality of life, anxiety, and depression and then conducted a meta-analysis. The search was performed on PubMed, PubMed Central, EMBASE, Cochrane Database, Scopus, Web of Science, Cinahl, PsychInfo, Lilacs databases. The methodological quality of the Cochrane Risk of Bias study was assessed.

Results. The studies identified as eligible following the screening and selection process were evaluated methodologically. There was an increased risk of systematic errors in respect of allocation concealment, blinding of participants and personnel and reporting bias. The improvement of the specific symptoms of IBS (constipation, diarrhea, bloating), the reduction of anxiety and depression, respectively the improvement of the quality of life, were highlighted.

Conclusions. Meditation-based therapies decrease the specific symptoms of IBS, reduce the symptoms of associated mood disorders and improve the perceived quality of life. The analyzed trials, however, carries some methodological shortcomings, which diminish the quality of the observed evidences.

From dyspepsia to gastric cancer

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Introduction. Gastric cancer (GC) is one of the leading health problems worldwide due to its high mortality rate. It is likely that early diagnosis can be achieved by screening the high-risk group. The observed geographic variability in GC appears to be due to a synergistic interaction between H. pylori infection and other factors such as genetic factors (advanced age, male gender, family history of gastric cancer in first-degree relatives), gastric ulcer, salt, nitrate and low consumption of fresh fruits and vegetables, smoking, alcohol, salty and smoked foods, and red meat. Information about these risk factors helps characterize individuals at risk of GC during their lifetime. In addition, recent advances in basic research on H. pylori -associated carcinogenesis have explained that NO derived from iNOS plays a crucial role in the process of gastric carcinogenesis. iNOS expression has been reported to be absent in the normal gastric mucosa, increases significantly in H. pylori-negative patients with chronic gastritis, and increases significantly in H. pylori-positive patients with chronic gastritis.

Material and methods. We enrolled 93 subjects and recorded theirs baseline demographic and clinical characteristics, divided into 3 subgroups: 34 patients with chronic atrophic gastritis (CAG), 32 with intestinal metaplasia (IM) and 27 with dysplasia of the gastric mucosa aged 39 to 68 years (mean age 53.5 years), including 36 women and 57 men. In all cases, endoscopic examination methods were applied: improved narrow-band endoscopy (NBI +) and enhanced endoscopy using Near Focus (NF) technology. The diagnosis was based on histology of biopsy specimens from specific anatomical locations of the gastric mucosa, using the updated Sydney system and OLGA/OLGIM. The determination of NO metabolites in blood serum and gastric juice was performed by spectrophotometric method.

Results. The analysis of the correlation between the severity of gastric mucosa damage in CAG, determined according to OLGA/OLGIM stages, and the results of serological examination, found that with increasing CAG severity, increase serum NO and NO values in gastric juice. It was obtained a direct correlation, of medium intensity and statistically significant between OLGA stages and serum NO values ($\rho=0.41$, $p<0.001$), a direct correlation, of medium intensity and statistically significant between OLGA stages and NO values in gastric juice ($\rho=0.33$, $p<0.001$).

Similar results were obtained for the OLGIM staging system. A direct correlation was obtained, of medium intensity and statistically significant between OLGIM stages and serum NO values ($\rho= 0.72$, $p<0.001$), a direct correlation, of medium intensity and statistically significant between OLGIM stages and NO values in gastric juice ($\rho=0.56$, $p<0.001$).

Conclusions. Evaluation of the relationship between oxidative stress and early onset of GC revealed a significant increase in iNOS expression in cancer cells compared to non-cancer cells, which may play an important role in associated carcinogenesis HP-induced. NO and iNOS value can be an important screening indicator for predicting precancerous gastric lesions and GC.

Functional dyspepsia and Helicobacter Pylori infection in Romanian medical students

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Background. Recent data suggest that the prevalence of Helicobacter pylori (HP) infection in Romania has been declining in the last 30 years. There are no data related to the prevalence of HP infection as well as that of dyspepsia among medical students in Romania. The aim of this study was to evaluate the presence of functional dyspepsia and HP infection among Romanian medical students and to assess the relationship between dyspepsia and infection.

Methods. We conducted a study on 150 students from the Iuliu Hatieganu University of Medicine and Pharmacy of Cluj-Napoca, Romania (102 F and 48 M, mean age 21 years) during two months by the end of 2019. Each student completed a lifestyle questionnaire, personal history, family history as well as the Rome IV questionnaire for functional dyspepsia. The status of HP infection was determined using the C13- urea respiratory test.

Results. The prevalence of HP infection was 25.33% and 18% met the Rome IV criteria for functional dyspepsia. 37% of students with functional dyspepsia had a positive HP test. From all students 8% had history of HP. Those with a history of HP infection had a 4.45 % (95% CI 1.6-12.37) higher risk of having positive Rome IV criteria for functional dyspepsia than those who had no previous history of infection (p=0.008).

Conclusion. Thus, the present study adds to the body of evidence regarding HP prevalence among medical students, 25.33 % proving positive. Functional dyspepsia was found in 18% of students included in the study. We found no statistically significant correlation between HP infection and functional dyspepsia. Those with a history of HP infection had a higher risk of functional dyspepsia.

Abdominal pain and Irritable Bowel Syndrome after C-section

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Background and aim. The literature has controversial data regarding the influence of the abdominal and pelvic surgery over the appearance of gastrointestinal symptoms like constipation and abdominal pain. The aim of this study was to assess whether women who had a C-section are more likely to develop irritable bowel syndrome (IBS) in the next 6-12 months, than those who have given birth naturally.

Method. A study group of 70 women who had undergone C-section was compared with a control group of 38 women who had natural delivery. The inclusion criteria were: women who had C-section or natural birth in 2020, in Regional Hospital from Korce, Albania. Exclusion criteria: any known gastrointestinal comorbidities. We conducted a telephone interview based on a questionnaire that contained items that diagnose IBS based on Rome IV criteria. The interviews were conducted 9 to 12 months from the moment of birth.

Results. The prevalence of IBS in the group of 108 women was 7.4% (8 patients). In the case group 4.3% (3) subjects had positive IBS criteria and in control group 13.2% (5) resulted IBS positive. All the patients with IBS had subtype C. Subjects ages were between 18 and 40 years. The OR 0.3 (CI95%, 0.07-1.31) does not confirm the hypothesis that C- section may induce IBS more often than natural birth.

Conclusion. The prevalence of IBS resulted to be in the known global range (7.4%). The obstetrical surgery does not appear to have role in developing the abdominal symptoms more than natural birth but a larger group of patients would bring more edificatory answers to the questions that lead the study.

Tissue oxidative stress of the gastric mucosa in patients with chronic viral HDV hepatitis

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Introduction. The progression of hepatic chronic pathological process of HDV etiology is often associated with comorbid gastrointestinal pathology, with progression of the disease.

The aim. To study indicators of oxidative stress (OS) in the gastric mucosa (GM) in patients with chronic viral hepatitis (CVH) HDV in dependence on cytolysis syndrome.

Material and methods. There were evaluated 12 patients with CVH HDV (F/M=3/9), age 28.6±2.6, determined cytolysis indicator ALT, an endoscopic examination of the stomach with a biopsy of the GM, performed to evaluate the Helicobacter pylori (HP) degree of infection (DI) and indicators of malondialdehyde (MDA), and the antioxidant superoxide dismutase (SOD) in the GM. Patients were divided into 2 groups depending on the HP DI. Group I with maximum HP DI n=9 (75%), group II with minimal HP DI n=3 (25%). The control group consisted of 15 practically healthy individuals. The work was carried out within the State Program „Chronic liver and pancreatic diseases: nutritional and surgical aspects" 20.80009.8007.37.

Results. ALT significant increase was revealed in both groups (244.8±29.0.u/l, 160±14.0 u/l, p≤0.001, p≤0.001, accordingly), against control 20±8 u/l. The gastric mucosa changes were more pronounced in 1 gr, depending on the degree of HP infection: with superficial gastritis in 34% cases, erosive gastritis - 42%, compared to 8% and 16% cases in IIgr, accordingly.

The increased MDA levels (24.79±1.2 nmol/L and 22.2±2.1 nmol/L, p≤0.05, p≤0.05, accordingly, compared to control 16.3±1.5 nmol/L) were accompanied with a decrease in SOD in GM in both groups 3.13±0.27 uc/L, 4.08±0.3 uc/L, p≤0.001, p≤0.05, accordingly, against control 5.38±0.4 uc/1gr.

Conclusions. In patients with chronic viral hepatitis HDV etiology revealed a direct relationship between the HP infection degree and severity of cytolysis syndrome, accompanied by oxidative stress in the gastric mucosa.

Post-infectious Irritable Bowel Syndrome after a laboratory-proven enteritis

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Introduction. There are scarce data on the risk factors for post-infectious irritable bowel syndrome (PI-IBS).

The aim. The objective of this study was to determine the risk factors of developing PI-IBS following an acute infectious gastroenteritis (AGE) episode in which, by laboratory tests, the etiological agent was isolated.

Material and methods. The study was conducted on patients admitted to a tertiary center of infectious diseases during three consecutive years. The patients were divided into two groups: a group consisting of patients admitted with AGE (with an isolated etiological agent) and a control group consisting of patients admitted for an acute upper respiratory tract infection (URTI). The subjects were recalled in our center 6 months after the admission and were evaluated with Rome III IBS diagnostic questionnaire and Bristol Stool Form Scale. The questionnaires were paper printed and directly filled in by the subjects.

Results. The response rate in the case group was 5% and in the control group 100%. The prevalence of PI-IBS was higher in patients with AGE, presenting a relative risk (RR) of 4.16 [95% confidence interval (CI), 1.89-9.17], statistically significant ($P<0.001$) vs. URTI. From 28 female patients, 22 patients (79%) developed PI-IBS and from 17 male patients, 3 patients (18%) had developed PI-IBS with a risk of 4.4 (95% CI, 1.56-12.65), $P<0.001$. Regarding the infectious etiology of the AGE, Campylobacter jejuni had the highest risk of developing PI-IBS, RR=1.2 (95% CI, 0.13-3.11), P=0.04 compared with the other agents with a lower risk.

Conclusions. The risk to develop PI-IBS after AGE infection is 4.16 higher than after URTI. Female sex is a risk factor for PI-IBS, 79% of the female patients developed PI-IBS after AGE. The incidence of PI-IBS is highest in patients with Campylobacter jejuni AGE compared with the other agents.

IL-6, IL-2 and Calprotectin in inflammatory bowel disease patients with depression

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Introduction. The bidirectional bowel-brain axis underlies the onset of depression in patients with BII, ¼ of these patients being affected by depression. Its prevalence is higher in patients with active disease. The aim of the study was to investigate the correlation between inflammation and depression in patients with IBD.

Material and method. The prospective study included 30 patients with active BII. Inflammation was assessed by fecal calprotectin (fC) and the cytokines IL-2 and IL-6. Depression was assessed using the Patient Health Questionnaire-9 (PHQ-9). The Spearman test was applied to find out the correlations between depression and inflammation.

Results. The median fC was 355 ug / g (IQR 110), the median IL-2 was 556 U/L (IQR 334) and the IL-6 was 5.65 pg / ml (IQR 3.65). The PHQ-9 had a median of 6.5 (IQR 3.2). PHQ-9 correlated statistically significantly positive with all inflammatory biomarkers investigated, as follows. moderate correlation with IL-2 ($r = 0.53$, $p < 0.01$) and IL-6 ($r = 0.57$, $p < 0.01$) and weak with fC ($r = 0.45$, $p < 0.01$).

Conclusions. Depression correlates with inflammation assessed by IL-2, IL-6 and fecal calprotectin in BII. Encouraging gastroenterologists to identify depression early could improve patients' quality of life and the prognosis of patients with IBD.

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The search for a potential new biomarker for gastroesophageal reflux disease: first experimental steps using High Performance Liquid Chromatography

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Introduction. The diagnosis of gastroesophageal reflux disease (GERD) is currently based on clinical symptoms, response to acid suppressive treatment, endoscopic evaluation and outpatient reflux monitoring. At the moment, there is increasing interest in finding non-invasive, reliable methods that could be helpful in establishing a GERD diagnosis. We present the comparative proteomic analysis of whole saliva and gastric juice mixtures using High Performance Liquid Chromatography (HPLC) as potential fluids for novel biomarker discovery for GERD.

Methods. Whole saliva was collected from two healthy volunteers. Three types of samples were prepared: whole saliva, gastric juice and a mixture of whole saliva and gastric juice (1:2), all of which were acidified to a pH of 1.2 using hydrochloric acid. The samples were vortexed for two minutes at 3.000 rpm and then incubated at 37°C. Three different incubation periods were used: no incubation, 2 hours and 4 hours. Each batch was then centrifuged for 5 minutes at 12.000 rpm. Supernatant samples were then desalted, concentrated and purified using the ZipTip method, mixed with trifluoroacetic acid 0.1% (1:4) and analyzed using HPLC.

Results. The comparative proteomic analysis identified new peaks in the sample containing the mixture of whole saliva and gastric juice that were not present in either of the samples comprised solely of whole saliva or gastric juice. These distinct peaks represent new peptides resulted from the interaction between salivary proteins and gastric juice in an acidic environment similar to the one found in the stomach. Therefore, these peptides may be useful as potential biomarkers for GERD, as their detection in the saliva of patients could suggest gastric reflux.

Conclusion. These results suggest that comparative proteomic analysis could be useful in novel salivary biomarker discovery and warrants further research.

Probiotics and the microbiota-gut-brain axis: focus on patients with depression

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Background. In recent years, a considerable number of studies revealed links between depression disorders and the gut microbiota which is modulated by a bi-directional communication pathway called microbiota-gut-brain axis. Probiotics are living microorganisms which, when consumed in adequate amounts, have a beneficial impact on the host. Clinical research have shown that patients diagnosed with depressive disorders have differences in the composition of intestinal microbiota in comparison with healthy individuals. Also, recent studies indicated that the consumption of oral probiotics containing specific strains of bacteria can regulate the body's response to stress and diminish symptoms of depression.

The aim of this paper is to present the current state of knowledge on the relationship between intestinal microbiota and the effects of probiotics ingestion on patients diagnosed with depression [1].

Methods. The search was conducted in PubMed and Web of Science, the publishing date of the articles being limited to January 2022. The main keywords searched were: "probiotic", "psychobiotic", "microbiota", "gut-brain-axis", "depression", "depressive disorder", "intestinal microflora". The search was restricted to English language and to human studies regarding effects of probiotics on patients with depression, or depression-related symptoms.

Results. Of the 1031 results of the initial search, 251 were duplicates and 744 were excluded for irrelevancy, remaining 36 eligible full-text articles. Out of these, only 7 articles fully met the criteria [2,3].

Conclusions. The results indicate that probiotics may be effective reducing symptoms of depression when administrated as adjuvant treatment to antidepressants. The conducted research demonstrates that the meagre amount of studies on this topic fails to provide a general perspective on the ability of probiotics to reduce depression symptoms. Therefore, further studies must be done at a larger scale, regarding the number of patients and the period of treatment.

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Etiopathogenetical, biochemical and histological aspects of liver injury in COVID-19

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Introduction. The pandemic caused by SARS-COV-2 or novel coronavirus disease (COVID-19) is sweeping through the world. The most common pathology is represented by the affliction of the respiratory tract; however, the involvement of other organs, including the liver, kidney, heart has also been reported.

Methods. An electronic search in MEDLINE, SCOPUS and Web of Science Database was completed. Fitting articles were selected for this review.

Results. The results address the current standings of liver damage in COVID-19, to assess the implication of the therapy related to the liver injury, with a general focus on the mechanisms involved in producing hepatocytic lesions, depending on the presence of underlying liver diseases, reviewing the worldwide perspective on the risks of SARS-COV-2 infection in developing multiorgan dysfunctions.

Conclusions. Liver damage in SARS-COV-2 infection represents an important component of COVID-19 disease. This is most clinically relevant in patients with pre-existing liver disease who have a significantly higher risk of developing a severe form of COVID-19 disease and death. The pathology involves multiple mechanisms, explained by the presence of systemic inflammation, coagulation disorder and immune dysfunction.

Nutrivigilance in gastroenterology

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Introduction. Due to its nutrient content and attractive sensory characteristics, food plays an overwhelming role in maintaining good health. Whether we are talking about organic or conventional plant or animal foods, in addition to maintaining proper internal homeostasis, food ingredients and implicitly processed or processed foods at home, can cause side effects or interact with drugs, that can negatively affect their clearance. The objective of this paper was to identify gastroenterological adverse reactions caused by food ingredients, or food supplements, in order to legislate and implement nutrition surveillance in Romania.

Material and methods. For this work, the databases used were PubMed, ResearchGate and Memorial Sloan Kettering Cancer Center, about Botanicals & Other Products.

Results. Food ingredients and plant resources can cause mild gastrointestinal side effects such as nausea (eg Artemisia annua) or severe ones (liver failure requiring transplantation for Morinda citrifolia (Noni)). Dietary supplements and over-the-counter phytopharmaceuticals may affect the clearance of medicines and thus adversely affect drug treatment, such as Agaricus blazei Murrill (Mushroom), Viscum album, Morinda citrifolia (Noni) and Green Tea which inhibits the metabolism of cytochrome P4503A4 (CYP3A4).

Conclusions. Certain food ingredients and plant resources can cause multiple gastroenterological side effects. Legislation and implementation of health surveillance is important for the well-being of the population and also for lowering the costs of the health system. Adverse reactions should be reported by healthcare professionals (physicians and pharmacists), dietitians, nutritionists, food industry engineers, food supplement traders, and the general public, in order to implement a proper management of nutritvigilance în gastroenterology.

Treatment of anal fissures

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Introduction. Regardless of the causes of chronic constipation (genetic or neurological diseases, drug treatments, lifestyle or diet), complications can range from hemorrhoids, anal fissures, colonic ulcers to diverticulosis and diverticulitis. Due to spasms of the internal anal sphincter muscle exposed behind the fissure, pain occurs that over time can lead to chronic or infected anal fissures and a decrease in patients' quality of life. The aim of this study was to develop a treatment for anal fissures, naturally, without preservatives or other synthetic substances and to evaluate its effectiveness in a prospective randomized double-blind clinical trial versus placebo.

Material and methods. For this paper, the databases used were PubMed and the World Intellectual Property database - for verification of existing patents. The clinical study to verify the effectiveness of the new healer was performed based on the Opinion of the Ethics Commission and all patients signed information and consent forms.

Results. According to the established criteria, in the last 5 years, 8 articles on randomized controlled trials and 8 articles on clinical trials for the treatment of anal fissures have been identified. At the global level, there are 90 patents. Most patents are pharmacological treatments. Other patents are obtained for traditional Chinese medicinal compositions. The new treatment developed is of the type of a lipophilic cream, which after application forms a protective, lubricating and emollient film. The prospective randomized versus placebo double-blind clinical trial included 30 patients. No patients experienced any side effects.

Conclusions. The new anal fissure treatment is a natural alternative to anal fissure treatment. It reduces the discomfort that occurs on the skin, prevents the risk of bleeding, reduces the discomfort that occurs on the hemorrhoidal veins and anal mucosa and has anti-inflammatory, astringent, antioxidant, anti-edematous and capillary-protective action. It does not contain preservatives or other synthetic substances.

A new reality: functional symptoms post-COVID 19

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Background. Patients with COVID-19 frequently presents with gastrointestinal (GI) symptoms, but it is unknown how many of these symptoms are persistent after the infection. The purpose of this study was to estimate the prevalence and characteristics of GI symptoms after COVID-19.

Methods. We prospectively analyzed 50 patients 6 months after post-COVID 19. The prevalence of GI symptoms was estimated, and risk factors were assessed.

Results. 21 of the 50 patients (42%) remains with GI symptoms (29.2%): diarrhea nine (18 %), constipation five (10%), bloating eight (16.4%), nausea five (10%), and dyspepsia fourteen (28%).

Conclusion. A large number of patients remains with GI symptoms after COVID-19. Clinicians must be aware of the ongoing GI effects of COVID-19 after recovery and propose diagnostic criteria for these disorders.

Impact of COVID-19 on the IBS patients quality of life

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Introduction. The Covid-19 pandemic has fundamentally changed the landmarks of the world we live in, with considerable effects on both physical and mental health. The pandemic has not only been an epidemiological or immunological problem, but it has also had a significant psychological impact. Irritable bowel syndrome (IBS) has an negative impact on the individual's functioning and quality of life (QoL). The present study aims to assess the impact of the COVID-19 pandemic on the QoL of patients with IBS.

Material and method. We conducted a descriptive observational study, which included 60 adult patients diagnosed with IBS. The study sample consisted of two subgroups: a retrospective-pre-pandemic group (group A) and a prospective-pandemic group (group B). Group A included 30 IBS patients who were evaluated in 2017. Group B included 30 patients with known or confirmed IBS diagnosis, evaluated between january and may 2021 – the period of the COVID-19 pandemic (prospective), consecutively recruited. IBS was diagnosed according to ROME IV criteria. All the patients filled in a QoL assessment questionnaire – SF-36 (Short Form-36 questionnaire). Subsequently, the two samples were comparatively assessed.

Results. Correlating the values of SF-36 scores from 2017 (before the pandemic) with 2021 (during the pandemic) we found a significant decrease in the QoL scores in patients from the pandemic group (group B).

Conclusions. SF-36 scores were significantly lower in 2021 compared to 2017 ($p < 0.05$), showing that during the Covid-19 pandemic, patients with IBS had a more affected QoL.

Food: friend or foe in patients with Irritable Bowel Syndrome? What's new in 2022?

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The relationship between food ingestion and symptom onset among patients with irritable bowel syndrome (IBS) is still controversial. With so many dietary options to choose from, we still fail to improve the quality of life of patients with IBS. The main goal of any type of dietary treatment of IBS is to provide the patients with tools to reduce their symptom burden, while maintaining a balanced, high-quality diet, without misconceptions about the negative effects of food products on their health, and to support a self-reliant attitude. Easier said than done. Choosing dietary treatment solely based on the doctor's or dietitian's preferences, without clear management of the patient's expectations, is a mistake that is often made. Focusing too much on a low-FODMAP or gluten free, dairy free diet, for example, is ill advised. A step-up approach of targeted elimination of specific food antigens, rather than all of them, may be more successful, as this personalized approach is more patient friendly. Understanding the mechanisms by which the "perfect" diet generates symptoms such as aberrant abdominal pain is currently getting the well deserved attention. We now acknowledge that the mucosal immune system provides a balanced response to pathogens and harmless commensal bacteria or food antigens, thereby limiting unnecessary inflammation and concomitant tissue damage. This is achieved by oral tolerance, the active suppression of cellular and humoral responses to orally administered antigens. Interference with tolerance to dietary antigens disrupts intestinal homeostasis. Consequently, the constellation of abdominal pain and altered bowel patterns will later define IBS. Unfortunately, IBS still remains a debilitating and difficult-to-treat condition for which no curative therapies are currently available.

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Challenges in diagnosing and treating centrally mediated abdominal pain syndrome – a case report

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We present an unusual case of abdominal pain, experienced by a 73 years old woman for 40 years, with rare and short periods of calmness.

Case report. Between years 1973 and 2016, she had multiple consultations and admissions in different hospitals, thus many opinions were raised about her symptoms by different physicians. During this time, she received treatment with anti-inflammatory drugs, gut motility regulators, gastric antisecretory agents and antiseptic drugs, with a poor response.

Discussion. Following a thorough investigation, the biological, imaging and endoscopic findings could not identify the etiology of the chronic visceral pain. Thus, the diagnosis of centrally mediated abdominal pain syndrome was established, considering the Rome IV criteria. We initiated the treatment with low dose of tricyclic antidepressants, leading to a complete remission of symptoms after approximately one month of therapy.

Conclusion. In this case we were able to observe the difficulty of establishing a clear diagnosis algorithm regarding a functional condition. Also, the management of this condition was based on the relationship between the doctor and the patient, as well as the use of a controversial therapy with tricyclic antidepressant.

Loss of tolerance to food antigens in IBS?

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Irritable bowel syndrome (IBS) is a debilitating and difficult-to-treat condition for which no curative therapies are currently available. More and more patients surviving the Covid19 pandemic have been diagnosed with IBS, and claim a decrease in quality of life with onset of gastrointestinal symptoms following a meal. Unfortunately, the underlying mechanisms of food-induced abdominal complaints still remain unknown. We are aware that the intestinal immune system delivers an adjusted response to pathogens and harmless commensal bacteria and food antigens, while preventing unnecessary inflammation and tissue damage, a response called oral tolerance. Loss of oral tolerance to dietary antigens by means of viral or bacterial infections disrupts intestinal homeostasis and apparently enables the onset of abnormal intestinal pain and visceral hypersensitivity, which are hallmark symptom of IBS. Furthermore, several studies have reported that enteric infections and specific toxins, may trigger an immune response that leads to the production of dietary-antigen specific IgE antibodies which are limited to the intestine. Additionally, injection of food antigens (gluten, wheat, soy and milk) into the rectosigmoid mucosa of patients with IBS induces local edema and mast cell activation. In conclusion, it is becoming evident that IBS may be considered a part of a spectrum of food-induced disorders mediated by mast cell activation. Not all patients develop IBS post-infectious or food antigen exposure, but those who do, share a risk that depends on the genetic background favorable for an atopic immune response.

Abdominal epilepsy - unusual case of abdominal pain

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Introduction. Abdominal epilepsy (AE) is a variant of temporal lobe epilepsy commonly seen in pediatric age group. Adult patients with AE typically have recurrent abdominal symptoms associated with neuropsychiatric manifestations. Because clinical suspicion is crucial for an adequate diagnosis, physicians should be aware of the existence of AE in both children and adults.

Case presentation. We present the case of a 50-year-old female patient with no previous significant medical history who was referred by the general practitioner for atypical abdominal pain. She had numerous admissions in the Emergency Department for recurrent clusters of abdominal pain since one year. The pain originated in the left iliac fossa and radiate to the umbilical area with obvious distress, occasionally associated with lose stools and vomiting. Each episode would last up to 10 minutes, and episodes would vary from 1 to 10 episodes every day. These episodes began to recur almost every day, several times a day, and at unexpected moments, unrelated to food intake or diurnal variation. Pain was concurrent with severe headache, dizziness, extreme anxiety and lethargy. Abdominal MRI, gastrointestinal endoscopy, and blood chemistry results were within normal range. Abdominal migraine and porphyria were ruled out considering the duration of episodes, lack of any family history and absence of other findings supportive of porphyria. Abdominal epilepsy was then considered as the diagnosis and was supported by electroencephalogram (spike and slow wave complexes in bilateral leads) after neurological evaluation. Patient was started on tablet sodium valproate sustained release 600 mg in two divided doses. The patient reported an immediate improvement in subjective experience of symptoms.

Conclusions. Abdominal epilepsy in adults can be masked or misdiagnosed as a physical or psychological disorder. Creating awareness among physicians is important to be aware of organic etiologies arising in patients with presumed functional symptoms.

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Pandemic symptoms mimicking a neuroendocrine tumor

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Introduction. Neuroendocrine tumors (NETs) encompass a variety of malignancies developed from the diffuse neuroendocrine system with slow growth rate and capacity to produce a variety of hormones and vasoactive substances. Due to large distribution in human body, NETs exhibit variable clinical behavior. However, the most frequent symptom encountered among patients with NETs is diarrhea.

Case presentation. A 58-year-old man presented with intermittent upper abdominal pain for 8 months and watery stools 4-6 episodes per day for 1 month. He also reports having a dry cough for 6 months. He was previously admitted for SarsCov 2 infection and an episode of Clostridium difficile colitis. He notes that some of the symptoms are similar to those previously experienced, so he was not alarmed. He fails to improve and checks in with his general practitioner who refers him to the gastroenterologist. Physical examination did not reveal significant findings. Laboratory assessment showed normal blood count, total bilirubin levels of 1.35 mg/dl. GGT 104U/l. AFP 1.71 IU/ml. Ultrasound of the abdomen revealed multiple hypoechoic lesions in both liver lobes. The chest X-Ray revealed opacities and increased diffuse density bilaterally. A CT scan was performed and it revealed hepatic metastases and a 4 cm ileal mass. Chromogranin A and serotonin levels were assessed with increased values, and a liver biopsy sample was obtained. Immunohistochemistry was positive for chromogranin A, Ki67 positive for 2% tumor cells and CD56 weakly positive for 40% of cells. He was referred to Oncology clinic and treated with Somatuline 30mg twice monthly.

Conclusion. Global incidence of NETs is increasing due to better diagnostic tools. NETs with small intestinal localization frequently associate carcinoid syndrome, presenting with or developing metastatic liver disease. Chronic diarrhea is a challenging condition for differential diagnosis and NETs should be keep in mind by all practitioners especially in pandemic times.

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Self perceived lactose intolerance in IBS patients: a systematic literature review

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Functional digestive disorders represent a frequent category of gastrointestinal (GI) disorders, with a prevalence between 20% and 40% in general population. One of the most present and most researched functional digestive disorder is the irritable bowel syndrome (IBS). IBS is affecting a considerable proportion of the population, having a great impact on their quality of life.

Management of these patients is difficult, due to unclear pathophysiologic mechanisms and the non-pharmacological treatment that is very common in this disorder. Lactose-free diet is an usual recommendation made by physicians. We searched in the literature for a possible relation between lactose intolerance and self-perceived lactose intolerance, and also, we tried to find the role of lactose free diet in the IBS patients.

All the articles included in this review were found using PubMed database. No significant differences were showed, in some studies, between IBS patients and controls regarding lactose malabsorption prevalence. On the other hand, another study showed that lactose malabsorption cannot be linked with self-reported milk intolerance.

We concluded that is not recommended as a routine the lactose-free diet for patients diagnosed with IBS. Also, the hydrogen breath testing is not recommended by routine in identifying a possible lactose malabsorption in IBS patients.

Parkinson's disease and gastrointestinal dysfunction: management difficulties

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Background. Parkinson disease (PD), a neurodegenerative disease, which is commonly increased in elderly people has become a burden for gastroenterologists due to management difficulties of gastrointestinal dysfunction caused by autonomic nervous system involvement. The purpose of this case report was to state the major difficulties in management of gastrointestinal dysfunction in PD.

Case Report. We are going to present the challenging case of a 71-year-old man treated for Parkinson's disease who was referred to our institution for abdominal discomfort, mostly postprandial, chronic constipation and abdominal bloating. At the time of presentation, the patient was taking Levodopa/Benserazide, Carbidopa/Entacapone/Levodopa, Rasagiline and Rotigotine. The patient's Parkinson disease symptoms included increased frequency of on-off phenomena, exacerbation of gait disorders, and paresthesias. There was no organic lesions of the gastrointestinal system that could explain such disturbances. Despite the maximum treatment for the underlying pathology and the administration of an optimal dose of prokinetic, the digestive impairment was difficult to control (the patient experienced 2 exacerbations within 10 months).

Conclusion. This case highlights that the gastrointestinal complications represent a major source of functional disability and reduced quality of life. Even with proper treatment of PD, gastrointestinal complications are difficult to manage.

Gastroesophageal reflux disease after COVID-19 infection

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Introduction. A common cause for a consultation in the gastroenterology clinic is the symptoms of gastroesophageal reflux disease. Unfortunately, the number of patients who approached in 2021 has been increasing, with symptoms after Covid-19.

Method. Out of 130 patients with symptoms characteristic of gastroesophageal reflux disease following Covid-19 infection over a period of 4-12 weeks, 100 patients were included in the study. The inclusion criteria were: age over 18 years, obtained informed consent, symptoms absent prior to Covid-19 infection. We used the GERDQ scale to identify the intensity of symptoms at the time of first presentation and after 4 weeks of treatment.

Results. For 75 patients, the GERDQ score was between 11 and 18 points, but the digestive symptoms - heartburn, regurgitation, nausea - were accompanied by extra-digestive symptoms - dyspnea, asthenia, myalgia. After one month of treatment, the patients completed the GERDQ questionnaire again and we compared the results: 40 patients had the same score as the first evaluation. Only 30 patients accepted the assessment by upper gastrointestinal endoscopy, but no lesions were found to justify the intensity of the symptoms.

Patients have a constant need to be evaluated, in order to be able to find elements that indicate the optimal way to treat them. The treatment used included proton pump inhibitors, antacids and prokinetics, with variable results in the study group.

Conclusions. The potential connection between the symptoms of gastroesophageal reflux disease and Covid-19 infection requires further study, our main goal being to find the right way to treat patients in order to improve the intensity of symptoms.

Irritable Bowel Syndrome or exocrine pancreatic insufficiency in patients with functional gastrointestinal disorders - an evasive diagnosis

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Functional gastrointestinal disorders specific to irritable bowel syndrome (IBS) could also be due to underlying pathologies, the symptoms of which may overlap with the clinical picture of IBS. According to data from the literature, a causative or aggravating factor of clinical manifestations that can be considered in patients with unexplained persistent diarrhea and abdominal pain is the pancreatic damage in relation to early-stage of exocrine pancreatic insufficiency, confirmed by low values of fecal elastase.

We present the case of a 65-year-old patient with functional gastrointestinal disorders classified as IBS, a diagnosis established 3 years ago (clinically –The Rome IV criteria and colonoscopic without organic lesions, except for a few uncomplicated infracentimetric diverticula). Under symptomatic treatment, a slight improvement of the digestive manifestations is obtained for a short term. The recurrence of painful symptoms and intestinal transit disorders motivates the extension of the case assessment with clinical and biological investigations, imaging documentation (ultrasound, CT), endoscopic investigations (upper digestive endoscopy, repeating of colonoscopy) without suggestive evidence for digestive organ damage. Determination of fecal elastase indicates values below 200 μg/g. Pancreatic enzyme therapy associated with symptomatic medication leads to significant improvement of the painful symptoms and the intestinal transit disorders.

In conclusion, pancreatic damage in early stages of pancreatic exocrine insufficiency should be considered in patients with clinical manifestations of IBS, especially in cases of persistent abdominal pain and intestinal transit disorders.

The role of artificial intelligence in digestive endoscopy for the diagnosis and management of gastrointestinal disorders

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Artificial intelligence is a computer-based concept capable of mimicking human thinking. In healthcare artificial intelligence development aims to enhance the physician's capabilities and shorten the manual labor giving more time to interact and evaluate our patients.

Gastrointestinal disorders can contribute greatly to a patient's poor quality of life. The purpose of gastrointestinal endoscopy is to exclude other gastrointestinal diseases and support the diagnosis of gastrointestinal disorders. When a digestive endoscopy exploration is of high quality, there is little uncertainty in the physician's diagnosis.

In digestive endoscopy artificial intelligence has attracted a growing amount of attention. Artificial intelligence is highly relevant in endoscopy due to several key features: it may enhance the quality of digestive endoscopy; may help to reduce inter-operator variability; may compensate for performance deficits due to fatigue, anxiety, and stress; and may be able to objectively assess the endoscopy quality parameters.

The two main artificial intelligence computer systems used in digestive endoscopy are computer-aided detection (CADe) which is capable of identifying and locating lesions in the digestive system and computer-aided diagnosis (CADx) which is capable of describing a lesion (malignant or benignant). Using these features the endoscopist may be more confident that no lesions were missed and may be able to support a gastrointestinal disorder diagnosis in clinical context.

In conclusion, artificial intelligence has the potential to enhance digestive endoscopy in the near future. Colonoscopy of high quality and high resolution is essential in the diagnosis of functional digestive disorders. Therefore, there is a possibility of lowering physician uncertainty in supporting the diagnosis of gastrointestinal disorders when using AI. Last but not least, novice endoscopists may have similar results as expert endoscopists while performing artificial intelligence-enhanced endoscopy.

Free Papers

Gastrointestinal motility disorders guidelines in the COVID-19 pandemic

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Introduction. In 2020, the European Society for Neurogastroenterology and Motility (ESNM) has launched the guide recommendations for conducting gastrointestinal motility and function testing in the early recovery phase of the COVID-19 pandemic.

Material and methods. Confirmed COVID-19 cases are individuals who have tested positive on PCR and those who have a COVID-19-positive HR-CT. Individuals with suspected COVID-19 have symptoms/signs such as: common cold symptoms, temperature of 37.5ºC or higher, severe fatigue, dysgeusia and anosmia, diarrhea lasting 4-5 days without apparent cause. A high-risk state of COVID-19 includes a history of close contact with COVID-19 patients within a 2-week period and/or a history of travel to an area of COVID-19 outbreak within 2 weeks.

Results. Risk stratification for the investigation is scored as follows: Healthcare professional: 0, immunized; 1, unknown; Patient: 0, immunized; 1, unknown; 4, suspected or at high infectious risk; 5, confirmed infection; Procedure: 1, nonaerosol generation; 2, aerosal generation. When the sum of the score is 0-2, the procedure is considered low risk, if the sum is 3-4, the procedure has moderate risk and a high-risk procedure has a sum score above 4. Urgent explorations include: High-resolution manometry (HRM) for functional severe dysphagia, HRM before treatment for achalasia with major impact, HRM and 24-hour pH-multichannel intraluminal impedance (pH-MII) for noncardiac chest pain and refractory esophageal symptoms with high impact in quality of life, anorectal manometry plus balloon expulsion test in the pre- and postoperative assessment before colorectal surgery for cancer.

Conclusions. The risk of COVID-19 infection relative to patients and healthcare professionals is assessed by stratifying them according to the investigation performed in low, moderate and high risk procedures. Guidelines suggest healthcare personnel evaluate the urgency of the procedure, providing test planning, staff education/ training and personal protection equipment use.

Globus-functional or organic symptom? Case report of Killian-Jamieson diverticulum

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Globus is a persistent or intermittent non-painful sensation of a lump or a foreign body in the throat that frequently improves with eating and is generally unaccompanied by dysphagia or odynophagia. Although a common symptom, its etiology remains unclear. Both psychological and somatic conditions are believed to cause globus, most often being associated with gastroesophageal reflux disease, laryngopharyngeal reflux, esophageal motor disorders, improper upper esophageal sphincter function and psychiatric disorders.

We report a case of a 68-year-old man who presented to our clinic with a 3-year history of moderate anemia uncovered after routine blood tests, progressive dysphagia for solids, globus sensation and food bolus impactions resolved spontaneously. Upper endoscopy revealed a wide-mouthed diverticulum, measuring 2-3 cm, with normal mucosa and food residue inside, just below the upper esophageal sphincter, on the left side of the esophageal wall and also type 1 hiatal hernia with diffuse mucosal bleeding. Subsequent barium swallow study showed as well a 25 mm left-sided outpouching arising from the anterolateral wall of the proximal cervical esophagus, consistent with a Killian-Jamieson diverticulum. Killian-Jamieson diverticulum is a rare condition with a highly variable clinical presentation, most often reported symptoms being dysphagia, regurgitation and globus sensation.

Persistence of post-COVID digestive functional symptoms

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Introduction. With the advent of the CCovid pandemic, the spectrum of functional digestive disorders has amplified and their persistence raises many questions about the mechanisms and therapeutic strategy.

Material and method. A group of 30 patients (15 women, 15 men) in a gastroenterology outpatient department with symptoms of irritable bowel syndrome (IBS) or dyspeptic syndromes (SD) 3-12 weeks after confirmation of CCovid was analyzed.

Results and discussion. Patients had no previous symptoms of digestive symptoms, the onset of symptoms was during Covid infection, the symptoms were persistent continuously for more than 15 days after onset. A number of 10 patients had IBS diarrhea symptoms (all with antibiotics and antiviral treatment during the Covid period), 2 patients had IBS constipation symptoms (one with antibiotics), and 6 patients had IBS mixed symptoms (4 with antibiotics and one of them also with antiviral treatment) and 12 had SD symptoms (9 with antibiotic therapy including 8 with antiviral treatment). All patients received anti-inflammatory treatments during the Covid period. Intestinal dysbiosis tests performed on 18 of the patients had significant changes in 16 of them (all with antibiotic therapy and moderate-severe forms of the disease).

In a patient with IBS-diarrhea, the appearance of rectorrhagia at 6 weeks after the onset of covid, required a colonoscopy that identified an aspect of ulcerative colitis, microscopically confirmed.

The vaccine status of the patients has not been investigated.

Conclusions. Persistence of functional digestive symptoms after Covid is often found in outpatient gastroenterology services, which may be due to the infection itself, the effects of antibiotic, antiviral, anti-inflammatory treatments for Covid and the psycho-emotional impact of the disease on the patient. However, the detection of an organic digestive disease (asymptomatic or previously non-existent) should be considered if symptoms do not resolve.

Pathological migration of suprahiatal esogastric junction and the reversible hiatal hernias

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Introduction. In various physiological and pathological conditions, the gastroesophageal junction (GEJ) can migrate suprahiatally. The range of reversible displacement of the suprahiatal GEJ is different. From this point of view, there are 3 anatomical-physiological situations: (1) reversible physiological migration of suprahiatal GEJ, (2) excessive (pathological) migration of suprahiatal GEJ and (3) reversible hiatal hernias. The differentiation of these situations is not well clarified. The objective of the present study was the endoscopic evaluation of the rate of causal-associated pathology as a criterion for differentiating the above situations, depending on the diapason and the type of suprahiatal GEJ migration.

Material and methods. 470 cases of migration of GEJ through the hiatal orifice into the posterior mediastinum (suprahiatal) were analyzed endoscopically (proendoscopy and retroflexion of the stomach endoscope). The investigations were performed by an endoscopist. The Olympus Exera III GIF HQ190 endoscopic complex was used. The methodology of endoscopic measurements and the determination criteria for the associated pathology were unique for all patients. Causal-associated pathology was considered erosive reflux esophagitis, post-erosive and post-reflux scarring sequelae, esophageal columnar metaplasia with gastric metaplasia and Barrett's esophagus. The rate of associated pathology was calculated according to the "absent-present" criterion for each patient regardless of the number of associated pathologies and their type. The difference in the rate of pathology associated with suprahiatal GEJ migration was calculated for the groups delimited with the migration height of 0.5 cm, 1.0 cm, 1.5 cm, 2.0 cm, 2.5 cm and 3.0 cm.

Results and discussion. Reversible migration of suprahiatal GEJ below 0.5 cm was pathologically-associated in 2.94%. Corresponding to the height of the suprahiatal GEJ migration, the rate of the associated pathology was: for the 0.5 ÷ 0.9 cm range - 8.54%, for the 1.0 ÷ 1.4 cm range - 9.20%, for the 1.5 ÷ 1.9 cm range - 10.45%, for the 2.0 ÷ 2.4 cm range - 93.62%, for the 2.5 ÷ 2.9 cm range - 84.5%, for the migration ≥3.0 cm - 87.5%. Thus, two significant points were assessed: the migration below 0.5 cm was causally-pathologically associated with an insignificant rate (2.94%) of reflux pathology and the migration distance of 20 mm was assessed as the point with which it makes the highest difference (10.43% and 93.42%) in causal-pathological association of adjacent tuning forks.

Pathologically insignificant associated reversible migration could be considered a physiological limit. The point of significant differentiation of the pathological association in reversible migration of the suprahiatal GEJ could differentiate between the pathological reversible migration of the suprahiatal GEJ and the sliding hiatal hernias, serving the point of imposing indications for surgical treatment.

Conclusions. Thus, from an endoscopic point of view, (1) reversible migration of suprahiatal GEJ up to 0.5 cm can be considered a physiological migration. (2) excessive (pathological) reversible migration of the suprahiatal EGJ can be considered the displacement of the GEJ on a tuning fork ≥0.5 cm ÷ <2.0 cm, (3) reversible sliding hiatal hernia can be considered the reversible displacement of the suprahiatal GEJ by 20 mm and more.

Gastric emptying and diabetic gastroparesis: what is new?

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Gastric emptying is a complex pathophysiological process, under the influence of many factors. Gastroparesis is defined as symptomatic delay in gastric emptying in the absence of any mechanical obstruction.

The main symptoms of gastroparesis are nausea, vomiting, early satiety, bloating, postprandial fullness, abdominal pain; these often overlap with functional disorders – especially with functional dyspepsia.

Classically, diabetic gastroparesis is considered to be a consequence of autonomic neuropathy; currently many mechanisms are involved in its pathogenesis: vagal dysfunction, hyperglycemia, visceral hypersensitivity, interstitial Cajal cells loss, oxidative stress, loss of neural nitric oxide synthase expression in the myenteric plexus, advanced glycation end products, neuroimmune mechanisms, macrophage - driven inflammation. Gastric emptying is regulated by numerous hormones, some of them with an inhibitory role (gastric inhibitory polypeptide - GIP, glucagon-like-peptide 1-GLP1, cholecystokinin, secretin, vasoactive intestinal peptide – VIP), others with a stimulant effect (motilin, ghrelin).

99-Technetium scintigraphy and C13 breath testing are the main methods of assessing gastric emptying. However, new diagnostic methods: wireless motility capsule, the functional lumen imaging probe (FLIP), MRI are looking for a place in the evaluation algorithm of patients with diabetic gastroparesis.

Treatment starts with diet, glycemic control, and prokinetics. A multitude of other therapies, with different mechanisms of action, some of them with promising results, are available: 5-HT 3 receptors antagonists (odansetron, granisetron), 5-HT4 receptor agonists (velusetrag, prucalopride), selective ghrelin agonists (relamorelin), neurokinin receptor antagonists (aprepitant), phenothiazine antipsychotics (prochlorperazine, chlorpromazine), tricyclic antidepressants, serotonin norepinephrine reuptake inhibitors, cannabinoids.

In severe and refractory cases, gastric electrical stimulation methods, endoscopic techniques (intrapyloric botulinum toxin injection, gastric per oral endoscopic myotomy) or surgical techniques may be used.

Future research is needed to understand the complex, bidirectional mechanisms between gastric emptying and glycemic balance and to find more targeted therapies for diabetic gastroparesis.

The role of the gut microbiota in the digestive impairment of cystic fibrosis

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Introduction. Cystic fibrosis (CF) is the most common autosomal recessive monogenic disorder in the Caucasian population. It is caused by a mutation in the gene that encodes the synthesis of CFTR protein (transmembrane regulator of cystic fibrosis). The mutation causes in the intestine: the decrease of the pH, the secretion of viscous and adherent mucus, the absence of the endogenous secretion of pancreatic enzymes and the decrease of the motility. All these changes lead to gastrointestinal inflammation (GI) and an imbalance in the composition of the intestinal microbiota (dysbiosis).

Material and method. A pertinent summary of the literature related to the involvement of the microbiota in CF-associated digestive diseases.

Results. Dysbiosis and intestinal inflammation are the basis of systemic inflammation and GI complications, including malignancy. Because the gastrointestinal microbiome and its metabolites play a vital role in nutrition, metabolism, inflammation and immunity, intestinal dysbiosis will in turn affect various manifestations of CF, both GI and extra-GI. Recent studies have shown that impaired primary biliary immunity and intestinal dysbiosis influence the severity and progression of CF-associated liver disease (CFLD). Thus, the gut microbiota could be a pathogenic factor for the development of CFLD. In contrast, the relationship between pancreatic insufficiency and intestinal dysbiosis is controversial. Also, the increased values of some biomarkers of inflammation (fecal calprotectin, lipoyl-GMP, M2-pyruvate kinase), as well as the proliferation of pro-inflammatory microbes and the decrease of anti-inflammatory microbes in the intestinal microbiota are consistent with the symptoms of GI in CF and the appearance of colorectal cancer. In the future, the neonatal period is likely to provide us with a critical window during which changes in the microbiome will result in changes in immune programming and prolonged systemic health in CF.

Conclusions. More studies are needed to assess the impact of fecal transplantation in restoring intestinal homeostasis. Although confirmatory studies are still ongoing, the message is that manipulation of the gut microbiota is possible and could have therapeutic value for CFLD. Future research should also assess the impact of CFTR modulators on the gut microbiome, GI symptoms and the risk of GI cancer. In this review we sought to summarize the pathways that associate the intestinal microbiota with GI complications in CF.

Genes and genetics in celiac disease

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Introduction. Celiac disease (CD) is considered to have a high heritability. Several studies have indicated that a strong HLA-DQ 'gene dose' effect exists with apparent implications on CD development and disease phenotype.

Material and methods. A retrospective analysis of medical records was performed using the adult CD patient cohort attending a single tertiary referral centre. The study was carried out between January 2015- December 2019 and included 81 patients. Complete HLA-DQ typing alleles were isolated using genomic DNA extracted from EDTA-anticoagulant peripheral blood according to the manufacturer instructions.

Results. HLA-DQA1*02/DQA1*05 was identified in 49.3%, DQA1*05/DQA1*05 in 21.3% of cases, and HLA-DQB1*02/DQB1*02 in 41.3% of cases. 8% of patients are DQ2.5 homozygous, 64% are DQ2.5 heterozygous, 24 cases DQ2.5 / DQ2.2, 24 (32%) have the DQ2 genotype 2.5/DQX, 2.67% inherited DQ2.5/DQ7, respectively 1 isolated HLA-DQ2.2 homozygous case. DQX/DQX were identified at 10 (13.33%). Low frequency was identified for HLA-DQ8. When assessing disease phenotype, the carriage of 2 HLA-DQB1*02 copies was associated with the presence of anaemia (P=0.024), but not with the presence of recurrent or chronic diarrhea, loss of weight, infertility or dyspepsia. No differences were detected between the presence of one vesus two DQB1*02 copies and the different Marsh classifications, P=0.725. However, the CD patients expressing 2 copies were more likely to have increased IgA-tTG and IgA AGA levels compared to those expressing only one copy.

Conclusions. The number of copies inherited by CD patients influences disease phenotype, but does not interfere with histological involvement. The lack of dosage effect on histological changes suggests that the presence of HLA-DQ heterodimers confers risk of disease, but there are additional factors that determine severity.

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Evaluation of esophageal motility using new multichannel intraluminal impedance parameters in children with gastroesophageal reflux

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Background. Baseline impedance is a determinant of esophageal mucosal integrity. There are new parameters used to evaluate the esophageal motility: mean nocturnal mean nocturnal baseline impedance (MNBI) and post-reflux swallow-induced peristaltic wave (PSPW) index. The aim of this study is to evaluate the esophageal motility in different phenotypes of GERD, using new impedance parameters.

Methods. 49 pediatric patients who underwent upper digestive endoscopy and multichannel intraluminal impedance (MII-pH) monitoring were included in the study. Ten randomly selected 2-min windows during rest from the distal impedance channel (Z6) were averaged to calculate de distal baseline impedance; MNBI was assessed from the most distal impedance channel (Z6) during night time recumbent period. Three 10-minute time periods were selected randomly, and the mean baseline for each period was computed with the aid of the software. PSPW index was obtained dividing the number of refluxes followed within 30 seconds by a PSPW by the number of total refluxes. Chi-square, t-tests, were used to compare motility parameters in different phenotypes of GERD.

Results and discussion. We found a statistically significant difference between baseline impedance and mean acid clearance time in patient diagnosed with erosive esophagitis compared to those with different phenotypes of non-erosive reflux disease ($p<0.05$). There was no difference between different phenotypes of non-erosive esophageal reflux disease. ($p>0.05$). The PSPW index was significantly lower in patients with erosive esophagitis and MNBI values and PSPW index were lower in non-erosive reflux disease patients than in esophageal hypersensitivity.

Conclusions. Low baseline impedance, MNBI and PSPW index are associated with delayed acid clearance in patients with proven erosive esophagitis. Acid exposure affects not only the integrity of the esophageal mucosa but also the motility of the esophagus. Further studies are necessary to evaluate the correlation between impedance baseline and esophageal acid clearance time in patients with non-erosive reflux disease.

Irritable Bowel Syndrome in the COVID-19 scenario documentary value of pandemic impact

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Ensuring a high level of quality of health care involves a medical act based on medical technologies and devices in line with advances in the field. The approach, although it adds value, is not without impact and negative effects on the doctor-patient relationship, especially for diseases in which communication and psychological support are extremely important for the evolution of the disease. Thus, the concern of doctors for the technical component of the medical act leaves little time for communication, understanding of the disease and the patient who is often dissatisfied and worried about the possibility and ways to meet health needs. An example of this is the case of patients with disorders of the bowel-brain interaction, where the prognostic significance of clinical manifestations has become a real psychological burden in the context of the COVID-19 pandemic. Data from the literature show gastrointestinal manifestations of COVID-19 disease as symptom profiles that may mimic irritable bowel syndrome (IBS), and social distancing measures appear to have adversely affected patients with IBS. In addition, studies evaluating the influence of COVID-19 on behavioral changes in disease suggest that lack of specialized medical support and loss of control over the disease appear to be contributing factors to psychological distress and worsening of gastrointestinal symptoms among people with IBS. In this paper, we aim to present the documentary value of the impact of COVID-19 on patients with IBS with a focus on aspects that contribute to the understanding of IBS in a pandemic context and the adoption of comprehensive management.