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KURS PODYPLOMOWY DLA PIELĘGNIAREK ENDOSKOPOWYCH

Sesja II. Wskaźniki jakości w endoskopii

Wskaźniki jakości w gastroskopii

dr hab. n. med. Krzysztof Kurek – Klinika Gastroenterologii i Chorób Wewnętrznych, Uniwersytet Medyczny w Białymstoku

Esophagogastroduodenoscopy (EGD) is one of the most commonly performed endoscopic procedures. Esophagogastroduodenoscopy is used for the diagnosis and treatment of esophageal, gastric, and duodenal disorders. When properly performed, it is generally safe and well-tolerated procedure for the examination of the upper GI tract. Typicall indications for EGD are evaluation of dysphagia, bleeding, peptic ulcer disease, reflux disease, esophageal strictures, celiac disease, and unexplained diarrhea. During EGD evaluation, diagnostic biopsies can be performed as well as therapies to achieve hemostasis and dilation or stenting for significant strictures. The motivation for developing quality indicators for EGD was driven by the desire to provide patients with the highest quality upper gastrointestinal endoscopies.

KURS PODYPLOMOWY DLA PIELĘGNIAREK SPECJALIZUJĄCYCH SIĘ W OPIECE NAD PACJENTAMI Z NIESWOISTYMI CHOROBAMI ZAPALNYMI JELIT

Inflammatory bowel disease (IBD) – pathogenesis, gastrointestinal symptoms, endoscopic, imaging and laboratory diagnostics

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Inflammatory bowel disease (IBD), including Crohn's disease (CD) and ulcerative colitis (UC), is relapsing-remitting chronic gastrointestinal tract disorder. In recent years, an increase in incidence has been observed. Diseases are incurable so far, have a chronic course and in many cases lead to disability. The etiological factor is not known, and pathomechanism is complex, with the contribution of genetic and environmental factors, as well as impaired immune response. Diagnosis of IBD is based on a thorough examination, selected laboratory, endoscopic, imaging and microscopic examinations. The selection of tests depends, among other things, on the type of disease. The treatment process is also complicated and requires the involvement of a multidisciplinary team. Nurses specializing in the care of patients with IBD play a huge role in such teams. The knowledge and commitment of nursing staff is the basis for providing comprehensive care that takes into account all aspects of patients' lives. The course aims to provide contemporary knowledge by experienced specialists in various fields of medicine.

The basic groups of drugs used in the IBD therapy and their possible side effects

Ariel Liebert – Katedra Chorób Naczyń i Chorób Wewnętrznych, Uniwersytet Mikołaja Kopernika w Toruniu, *Collegium Medicum* w Bydgoszczy, Centrum Endoskopii Zabiegowej, Szpital Uniwersytecki nr 2 w Bydgoszczy

Inflammatory bowel disease (IBD) clinical picture is diverse. There are no uniform standards of pharmacological treatment. Each patient requires individualized approach. Due to unknown etiology and complicated

course of IBD, causative treatment can not be applied. There are four main groups of pharmaceuticals used in the treatment of IBD: preparations of 5-aminosalicylic acid, glucocorticoids, immunosuppressive and biological drugs. In addition, antibiotics are used in infectious complications. Every treatment may be associated with certain adverse events and complications, many of them can be dangerous for the patient's health and even life-threatening. Therefore careful patient's follow-up is required, additional specific laboratory tests are also necessary in therapy monitoring.

Surgical treatment for inflammatory bowel disease patients

Zbigniew Banaszkiewicz MD, PhD – Chair of General, Colorectal and Oncological Surgery, Jan Biziel Memorial University Hospital, Bydgoszcz

Although conservative approach remains basic in treatment for inflammatory bowel disease (IBD), the surgical option is to be met in each third patient with ulcerative colitis (UC) and in wide range of Crohn disease (CD) patients, varying from 50% up 75%. The procedure is to be well-suited to type of indications for operation and it's elective/emergent manner as well as to distribution of colonic involvement and site complications present at time of surgery. This is always a matter of general condition and co-morbidity, but what is crucial in those particular patients seems the state of sphincter continence and their having or not stoma expectations. Immediate or urgent indications, such as perforation, massive bleeding, bowel obstruction or toxic megacolon, failed to respond to usual 4–7 days treatment and finally colonic cancer, are reported in 10% of all patients operated for UC. Elective indications are met in those patients, who are diagnosed with either high grade dysplasia, or DALM and those not improving after best management, including the steroid resistants. There are basically four surgical options in the treatment for UC patients, we can choose from:

1. Total proctocolectomy with Brooke ileostomy.
2. Proctocolectomy with the Kock Pouch.
3. Colectomy with ileorectal anastomosis.
4. Restorative proctocolectomy with ileal pouch – anal anastomosis.

In general are non – elective indications for operation in CD patients the same as above, including the bowel perforation, obstruction and bleeding (immediate manner) or severe flare, especially with ileocecal presentation, or any other, that causes significant and ongoing bowel obstruction, as well as intra-abdominal abscess (urgent manner). Elective indications are fulfilled when dysplastic or neoplastic conditions are diagnosed (summing up to 1–2% of all colorectal cancers) or, which is much more common, failure to respond to the best treatment, and fistula formation. Resection is the most frequent procedure in treatment for CD, but the outcome is not satisfactory: 34% rate of complications and 50% recurrence rate in 5 year follow up. The most common presentation of perianal CD (up to 30% of the cases) is abscess and fistula. Surgical treatment is necessary in both (abscess incision and drainage, fistulotomy) but again the results are rather disappointing, thus new modifications are run to improve the outcome (fistuloscopy, biological agents, stem cell therapy, tissue glue or fistula plug).

Sesja I. Patogeneza i epidemiologia NChZJ – aktualny stan wiedzy

IBD pathogenesis – where are we?

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Inflammatory bowel disease (IBD) is a chronic inflammatory disorder of the gastrointestinal tract, defined into two major subtypes – ulcerative colitis (UC) and Crohn's disease (CD). Both diseases are characterized by alternating episodes of relapses and remissions. The pathogenesis of IBD is complicated and poorly understood. There are several disturbances, resulting in chronic inflammatory infiltration of the gastrointestinal wall, which leads to its dysfunction. There is a constant progress in our understanding of these phenomena, however exact pathophysiological details of this cascade and the final cause of IBD are not known. It seems that disturbances in innate immunity are responsible for initiation of inflammatory response in IBD. Hypothetically, an impaired recognition of dysbiotic gut microbiota in the presence of some poorly defined environmental factors in a genetically predisposed host leads to mucosal barrier disruption. In consequence, several types of innate immune cells are activated, like for example neutrophils, dendritic cells and macrophages or innate lymphoid cells. Different pro-inflammatory pathways are induced with a secretion of multiple pro-inflammatory cytokines. On the other hand, the adaptive immune system is responsible for the progression of inflammatory events in IBD. There is a stimulation of CD4 T-cell response with differentiation into several cellular subtypes, like Th1, Th2 or Th17 cells. Moreover, the immunosuppressive functions of regulatory T-cells (Tregs) are impaired. As a result of different phenomena described above, there is a chronic infiltration of several immune cells in the gastrointestinal wall, causing tissue damage, what leads to symptoms typical for IBD. There is an urgent need for further studies concerning the exact pathophysiological pro-inflammatory mechanisms in CD and UC. Increasing our knowledge in this area can result in the development of new, more effective therapeutic strategies in IBD.

Sesja III. Sytuacje szczególne oraz nowości w opiece nad chorymi z NChZJ

Small molecule drugs in inflammatory bowel disease

dr hab. n. med. Piotr Eder – Katedra i Klinika Gastroenterologii, Dietetyki i Chorób Wewnętrznych, Uniwersytet Medyczny w Poznaniu

There is an increasing improvement in therapeutic outcomes in inflammatory bowel disease (IBD), however both – Crohn's disease (CD) and ulcerative colitis (UC) are incurable diseases. Introduction of biological therapy has significantly changed treatment possibilities. It also helped the clinicians to better understand the treatment goals and provided important insights into IBD pathogenesis. Nevertheless, monoclonal agents have limitations in terms of safety, efficacy and costs. That is why there is a growing interest in new class of specific small-molecule drugs (SMDs), interfering with different intracellular pro-inflammatory pathways.

SMDs have molecular weight < 1 kDa, which enables to diffuse more easily through cell membranes. They have usually a short serum half-time and should be taken orally daily or twice daily. They are not antigenic, in contrast to biological agents.

Tofacitinib is an oral SMD, inhibiting the Janus kinases (JAK) – JAK1, JAK3, and to lesser extent JAK2. This blocks signaling for several pro-inflammatory cytokines: interleukin-6 (IL-6), IL-2, IL-7, IL-15, interferon-gamma and others. This molecule is currently being investigated for treatment of IBD with promising preliminary results in clinical trials, especially in UC. Other JAK inhibitors (i.a. filgotinib, peficitinib) are in phase II of clinical development.

Ozanimod is a selective modulator of sphingosine-1-phosphate receptors (S1P1, S1P5), influencing lymphocyte homing to lymphoid organs and lymphocyte migration into circulation. Preliminary data coming from clinical trials also suggest that ozanimod can be helpful in the therapy of IBD.

In summary, SMDs – like tofacitinib and others – are new, promising drugs for IBD patients. We expect that their efficacy and safety will be confirmed in further studies, allowing for their use in everyday clinical practice.

KURS TRZUSTKOWY

Guzy torbielowate trzustki – obserwować czy operować?

dr Michał Dubowik – Klinika Gastroenterologii i Hepatologii, Gdański Uniwersytet Medyczny

Pancreatic cystic tumors (PCT) are a phenomenon increasingly recognized in the elderly. Diagnosis is often accidental associated with imaging examinations of other abdominal organs. The concept of cystic pancreatic tumors is heterogeneous, describes the morphology of many types of lesions with different risk of developing pancreatic ductal carcinoma. The strategy of dealing with PCT is based on observation or a different range of surgical treatment. The selection of the right strategy is based on the presence of symptoms caused by PCT, age and general condition of the patient, as well as the characteristics of PCT described in imaging, cytological and biochemical studies.

Sesja I. Choroby trzustki – sesja poświęcona pamięci prof. Antoniego Gabryelewicza

Guidelines for the diagnosis and treatment of chronic pancreatitis

Roland Kadaj-Lipka – Clinical Department of Internal Medicine and Gastroenterology with Inflammatory Bowel Disease Unit, CSK MSWiA, Warsaw

The Working Group of the Polish Society of Gastroenterology and the Polish Pancreatic Club developed the latest recommendations and diagnostic and therapeutic recommendations in chronic pancreatitis. Recommendations relate to: diagnosis of chronic pancreatitis, autoimmune pancreatitis, conservative treatment, treatment of pain, endocardial and endocrine pancreatic insufficiency, treatment of chronic pancreatitis with endoscopic, surgical methods and oncological supervision in chronic pancreatitis. The present study refers to the Polish recommendations published in 2011, which constitute their updating and supplementing.

All recommendations were subject to voting by experts of the Polish Society of Gastroenterology and the Polish Pancreatic Club, who assessed them each time on a five-point scale, where: I – full acceptance, II – acceptance with some exception, III – acceptance with a serious exception, IV – rejection with a certain exception and V – rejection entirely. The results of the vote, including comments, were included with each recommendation.

In addition, the group of experts assessed the value of clinical trials on which the formulated statements are based, where A – is high (based on meta-analyzes and randomized clinical trials), B – average (based on clinical trials and observational studies), C – low (mainly based on expert opinions).

In this recommendations, 40 statements regarding terminology were discussed: diagnostics and conservative treatment, endoscopic and surgical treatment. Also included are basic information about the management of autoimmune pancreatitis.

Nieswoiste choroby zapalne jelit (NChZJ) – leczenie zachowawcze i zabiegowe – sesja poświęcona pamięci prof. Witolda Bartnika

Novel and emerging therapies for IBD

dr hab. n. med. Piotr Eder – Katedra i Klinika Gastroenterologii, Dietetyki i Chorób Wewnętrznych, Uniwersytet Medyczny w Poznaniu

Inflammatory bowel disease (IBD) are chronic inflammatory disorders of the gastrointestinal tract. Pathogenesis of IBD is still poorly understood. That is why we are still lacking of therapeutic possibilities, allowing for permanent cure of Crohn's disease (CD) or ulcerative colitis (UC). Nevertheless, scientists and clinicians are still searching for new molecular targets, which blockade by specific molecules could induce prolonged remission of the inflammation. Beyond anti-tumor necrosis factor α antibodies, several other biological agents are used in everyday practice. Among these, vedolizumab – anti-α4β7 antibody and ustekinumab – a molecule binding the p40 subunit of interleukin-12 and interleukin-23, are approved to treat IBD (vedolizumab for UC and CD, ustekinumab for CD). Other monoclonal antibodies are still under investigation, like for example anti-MAdCAM agent or antibody against β7 subunit of α4β7 integrin – etrolizumab. Another area of therapeutic development are orally administered small molecule drugs interferring with intracellular proinflammatory signaling. One of the most advanced drugs is the JAK inhibitor tofacitinib and ozanimod – a novel immunomodulatory agonist of S1P1 receptor. Tofacitinib mainly inhibits JAK1 and JAK3 isoforms of Janus kinase which blocks the downstream effects of a large subset of proinflammatory cytokines. Ozanimod induces peripheral lymphocyte sequestration, decreasing the number of activated lymphocytes circulating to the gastrointestinal tract. The efficacy of small molecule drugs in IBD is continuing to be explored.

Rola mikrobiomu w chorobach układu pokarmowego – sesja poświęcona pamięci prof. Krzysztofa Marlicza

Microbe hunters 2018 – towards better prophylaxis of infections in gastroenterology, surgery and oncology

Wojciech Marlicz MD, PhD, FACG – Department of Gastroenterology, Pomeranian Medical University, Szczecin

Surgical site infections (SSIs) raise serious medical concerns. The number of iatrogenic complications increases as the societies get older and suffer from comorbid diseases. According to recent global data, the prevalence of SSIs worldwide ranges between 9–23% and depends on the country's Human Developmental Index (HDI).

Patients' preparation before surgery or other procedures (e.g. colonoscopy) by means of mechanical bowel cleansing and antibiotic administration could result in increased risk of infection or other adverse events through microbiota alterations (dysbiosis). SSIs occur within 30 days of surgery or up to one year after implantation of artificial tissue. SSIs are associated with considerable morbidity with over one-third of postoperative deaths related to infection.

Among risk factors are: i) the type and duration of surgery (abdominal surgery), ii) health status (ASA assessment), iii) comorbidities (diabetes mellitus, obesity), iv) immune suppression, v) antibiotic resistance, and possibly the status of gut microbiota.

According to European Surveillance of Antibiotic Consumption, the consumption of antibiotics in Poland is high. Antibiotics are associated with increased risk of Clostridium difficile pseudomembranous colitis, persistence of virulent bacterial strains, increased bacterial translocation, and efficacy/tolerability of chemo/immunotherapy. Numerous cytotoxic drugs (e.g. cyclophosphamide, oxiplatin, monoclonal PD-1/PD-L1 antibodies) mediate their effect through gut microbiota. For example over expression of Bacteroidetes phylum correlates with resistance to CTLA-4-blockade induced colitis, Akkermansia municiphila, lactobaccilus and bifidobacteria spp are positively associated with wound healing, and *Enterococcus*, *Escherichia* spp. and *Pseudomonas* predominance (gelatinase producers) are associated with increased risk of anastomotic leak and infections.

Metaanalyses and randomized, double blind, placebo control trials (conducted also in Poland) deliver the evidence, that preopreative administration of probiot-

ics/synbiotics lowers the risk of postoperative infection and need for antibiotics. Recommendations aimed at SSIs prophylaxis should include strategies aimed at conservation/protection of microbiota. TIMER mechanistic framework (T – translocation, I – immune modulation, M – metabolism, E – enzymatic degradation, R – reduced diversity and ecological variation) is an example of such microbiological approach developed in order to optimize efficacy and toxicity of chemotherapy.

Cardioprotective effect of probiotics – where is the evidence?

prof. dr hab. Paweł Bogdański – Katedra i Zakład Leczenia Otyłości, Zaburzeń Metabolicznych i Dietetyki Klinicznej, Uniwersytet Medyczny w Poznaniu
dr n. med. Monika Szulińska – Katedra i Zakład Leczenia Otyłości, Zaburzeń Metabolicznych i Dietetyki Klinicznej, Uniwersytet Medyczny w Poznaniu

It is well known that gut microbiota plays an important role in prevention and treatment of many diseases. A number of clinical research focuses on this issue, which remains of interest in many fields of medicine. The gastrointestinal microbiota is essential for the functioning of the human body. Although its' composition is unique for every individual, it serves the same biological functions in the human body. Its' composition can be influenced by consumed food as well as by the administration of probiotics. According to WHO, probiotics can be defined as "live microorganisms which when administered in adequate amounts confer a health benefit on the host".

Cardiovascular disease is one of the main causes of death in European countries. Its' prevalence is continuously increasing, negatively influencing health care and leading to disability of many individuals. According to the WHO data, approximately 20 million of people died from cardiovascular disease in 2015. Altered microbiota composition is favorable to increased adisposity, inflammation and oxidative stress as well as β-cell dysfunction. Recent research shows probiotics to lower LDL cholesterol, blood pressure, blood glucose, inflammatory mediators and body mass index.

The use of probiotics in modulation of gastrointestinal microbiota can be beneficial and may be used in prevention and treatment of cardiovascular disease.

SIBO (small intestine bacterial overgrowth) – interdisciplinary problem

Prof. Grażyna Rydzewska MD, PhD – Gastroenterology Department with IBD Subdivision, Central Clinical Hospital of Ministry of Interior and Aministration, Warsaw; Facuty of Medicine and Health Sciences, Jan Kochanowski, Kielce

Small intestinal bacterial overgrowth (SIBO) is characterized by the presence of excessive bacteria in the small intestine, and it's typically described as a malabsorptive syndrome. SIBO is a disorder associated with different clinical conditions and a cause of several nonspecific gastrointestinal and nongastrointestinal symptoms. SIBO affects the morphology and function of the digestive system and may cause systemic complications (e.g. osteoporosis, macrocytic anemia). The correlation between SIBO and irritable bowel syndrome, cystic fibrosis, chronic pancreatitis, diabetes, chronic abdominal pain and dermatological diseases is postutaled, however the true association between SIBO and irritable bowel syndrome and celiac disease remains uncertain.

All conditions leading to bacterial growth such as congenital and anatomical abnormalities in the digestive tract, motility disorder or immunological disturbances are risk factors of SIBO.

The diagnosis of SIBO presents several difficulties and limitations, and as yet there is not a widespread agreement on the best diagnostic test. The treatment usually consists in the eradication of bacterial overgrowth with repeated courses of antimicrobials, mostly rifaimine, nutritional support and when it is possible, the correction of underlying predisposing conditions.

Przewlekłe choroby wątroby w codziennej praktyce

MRCP pitfalls in evaluation of biliary tree disorders

dr n. med. Anna Stadnik – II Zakład Radiologii Klinicznej WUM, SPCSK w Warszawie

Magnetic resonance cholangiopancreatography (MRCP) is a non-invasive imaging method, playing an important role in evaluation of pancreatic and biliary disorders. MRCP is currently regarded as a non-invasive alternative to ERCP. This imaging technique uses heavy T2 sequences to visualize static or slow moving fluids, thus depicting static fluid-filled biliary tree and pancreatic duct without ionizing radiation or risks associated with ERCP.

Over the past two decades the MRCP technique has improved considerably in spatial resolution and acquisition speed, achieving diagnostic performance comparable to ERCP and PTC.

Despite its well established role in the diagnostic process in patients with biliary tree pathologies, MRCP has its limitations and pitfalls, which may lead to image misinterpretation.

MRCP pitfalls can be divided into four main groups: (1) artefacts related to technique and acquisition; (2) normal variants mimicking pathology; (3) intra-ductal factors; (4) extra-ductal factors. Therefore, MRCP reading requires careful analysis in order to avoid diagnostic errors related to image misinterpretation.

The aim of this pictorial review is to present MRCP advantages and limitations, along with various interpretation pitfalls, and discuss available solutions in order to achieve diagnostic accuracy.

Alcoholic hepatitis – corticosteroids pros and cons

Prof. Halina Cichoż-Lach – Klinika Gastrologii, Uniwersytet Medyczny w Lublinie

Alcoholic liver disease (ALD) constitutes important medical, sociological and economic problem. The spectrum of ALD includes alcoholic steatosis, hepatitis, fibrosis and cirrhosis. Diagnosis of alcoholic hepatitis (AH) is particularly important because it requires special treatment due to high mortality rate. Despite many controversies, corticosteroids remain recommended treatment in AH. The efficacy of corticosteroids is estimated at 50%. According to last publications on meta-analysis of 11 randomized controlled trials including with 2111 patients, corticosteroids reduce 28 day mortality however, do not improve 90 day and 180 day mortality. Infections are the next important, frequent and severe complications in patients with AH. One of the major controversies is whether the use of corticosteroids for treatment of severe AH increases the risk of infections. The literature data is ambiguous. About 25% patients have infections at admission before corticosteroids treatment. Infections accounted for 24% of all death in severe AH.

The presentation describes literature based review on pros and cons of the use of corticosteroids in treatment of severe AH in aspect of efficacy and risk of infections and bleeding from gastrointestinal tract.

Choroby górnego odcinka przewodu pokarmowego

The role of pH and pH-impedance (MII:pH) monitoring in the diagnosis of different clinical manifestations of GERD

dr n. med. Maria Janiak – Katedra i Klinika Gastroenterologii i Hepatologii, Gdański Uniwersytet Medyczny

Modern definition of GERD is based on the presence of symptoms of reflux, endoscopic findings consistent with the diagnosis and positive results of pH-impedance monitoring.

Anamnesis cannot be the sole basis of diagnosis of GERD, because it is observed that in clinical syndromes accompanying esophageal diseases the sensitivity of mucosa towards acidic content is often diverse (e.g. patients with BE have lower acid-sensitivity and present fewer GERD symptoms). Therefore the lack of symptoms cannot be the indicator of lack of acid exposure. Diagnostic tools like PPI test, barium radiography or upper GI endoscopy with biopsies examination are of limited value for establishing diagnosis of GERD. Negative result of pH-monitoring does not rule out diagnosis of GERD. However pH-impedance monitoring is considered golden standard for diagnosis of reflux (particularly non-acidic reflux). The most important parameter assessed during ambulatory pH-impedance monitoring is abnormal exposure time: AET > 6% – confirming diagnosis of GERD.

The overall number of reflux episodes and baseline impedance are considered not sufficient for diagnosis and should be viewed only as informative parameters.

Before monitoring, it should be decided whether to continue or discontinue PPI while testing. In patients with low probability of GERD, testing should be performed off PPI. Treatment discontinuation leads to more frequent symptoms during monitoring, therefore facilitating establishing symptom – reflux correlation and assessing duration of acid exposure episodes. Testing on PPI can give further information about the possible reasons for non-satisfactory treatments outcomes and as to whether the full inhibition of gastric secretion has been accomplished. In patients with high probability of GERD (grade C, D esophagitis, histologically confirmed BE > 1 cm, constrictions, positive previous pH monitoring results) and persistent symptoms, pH monitoring should be performed on PPI. In patients with lack of evidence for pathological reflux (i.e normal upper GI endoscopy, normal AET, normal reflux episode incidence) establishing positive correlation between reported symptoms and episodes of heartburn and regurgitation indicates reflux hypersensivity (as defined in Rome Criteria IV). Sufficient parameters for pathological GERD diagnosis are: grade C, D esophagitis, histologically confirmed BE > 1 cm, presence of constrictions and AET > 6%.

Innowacje w endoskopii

Probe-based (pCLE) and needle-based (nCLE) confocal laser endomicroscopy

Dr. Janusz Milewski – Clinical Department of Internal Medicine and Gastroenterology with Inflammatory Bowel Disease Unit, Warsaw

Confocal laser endomicroscopy (CLE) is a endoscopic technique allowing to obtain very high magnification and resolution microscopic subsurface images of the mucosal layer. CLE images are based on tissue illumination with laser light and subsequent detection of light reflected from the tissue after intravenous administration of the fluoroscence contrast agent. The laser light is focused at appropriate depth and returning light is recofused through the pinhole and is detected. The scatered light is exculuded from the detection – this increases the resolution of the CLE images. CLE systems have included endoscopes with integrated cofocal systems and through the scope probes. The probe based system has a fixed focal length than images are only from the selected depth. The probe it is a fiberoptic bungle with distal lens connected to laser scaning procesor. Cellvisio confocal miniprobes (Mauna Kea, France) include: cholangioflex designed for use during ERCP, gastroflex designed for use in gastroscope and coloflex for use in colonoscopy. The depth of imaging is 40–70 microns for cholangioflexnnad 55–65 microns for gastroflex and coloflex. Probe AQ-flex 19 is designed for use with EUS (nCLE) through 19 gauge needle, the depth of imaging is 40-70 microns. The probes can be reused after disinfection for 10–20 examinations. The fluorescent contrast agent – fluorescein used for CLE should be administered intravenously immadiately before imaging. Images are obtained within few minutes after injection and can be interpreted up to 1 hour. For obtaining confocal images the tip of the probe is positioned in contact with the area of the examined mucosal layer Applications for pCLE include diagnosis of biliary strictures, Barrett's esophagus, inflammatory bowel diseases, gastric diseases, differentiation of colorectal polyps, and for nCLE pancreatic diseases: pancreatic cysts and carcinoma. In Department of Gastroenterology Central Clinical Hospital of Internal Affairs pCLE and NCLE are used for diagnosis of indeterminate biliary strictures, pancreatic cysts, dysplasia in Barrett's esophagus and inflammatory bowel diseases. Further studies are needed to determine pCLE and nCLE clinical efficacy.

Zastosowanie cholangioskopii

dr Andrzej Baniukiewicz – Klinika Gastroenterologii i Chorób Wewnętrznych, Uniwersytet Medyczny w Białymstoku

Cholangiopancreatoscopy is valuable tool for diagnosis and treatment of numerous biliopancreatic disorders. Peroral cholangiopancreatoscopy can be perform by using a cholangioscope that is advanced through the working channel of the duodenoscope, or by insertion of an ultra-slim endoscope directly into the biliopancreatic tree. Differentiation between benign and malignant intraductal strictures and targeting biopsies are the main diagnostic indications while lithotrypsy of difficult bile duct stones and directly biliary drainage are the main therapeutic indications for cholangiopancreatoscopy.

Endoscopic bariatric procedures

lek. Artur Raiter – Zakład Endoskopii Zabiegowej, Specjalistyczny Szpital im. Alfreda Sokołowskiego w Wałbrzychu

Endoscopic sleeve gastroplasty (ESG) is a new minimally invasive procedure in the nonsurgical treatment of obesity. The ESG is also known as the "accordian procedure", "scarless sleeve" or "Apollo method". The procedure was pioneered by the Mayo Clinic (US) in 2012.

Construction of the gastroplasty is dependent on a cap-based flexible endoscopic suturing system (Over Stitch; Apollo Endosurgery USA) which is mounted onto a double channel endoscope, placed through on esophageal overtube with carbon dioxide (CO_2) gas insufflation. The procedure is performed with the patient in the left lateral decubitus position, under general anaesthesia with endotracheal intubation. Pre-procedure antibiotics (cefotaxime) and PPI (proton pump inhibitor) is given intravenously.

The goal of this procedure is to reduce the gastric lumen (about 70–80% primary volume) into a tubular configuration (the greater curvature plication). To perform the gastroplasty we deploy interrupted sutures from distal to proximal body. Each suture consist of six to seven bites along the anterior-greater curvature-posterior gastric wall before it is cinched. This is not a continuous staple line, but rather, an invagination of the greater curvature of the stomach. The small part of the stomach fundus after procedure is free (not collapsed, not sutured), the patient have a pouch and some accommodation ability.

Six-years experiences demonstrates that endoscopic sleeve gastroplasty is a safe and effective endoluminal weight loss options. In patients with body mass index of less than 40, the weight loss between the ESG and surgical options (sleeve gastrectomy or gastric by-pass) was similar. In patients with BMI more than 40 surgical sleeve or gastric by-pass achieved better total body weight loss at 1 -year mark (27%) compared to the ESG (17%) (DDW 2017 Chicago).

The ideal (best) candidate for endoscopic sleeve gastroplasty is someone who understands that this procedure is not be-all and end, for weight loss, but rather a tool weight loss.

The other technique for endoscopic gastric reduction is the Primary Obesity Surgery Endolumenal (POSE) procedure. The POSE method uses a per oral Incisionless Operating Platform (IOP) for placement of multiple isolated transmural tissue anchor plications to reduce the gastric volume.

Nowotwory neuroendokrynne przewodu pokarmowego

Neuroendocrine tumor of stomach and duodenum – diagnosis and treatment

Michał Lipiński – Gastroenterology Department with IBD Subdivision, Central Clinical Hospital of Ministry of Interior and Aministration, Warsaw
Grażyna Rydzewska – Gastroenterology Department with IBD Subdivision, Central Clinical Hospital of Ministry of Interior and Aministration, Warsaw; Facuty of Medicine and Health Sciences, Jan Kochanowski, Kielce

Neuroendocrine neoplasms (NEN) constitute approximately 1% of all neoplasms of the stomach. Between 5.6% and 8.7% of gastrointestinal NENs are gastric neuroendocrine neoplasms (g-NENs). In the stomach three clinical and pathogenetic types of g-NENs are found, with differences in their clinical and histopathological pictures, as well as in the diagnostics and therapeutic management.

This lecture presents the updated Polish Neuroendocrine Tumour Network expert panel recommendations on the management of neuroendocrine neoplasms (NENs) of the stomach and duodenum, including gastrinoma. The recommendations discuss the epidemiology, pathogenesis, and clinical presentation of these tumours as well as their diagnosis, including biochemical, histopathological, and localisation diagnoses. The principles of treatment are discussed, including endoscopic, surgical, pharmacological, and radionuclide treatments. Finally, there are also recommendations on patient monitoring.

Zaburzenia stanu odżywienia w gastroenterologii

The malnutrition in IBD: how to treat?

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Inflammatory bowel diseases (IBD), including Crohn's disease (CD) and ulcerative colitis (UC), are a group of idiopathic disorders of the intestinal tract caused by an inappropriate immune response. The main symptoms of UC and CD include diarrhea, abdominal pain, fever, general weakness and reduction in appetite. All these symptoms lead to progressive weight loss, marasmus-type protein-energy malnutrition and macro- and micronutrients deficiencies. The previous study showed that malnutrition affects up to 65–75% of patients with CD and 18–62% of patients with UC. The malnutrition in IBD results from reduced oral food intake, increased nutrient requirements, increased gastrointestinal loss of nutrients and drug interactions. In patients with IBD (mainly in active phase of the disease) a significant reduction in lean body mass and impaired muscular tissue function is noticed. In addition, abnormalities in the distribution of adipose tissue are observed (reduction of subcutaneous fat and increase in visceral fat). IBD is also associated with vitamins and minerals imbalance: iron deficiency anemia (about 60% of patients), hypoalbuminamia, low concentration of B_1, B_{12} and D, K vitamins and trace elements (Ca, Mg, K). In patients with UC, there is also a deficiency of folic acid (as a result of sulfasalazine therapy) and zinc (10% of patients). Both qualitative and quantitative malnutrition worsens the prognosis, complication rates, mortality and quality of life.

The treatment of an undernourished patient with IBD should focus on 4 elements: prevention of malnutrition, early detection of malnutrition, regular monitoring of nutritional status (with the use of validated screening tools) and effective compensation of energy and electrolyte deficiencies (according to ESPEN and GPP recommendations). It is worth noting, that micronutrient deficiencies in IBD may occur even in patients with mild disease or in clinical remission. Therefore patients with IBD should be assessed for vitamins and minerals deficiencies on a regular basis and every case of the deficit should be appropriately corrected.

In order to improve the nutritional status of malnourished patients enteral nutrition (EN) in the form of oral nutritional supplementation (ONS) is recommended. ONS is the first step in supporting nutrition and can be recommended if undernutrition cannot be treated sufficiently by dietary counselling. Parenteral nutrition (PN) is indicated only when EN has failed or is impossible.

How to cure malnutrition in the liver diseases

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Malnutrition is prevalent in patients with chronic liver diseases due to poor nutrient intake, decreased protein synthesis by the liver and hypermetabolic state. Malnutrition, ascites and hyponatremia negatively affect morbidity and mortality in patients with chronic liver diseases. Factors contributing to inadequate nutrient intake include early satiety (ascites), anorexia (nausea), abdominal distention, dysgeusia (zinc deficiency), hepatic encephalopathy, diet restrictions (low protein, low sodium, fluid restriction), alcohol intake and socioeconomic barriers. Metabolic changes contributing to malnutrition include hypermetabolic state, increased gluconeogenesis, insulin resistance. Furthermore such factors, as portosystemic shunting (bowel wall edema, portal venous stasis), bile acid deficiency, small bowel bacterial overgrowth (SIBO) may contribute to malnutrition in patients witch chronic liver diseases. The management of malnutrition begins with its identification through objective assessment of nutritional status, repeated at routine intervals or with charge of clinical condition. Oral nutrition is recommended in malnourished patients as initial means to meet caloric needs. Enteral feeding via nasoenteral tube is recommended in patients who cannot rich caloric intake goals with oral supplementation. Parenteral nutrition is reserved for patients with moderate- to severe malnutrition, who cannot meet their caloric needs by oral or enteral nutrition. Percutaneous gastrostomy tube placement is not recommended in patients with esophageal/gastric varices or ascites. Optimal energy intake is 25–40 kcal/kg/day. Daily protein intake is 1,2–1,5 g/kg and it should be reduced to 0,6–0,8 g/kg in acute encephalopathy. Small meals spaced through the day and bedtime snack of complex carbohydrates are recommended to minimize muscle loss, due to reduced capacity to store glycogen, the use of muscle glycogen stores and ketone body production in patients with chronic liver diseases. Branched-chain amino acids supplementation may help to achieve daily protein support in patients with protein intolerance and also has beneficial effect in patients with hepatic encephalopathy. Moderate sodium restriction to 80–125 mmol/l is indicated in standard therapy of ascites, secondary to liver cirrhosis. Fluid restriction is recommended when serum sodium level decreases to 120–130 mEq/l.

Diets in diseases of the gastrointestinal tract

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Diseases of the gastrointestinal tract constitute a group of 93 disease entities. They may be caused by hormonal changes, genetic conditions, mechanical or chemical violations of organs and incorrect nutrition. In their prevention and treatment the basis is hygiene and diet, whose principles must be adjusted individually, taking into account the age, sex, physical activity as well as the health status of the patient, the course of the disease, the level of organ capacity. Failure to follow the rules set for a given disease unit may worsen the patient's condition and delay the moment of his/her recovery. For patients with gastrointestinal diseases, the most common diet is the easily digestible diet with fat restriction, full of nutrients necessary for the proper functioning of the body, with the exclusion of indigestible or difficult digestible products. When preparing dishes, one should take into account such techniques that facilitate digestion. In order to ensure an adequate amount of nutrients in the diet, products from various food groups should be included in the diet. Foods should be prepared with special regard to hygiene conditions. Food products must always be fresh and can not be stored for too long even in refrigerators. Food infections resulting from the consumption of poorly hygienic food are very harmful for people who are ill. Foods should be cooked, soft, tasty, must not contain compounds that irritate the mucous membrane of the stomach, they can not be too sweet, salty, sour and spicy (spicy). The one-off ration should have a small volume. Meals should be eaten often in small amounts. It is usually recommended to eat 5 meals a day at the same time, and the last light meal should be given to the patient at least 3 hours before bedtime. The consistency of meals should be adjusted to the state of his health (liquid, semi-liquid in the form of purees or creams or constant). In addition, avoid feeding too cold or too cold food, exclude or limit drinking coffee and tea (in the case of limitation – weak infusions are prepared, milk is added to them). In addition, products causing bloating, abdominal pain should be strictly excluded.

It is also important that the patient eats meals without haste, in the atmosphere and surroundings that do not cause stress (especially important for people suffering from ulcers).

Sesja II. Nowości w chorobach trzustki

Radiology and diagnostic imaging in pancreatic cancer

Prof. Michał Studniarek – Department of Radiology, Medical University of Gdansk

Radiology and diagnostic imaging in pancreatic cancer The purpose of the lecture is to present contemporary applications of radiological and diagnostic imaging modalities in pancreatic cancer.

Every focal and diffuse pathology detected in pancreas can be a pancreatic cancer. Cystic, mixed and solid pancreatic tumors are often related to the development of cancer. The most common form – ductal adenocarcinoma is frequently a solid tumor, but when growing can contain necrotic, liquid parts. Intraductal papillary mucinous cancer is frequently cystic, with communication to pancreatic ducts, but after malignant transformation the solid part is growing. Mucinous cystadenocarcinoma develops in mucinous cystadenoma (large cyst with parietal calcifications presented in women only), and then contains more and more solid nodules inside. Other rare types, like acinar cell carcinoma, solid pseudopapillary carcinoma, pancreatoblastoma (in children) and even serous cystadenocarcinoma present similar radiological patterns.

In the detection of pancreatic cancer the most accurate method is computed tomography (CT), magnetic resonance imaging (MRI) and ultrasound. The image of any pancreatic cancer is often nonspecific, and to differentiate them one need to take a sample. The best method to perform pancreatic biopsy is endoscopic ultrasound, due to the lowest risk of complications, but if a large sample is needed the core biopsy can be performed under CT-fluoroscopy or percutaneous ultrasound guidance.

In staging the vascular invasion is well seen in CT, but tumor size is better seen in MRI and ultrasound. Lymph node invasion is well seen in MRI, due to the restriction of extracellular diffusion, but the size of lymph nodes can be assessed also with CT or US. Liver metastases are well seen in every imaging modality, but MRI adds the information about diffusion restriction and FDG PET presents metabolic aspects of the changes. Every method can be used to assess volume doubling time, indicating malignant proliferation.

All methods can be used in follow-up to detect reccurent tumor, dissemination or even reaction to applied treatment. Ultrasound and CT-fluoroscopy are used to guide local tumor ablation in the liver or in the pancreas, but real estimation of ablated zone is better seen in MRI, CT and PET studies.

Neurogastroenterologia

Perspectives on the pharmacotherapy of disorders of the brain-gut axis

prof. Jakub Fichna – Zakład Biochemii, Uniwersytet Medyczny w Łodzi

The gut with its enteric nervous system (ENS), immune network and microbial environment remain a relatively independent milieu, yet their control by the central nervous system and the cross-talk of CNS with the gut play an important role in gastrointestinal (GI) physiology and pathophysiology. In consequence, the lack or perturbances of the brain-gut axis (BGA) underlie several functional disorders and inflammatory diseases in the GI tract.

In this lecture, I will focus on the structural and functional components of BGA and how its disequilibrium contributes to the disease. I will also discuss selected, currently available treatments targeting the environment of the GI system. Finally, I will look into the future of successful therapies of BGA dysfunctions, which go beyond the test tube and as far as plant material, functional food and personalized treatments.

Probiotics in neurogastroenterology

Wojciech Marlicz MD, PhD, FACG – Department of Gastroenterology, Pomeranian Medical University, Szczecin

Human digestive tract and enteric nervous system (ENS) communicate with central nervous system (CNS) through gut-brain axis (GBA). The bidirectional communication involves diverse neural network through X cranial Vagal Nerve, dorsal roots of sympathetic/parasympathetic nervous system. The important role in the regulation of gut brain communication play: i) hypothalamus-pituitary-adrenal axis (HPA), ii) stress hormones (cortizol), iii) short chain fatty acids (SCFAs), and iv) gut microbiota. Gut barrier, another important part of GBA, is composed of: i) gut microbiota, ii) gut epithelial cells, iii) gut endothelial cells, iv) gut lymohatic vessels, and v) tight cellular junctions. Gut barrier in structure and function resembles blood brain barrier (BBB). The gut-brain communication is mediated also via blood and bone marrow systems.

The alterations of gut microbiota are frequently referred to dysbiosis. Dysbiosis could mediate disturbances of gut barrier and gut-brain axis. The most frequent disorders of gut-brain interactions (recently defined by Rome IV criteria) are functional gastrointestinal disorders (FGIDs). The most frequent FGIDs entities are irritable bowel syndrome (IBS) and functional dyspepsia (FD).

The alterations of gut-brain axis concern also patients with liver disease, inflammatory bowel disease (IBD), metabolic syndromes, neurodegenerative diseases, food intolerance, celiac disease and other enteropathies. One of the most frequent comorbidities associated with gastrointestinal diseases are mood disorders and depression.

Modulation of gut-brain-axis opens up new avenues in the management of chronic diseases. This aim could be fulfilled through the modulation of gut microbiota, by means of probiotic administration. World Gastroenterology Organisation (WGO) recently issued Global Guideline on Prebiotics and Probiotics use by health care professionls. Among available in Poland probiotics, recommended in the management of FGIDs are Lactobacillus plantarum 299V, Bifidobacterium infantis 35624; Bifidobacterium animalis DN-173 010, and Saccharomyces boullardi CNCM I-745. Psychobiotics (Lactobacillus helveticus Rosell-52 and Bifidobacterium longum Rosell-175) are new class of probiotics, targeted at gut-brain axis in patients with mental and psychiatric disturbances. Psychobiotics and neurobiotics, capable of GBA modulation could find their place in the management of patients endangered with iatrogenic complications associated with pharmactotehrapy and polypharmacy. The use of these new compounds could be also useful in the management of stress and depression in patients with FGIDs, metabolic disorders as well as surgical and cancer patients.

Aspekty naczyniowe chorób gastroenterologicznych

AMI and CMI – surgeon's point of view

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Acute mesenteric ischemia (AMI) is defined as a group of diseases characterized by an interruption of the blood supply to varying portions of the small intestine, leading to ischemia and secondary inflammatory and necrotic changes. If untreated, this process will progress in life threatening intestinal necrosis. The incidence is low, estimated at 0.09–0.2% of all acute surgical admissions. Early diagnosis and urgent surgical intervention are essential to reduce the high mortality associated with this entity. The endovascular approaches in parallel with modern imaging techniques may provide new options. CT angiography is now the imaging method of choice in AMI. It can provide data to establish the diagnosis, evaluation of the potential for revascularization to re-establish blood flow to ischemic bowel, resection of necrotic intestine, and use of damage control techniques when appropriate to allow for re-assessment of bowel viability prior to definitive anastomosis and abdominal closure. Intestinal revascularisation is necessary in most patients with acute SMA occlusion. The only situation in which a bowel resection without revascularisation may save the life of the patient is in the case of a distal embolus, with a widely open proximal artery. Acute mesenteric arterial revascularisation is preferably done before any bowel surgery.

Chronic mesenteric ischaemia (CMI) is commonly characterised by postprandial abdominal pain, and when severe, food aversion and weight loss. The typical pain is mid-abdominal or epigastric and usually beginning 20–30 minutes after eating and lasting 1–2 hours. The diagnosis of CMI is often delayed as patients undergo extensive investigations for possible malignancy or are classified as having functional abdominal disorders. Plain abdominal X-ray has no role in the diagnosis of CMI. DUS is most often used as the first screening imaging study to diagnose the presence of significant mesenteric arterial stenosis or occlusion. It may also be used to evaluate open and endovascular interventions. CTA is now the imaging method of choice in CMI. With 3D reformatting, it can provide excellent reconstructions of the mesenteric arteries and has a sensitivity and specificity of 96% and 94%, respectively, for the diagnosis of occlusions. Revascularisation is indicated in patients who develop symptoms of CMI. The SMA is the main primary target for revascularisation. Revascularisation of the CA or IMA has also been performed, particularly when the SMA is chronically occluded and not suitable for recanalisation.

Acute and chronic gastrointestinal ischemia – the gastroenterologist point of view

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Correct blood supply to the intestines is necessary for their functional efficiency. Blood supply to the small and large intestine is ensured by the celiac trunk, upper and lower mesenteric artery. The middle and the lower part of the rectum is supplied by the internal iliac artery.

Intestinal ischemia may have an occlusive or non-occlusive etiology, from a clinical point of view there is a classification into acute and chronic intestinal ischemia and colonic ischemia. In clinical practice, bowel ischemia is often diagnosed with delay, sometimes incorrect diagnosis is established.

In acute intestinal ischemia, mortality is still very high, the prognosis is better when the diagnosis is rapid, up to several hours from the onset of symptoms, before intestinal necrosis occurs.

In acute intestinal ischemia, very severe abdominal pain appears in the absence of significant abnormalities in abdominal examination. Risk factors are: > 50 years of age, heart failure, arrhythmias, hypovolemia, dialysis, inflammatory diseases of the vessels, deep vein thrombosis, hypercoagulation. The main causes are: mesenteric artery embolism and thrombosis, acute, non-occlusive ischemia, and the mesenteric vein thrombosis. Laboratory tests are not relevant in the early stages of the disease. The method of choice, not only in diagnostics but also in therapy, is angiography.

The main symptoms of chronic intestinal ischemia is abdominal pain, often strapping, with radiation to the spine. Pain appears after meals and can last several hours. The intensity of symptoms increases over weeks and months. Reduction in the amount and volume of meals consumption cause weight loss, which usually raises the suspicion of cancer.

Colonic ischemia is the most common pathology developing on the basis of ischemic episodes. In 90%, it applies to people > 60 years old. The disease has a various etiology, symptoms and clinical course. The most common causes are: decreased visceral flow in sepsis, dehydration, heart and kidney failure; inflammatory dis-

eases of vessels, hypercoagulation, but also in young people: airplane flights, long-distance running, medications from various therapeutic groups, drugs. The main symptoms are abdominal pain of varying severity and gastrointestinal bleeding. Endoscopic and microscopic images are not specific and can be the cause of diagnostic mistakes.

The role of interventional radiologist in the diagnosis and treatment of acute and chronic ischemia of digestive tract, bleeding to gastrointestinal tract and from visceral aneurysms

prof. dr hab. Olgierd Rowiński – II Zakład Radiologii Klinicznej, Samodzielny Publiczny Szpital Kliniczny we Warszawie

Bleeding to the gastrointestinal tract is an indication for angiography and embolization in following cases: the source of bleeding cannot be visualized in endoscopy, ligation of the source is impossible or the source of hemorrhage is localized in the lower gastrointestinal tract. In a life-threatening situation, there are no known contraindications to this procedure.

While treating a bleeding from the left gastric artery, Spongostan is used. In the embolization of the gastro-duodenal artery hemorrhage, peripheral and proximal embolization (in relation to the source of bleeding) are required. Bleeding from the lower levels is embolized as close to the source as possible. The embolic agents consist of coils, acrylic adhesives or polymers and molecules of polyvinyl alcohol (diameter over 300 µm). The success rate of the treatment for the upper gastrointestinal tract is estimated to be about 56–88% and for the lower tract 90–100%, clinical results depending on the pathology are 84–92%.

The treatment of bleeding from venous system is needed in patients with portal hypertension when endoscopic treatment of esophageal varices is impossible and in patients with ectopic mucous bleeding in mechanism of passive congestion. In order to decompress portal hypertension angioplasty of hepatic veins is performed in Budd-Chiari syndrome, portal-systemic anastomosis (TIPSS) in liver cirrhosis, angioplasty of portal or mesenteric vein at prehepatic hypertension. Embolization technique (RBO) through splenorenal circulation carries the risk of aggravation of portal hypertension. In cases of portal hypertension secondary to arteriovenous fistulas, the method of treatment is embolization of those fistulas.

Visceral arteries aneurysms may be pseudoaneurysms, true aneurysms, post-traumatic, post-inflammatory, atherosclerotic, or of unknown etiology. Treatment can consist of filling aneurysms with coils, implantation of covered stents, implantation of flow modifying stents or embolization with isolation technique.

Ischemia in the area of the visceral vessels may be dependent on atherosclerotic, embolic, and thrombotic lesions, or vascular pathologies of different etiology. In case of acute obstruction fibrinolytic treatment, thrombectomy or mechanical resection with stent implantation is possible. The procedure is limited by the condition of ischemic intestine loops. High level of lactates and signs of necrosis in CT scans are contraindications to the endarterectomy. In chronic occlusions and stenosis of visceral arteries (with the exception of stenosis caused by the compression of the celiac trunk by the median arcuate ligament of diaphragm), the results of patency restoration are good, and the relapse rate after stent implantation is marginal.

Splanchnic vein thrombosis in gastroenterological practice

dr hab. n. med., prof. nadzw. UMK Jacek Budzyński – Katedra Chorób Naczyń i Chorób Wewnętrznych, *Collegium Medicum* w Bydgoszczy, Uniwersytet Mikołaja Kopernika w Toruniu; Szpital Uniwersytecki nr 2 im. dr. Jana Biziela w Bydgoszczy

Thrombosis of splanchnic veins (portal, mesenteric, splenic, hepatic) is evoked by coexistence of Vichoff's triad components, such as: (a) reduction in splanchnic blood flow (e.g. in the course of liver cirrhosis, heart failure); (b) endothelial injury (e.g. visceral blood congestion, endotoxemia, trauma, surgery); (c) prothrombotic state, e.g. in the course of thrombophilia, both congenital (e.g. deficiency of antithrombin, protein C and S) and acquired (HCC, gastrointestinal and myeloproliferative neoplasms, pancreatitis, inflammatory bowel disease, antiphospolipid syndrome, paroxysmal nocturnal hemoglobinuria, pregnancy, puerperium, acquired deficiency of antithrombin, protein C and S in the course of liver cirrhosis or nephrotic syndrome, drugs with procoagulative properties, e.g. oral contraceptives). Splanchnic vein thrombosis may be diagnosed as an acute or a chronic condition. Symptoms may result from mesenteric ischemia and/or portal hypertension. The intensity of symptoms may vary and it depends on thrombus localization, degree and rate of vessel occlusion, patency of superior mesenteric vein and efficiency of collaterals. An acute state (e.g. shortly after beginning of hormonal contra-

ception) may be asymptomatic or manifest as abdominal pain. It can also include bowel necrosis (even after 30 days from symptoms beginning), jaundice (+ portal biliopathy), gastrointestinal bleeding (+ hemobilia), ascites and/or encephalopathy. A correct diagnosis is based on consideration of above mentioned risk factors and imaging (USS, CT, MRI). Patients management should be individualized due to lack of evidence based recommendations and spontaneous recanalization of portal vein in liver cirrhosis ("transient PVT"). The treatment mainly consists of: (a) anticoagulants (heparin, warfarin, direct anticoagulants), exceptionally thrombolysis; (b) therapy of underlying conditions (e.g. chemotherapy, eculizumab, sorafenib, stenting of inferior vena cava); (c) control of complications (e.g. esophageal varices banding, β-blockers, TIPS, biliary stenting, ascites therapy, liver transplantation). Panendoscopy and risk stratification of variceal and nonvariceal bleeding are recommended before beginning of anticoagulation. The intensity and duration of anticoagulation (mostly 3–12 months) depends on individual risk of thrombosis progression, recurrence and its potential complications. Splanchnic vein thrombosis found accidentally is not an indication for anticoagulation.

Leczenie chirurgiczne, endoskopowe i radiologiczne w wybranych problemach dróg żółciowych i trzustkowych

Iatrogenic bile duct damage – why it is still a difficult medical problem

Prof. Marek Krawczyk – Department of General, Transplant and Liver Surgery, Warsaw Medical University, Warsaw

"Iatrogenic bile duct damage - why it is still a difficult medical problem" Operative procedures, and above all cholecystectomy, are still the most frequent cause of iatrogenic biliary tract injury.

Introduction of cholelithiasis laparoscopic cholecystectomy changed the extent of damage to the bile ducts in relation to the classical surgery. The most common complication of this procedure is the excision of the bile duct. Since the first classification of bile duct injury proposed in 1981, a lot has been created. The latest change from 2013, combines the location of injury, the time of injury and the mechanism of origin and is called ATOM – an abbreviation of the first letters of the words A (for anatomy), T (for time of), M (for mechanism). The creation of subsequent classifications allows for a deeper analysis of the injury and selection of the most effective treatment. Huge diagnostic progress (Ultrasonography, ERCP, MRCP, PTC) allows you to individually choose the treatment method. Progress in instrumentation and professional skills have caused that endoscopic procedures provide not only diagnosis of biliary tract injury, but in many cases effective treatment. This also applies to patients with pre-existing hepatico-enteroanastomosis. Enteroscopy has become an important therapeutic procedure. Interventional radiology also plays an important role, providing access to bile ducts for diagnostic and therapeutic reasons, in patients whose endoscopy is powerless. Modern surgical possibilities of bile duct reconstruction are incomparably larger, and the most important role is played by the hepatico-intestinal anastomoses on the Roux-Y loop. There is no doubt that they should be performed in reference centers and in well prepared multidisciplinary centers. However, some patients develop secondary biliary cirrhosis and in such cases liver transplantation is the final and only chance for effective treatment.

Choroby trzustki

Endoscopic treatment of chronic pancreatitis

dr hab., prof. nadzw. Krystian Adrych – Katedra i Klinika Gastroenterologii i Hepatologii, Gdański Uniwersytet Medyczny

Chronic pancreatitis (CP) is an important disease both from the point of view of modern medicine and the health care system as it affects both life expectancy and quality of life. The most common symptom of CP is abdominal pain. After several years of disease, abdominal pain often decreases while patients develop exocrine and endocrine pancreatic insufficiency (diabetes). In 2017, new European guidelines (HaPan/UEG) were published on the management of CP. The initial treatment of CP is conservative. It is usually limited to management of abdominal pain and symptoms of exocrine insufficiency and diabetes mellitus (diet, general measures, pharmacologic therapy). In the absence of clinical improvement and/or the occurrence of disease complications, interventional treatment is implemented. The first step is usually minimally invasive treatment via endoscopy. The essential purpose of endoscopic treatment is to restore adequate dreinage of the main pancreatic duct (MPD). This objective can be achieved by using external shock wave lithotripsy (ESWL) or endoscopic retrograde cholangiopancreatography. The main indications for endoscopic treatment are: 1) pancreatic duct stones 2) narrowing of the pancreatic duct, 3) stenosis of the common bile duct, 4) pancreatic pseudocyst 5) pancreatic fistula. According to the updated 2018 recommendations of the Working Group of the Polish Society of Gastroenterology and Polish Pancreatic Club:

1. Patients with MPD dilatation without pain do not have indications for endoscopic treatment.
2. Patients without obstruction and/or dilation of MPD have no indication for endoscopic treatment.
3. Endoscopic treatment can be effective in patients with abdominal pain and MPD dilation secondary to stones or stricture.
4. In selected cases, ESWL as a stand-alone method or followed by endoscopy can be used to treat large stones causing obstruction of the MPD.
5. Stenting of the pancreatic duct should be continued for 6 to 12 months after the resolution of pain.
6. Endoscopic treatment is effective as a temporary measure in patients with cholangitis and/or biliary obstruction in the course of CP.
7. Exchange of pancreatic stents should be scheduled at regular intervals (e.g., every 3 months) or "on demand".
8. Endoscopic dreinage is recommended in symptomatic or complicated pancreatic pseudocysts. Surgery is indicated if endoscopic treatment provides no relief.

Idiopathic acute pancreatitis – does it still exist?

dr hab. n. med. Michał Lipiński – Department of Gastroenterology, Central Clinical Hospital of The Ministry of Interior and Administration, Warsaw

Idiopathic acute pancreatitis is a diagnostic challenge for gastroenterologists. In view of associated mortality and morbidity, it is important to establish the aetiology of pancreatitis to provide early treatment, improve the outcomes and prevent recurrence. In up to 10% of patients with a single episode of AP and in up to 30% of patients with recurrent acute pancreatitis, the aetiology is not identified after the initial assessment. The goal of this speech is to consider the role of EUS in idiopathic pancreatitis and importance of genetic testing for mutations associated with pancreatitis.

Choroby czynnościowe układu pokarmowego

Genetic background of functional gastrointestinal disorders

dr hab. Anna Sadakierska-Chudy – Krakowska Akademia im. Andrzeja Frycza Modrzewskiego

Functional gastrointestinal disorders (FGIDs), better defined as disorders of brain-gut or brain-gut-microbiome interaction, are the most common gastrointestinal-related disorders worldwide. FGIDs can affect all people regardless of gender, age, race, and are mainly diagnosed by symptoms. The pathogenesis of these complex disorders is multifactorial in nature, with a combination of physiological factors, environmental and genetic factors, however, our knowledge of FGIDs etiology is still not satisfactory.

In recent years, great emphasis has been placed on genetic research for the identification of causative pathways. This is more advanced in irritable bowel syndrome (IBS) compared with other FGID, but it has still provided no unequivocal evidence of a pathogenic role for any particular gene. However, family and twin studies provided evidence for clustering of FGID in families and increased concordance in monozygotic compared with dizygotic twins. Results of some studies have indicated that polymorphisms in the genes that encode adrenergic, opioidergic, serotonergic receptors and serotonin-transporter genes, as well as in GNB3 gene may contribute in gastrointestinal symptoms. Moreover, polymorphisms in genes that encode proteins associated with immunomodulatory and/or neuromodulatory functions such as IL4, IL4R, TNF and OPRM1 might play a role in the manifestations of FGID. The management of FGIDs remain very challenging, therefore, the use of pharmacogenetics that allows to identify the genetic variants in the CYP450 system and predict the responses to drug targeting the serotonergic, cannabinoid, adrenergic and bile acid pathways can improve the pharmacologic effects of the medications.

It is worth pointing out that not only genetic variants affect gene expression but also long-term changes in gene expression can be caused by remodeling of the epigenome by the environment, including chronic stress or gut microbiome. Interestingly, it was established that epigenetic molecular mechanisms contribute in the pathophysiology of stress-induced visceral hypersensitivity in a rodent model that resemble IBS. In addition, some studies have also examined the effects of microbiome on host epigenome. A growing body of evidence suggests that gut microbiota can affect epigenetic regulation in immune homeostasis by direct interaction with invariant natural killer cells and by the indirect influence of their metabolites.

Biomarkers in IBS

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Biomarker is defined as "a characteristic that is objectively measured and evaluated as an indicator of normal biological processes, pathogenic processes, or pharmacological response to a therapeutic intervention" (Biomarkers Definitions Working Group). Performance of an ideal biomarker should be simple, noninvasive, cheap, rapid and reproducible between labs and individuals and among several qualities of an ideal biomarker being disease specific is the most important. Irritable bowel syndrome (IBS) is a functional bowel disorder affecting around 20% of people in Western countries. Etiopathogenesis of IBS is complex and not fully elucidated what might be a reason that there is no single diagnostic test available. According to the Rome IV criteria it is characterized by recurrent abdominal pain associated with defecation or a change in bowel habits. Additionally, there are time criteria precising onset and duration of symptoms requested to diagnose IBS. As there is no single diagnostic test which may be applied to diagnose IBS, recently published Rome IV criteria recommend establishing diagnosis of this functional bowel disorder basing on: clinical history, physical examination, minimal laboratory tests and in clinically justified situations other tests. Differential diagnosis of IBS is broad and encompasses for instance inflammatory bowel disease and coeliac disease. This opens the doors for further researches which attempt to invent a biomarker assisting the positive diagnosis of IBS which remains challenging. Numerous biomarkers as a single test or in combination have been evaluated in IBS patients for instance: serum-based biomarkers (as panel of several biomarkers: interleukin 1β, anti-tissue transglutaminase, anti-neutrophil cytoplasmic antibody, other molecules involved in pathways of inflammation, pain, serotonin metabolism and mast cells activation), stool-based biomarkers (volatile organic metabolites, chromogranins and secretogranins, calprotectin), intestinal permeability ratio, sigmoid muscularis propria thickness, visceral hypersensitivity tests, psychological biomarkers (psychomarkers) etc. Yet, the practical application of studied biomarkers remains uncertain. Still, in era of precision medicine there is a need for the further researches integrating disorders of brain-gut axis,

genes, microbiome and other factors involved in IBS pathogenesis (interactome) which will lead to identification of biomarkers improving diagnostic strategy.

Irritable bowel syndrome (IBS) and diverticular disease (DD) – do we need to diagnose the overlap?

Wojciech Marlicz MD, PhD, FACG – Department of Gastroenterology, Pomeranian Medical University, Szczecin

Diverticulosis is the most frequent and benign anatomical abnormality of the colon. The prevalence of diverticulosis increases with age. The majority of patients remain without symptoms. However, approximately 20% of patients will have symptomatic diverticulosis termed as diverticular disease (DD). Of importance, only minority of patients with DD (15%) will develop either complicated or uncomplicated diverticulitis. Most of DD patients (85%) will suffer from symptomatic uncomplicated diverticular disease (SUDD) with symptoms similar to those observed in patients with irritable bowel syndrome (IBS) and other functional gastrointestinal disorders (FGIDs). FGIDs are one of the most commonly diagnosed global gastrointestinal (GI) disorders, with prevalence of 10–20% in the western world. From the gastroenterologist's point of view, the diagnosis of DD and FGIDs is important, however sometimes complex and not always possible. The following issues should be taken under consideration in the process of decision making: i) what is the patient's risk of developing diverticulitis/recurrent diverticulits/diverticular bleeding; ii) age of presentation; iii) history of comorbid conditions and iv) the need for referral and colonoscopy. The endoscopic classification DICA (Diverticular Inflammation and Complication Assessment) could be a useful tool at a time of colonoscopy in predicting the risk of diverticulitis occurrence/recurrence in patients with SUDD. Detailed macroscopic evaluation of the colon could also raise the suspicion of microscopic colitis in selected individuals. The differential diagnosis between DD/SUDD and IBS could be facilitated by clinical assessment of abdominal pain (e.g. location, severity, type, duration) and biochemical markers (fecal calprotectin). The data are mounting that SUDD and IBS/FGIDs share underlying pathophysiology, including distortion of gut-brain axis, microbiota/immune alterations and visceral hypersensitivity. Therefore the management of SUDD/FGIDs includes brain (e.g. neuromodulators, hypnotherapy) and gut based therapies (e.g. microbiota modulation with non-absorbable antibiotics – rifaximin, anti-inflammatory compounds and fiber/prebiotic/probiotics).

DD and FGIDs belong to the most common digestive diseases with high negative impact on the patients' quality of life. The choice of effective and safe treatments aimed at reducing/preventing symptoms and quality of life improvement could be optimized by combination of various therapies.

Choroby jelita grubego

Zaparcie stolca – diagnostyka różnicowa i leczenie

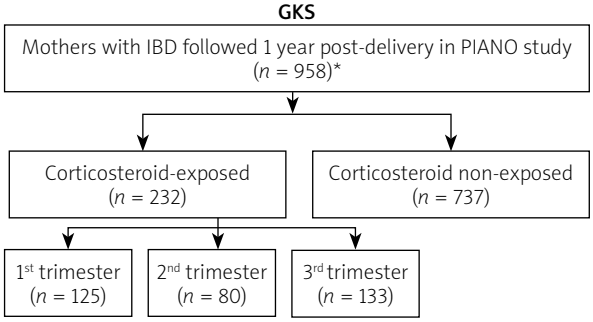
Andrzej Moniuszko MD, PhD – Department of Gastroenterology with IBD Subdivision, Central Clinical Hospital of the Ministry of Interior and Administration, Warsaw

Chronic constipation belongs to one of the everyday clinical issues, being polietiological and thus difficult to treat. Recent guidelines of American Gastroenterology Association and French National Society of Coloproctology from year 2018 will be analyzed, together with recent publications on the topic. Both guidelines focus on the early detection of defecatory disorders with referral for biofeedback treatment. They also emphasize the major role of osmotic agents' in chronic constipation treatment, such as macrogols and bisacodyle. During the lecture the new potential drugs will be presented, such as fecal microbiota transplantation that might become a potential modality in the future. Last but not least, the surgical treatment with its' strict qualification criteria will be discussed.

Ciąża a choroby przewodu pokarmowego

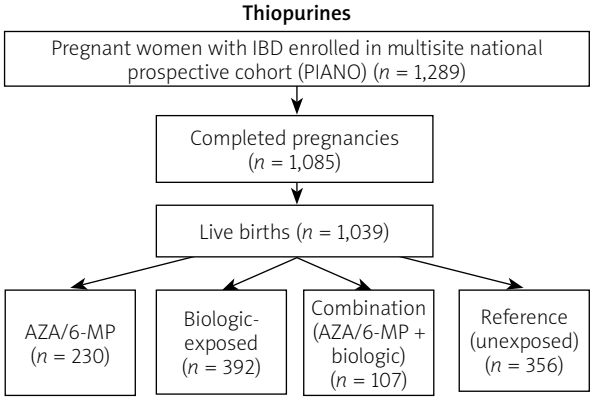
Pregnancy in patients with IBD – the PIANO study

Agnieszka Dobrowolska – Katedra i Klinika Gastroenterologii, Dietetyki i Chorób Wewnętrznych, Uniwersytet Medyczny w Poznaniu



**417 completed 1-year questionnaire.*

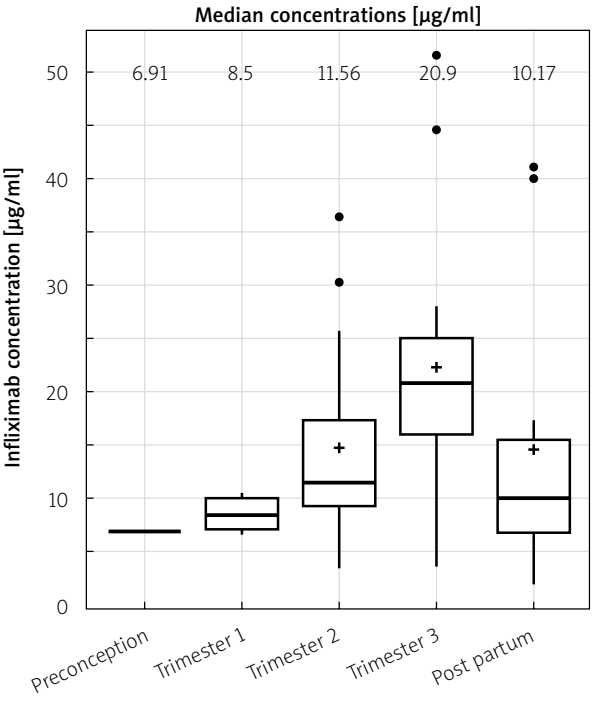
Outcome	Odds ratio (95% CI)
Preterm birth	1.8 (1.0–3.1)
Low birth weight	2.8 (1.3–6.1)
Gestational diabetes	2.8 (1.3–6.0)



PIANO Registry:

	AZA/6-MP RR (CI)
Any complication	1.1 (0.7–1.7)
Spontaneous abortion	1.2 (0.4–3.2)
Preterm birth	1.2 (0.7–2.0)
Low birth weight	0.9 (0.4–1.8)
IUGR	0.6 (0.2–1.9)
Cesarean section	1.2 (0.9–1.7)
NICU	1.2 (0.7–2.1)
Congenital anomalny	1.3 (0.7–2.3)

Pregnancy in IBD and neonatal outcomes – anty-TNF



Marskość wątroby w praktyce codziennej

NASH as a new civilization threat

dr hab., prof. nadzw. Krzysztof Gutkowski –
Klinika Gastroenterologii i Hepatologii,
Kliniczny Szpital Wojewódzki nr 1 w Rzeszowie

The data of the World Health Organization show that 1.9 billion adults of the world's population (39%) suffer from overweight, and 650 million (13%), struggle with obesity. One of the most important disease that is a consequence of global epidemic of obesity is nonalcoholic fatty liver disease (NAFLD). It is estimated that currently NAFLD affects from 14% to 32% inhabitants of the world, and the incidence is higher in the countries of South America and the Middle East and lower in African countries. Projections suggest that in the United States over the years 2015–2030 the number of patients with NAFLD will increase from 83 (21%) to 101 million, and with NASH from 16.5 to 27 million. The prevalence of NASH is estimated from 1.5 to 6.5% and it shows an upward trend. The majority of patients with NAFLD is characterized by the presence of metabolic syndrome components i.e. obesity, insulin resistance, dyslipidemia and hypertension. Diseases of the cardiovascular system very often observed in patients with NAFLD, are the most important cause of death among patients with NAFLD and NASH. The highest risk of developing NAFLD and NASH is observed in patients with type 2 diabetes. The latest data show that the prevalence of NAFLD in this population is estimated at 57%, and NASH confirmed in a liver biopsy specimen at 65%. The data from cohort studies suggest that NASH is characterized by faster progression to cirrhosis than nonalcoholic fatty liver (NAFL). It is estimated that cirrhosis affects 10% to 15% patients with NASH. Despite the absence of certain factors which predict risk of death in patients with NASH, a growing number of data show that such an independent factor may be type 2 diabetes. It should be noted that the presence of the fibrosis stage 2 or higher in liver biopsy specimen is also regarded as an important, independent prognostic factor determining mortality rate in this population. Significant spread of NASH in the general population, leading to the development of cirrhosis and hepatocellular carcinoma causes a rapid increase in the number of patients requiring liver transplantation. Currently NASH is one of the three most important indications for liver transplantation and disease based on which hepatocellular carcinoma is developed. It seems that clinical, economic and demographic consequences of the lack of effective treatment dedicated for patients with NASH, the epidemic of obesity and type 2 diabetes will escalate in the near future.

Sesja *Rising Stars*

The use of spectroscopy in diagnostics of digestive system diseases

mgr Ariel Liebert – Katedra Chorób Naczyń i Chorób Wewnętrznych, Uniwersytet Mikołaja Kopernika w Toruniu, *Collegium Medicum* w Bydgoszczy; Centrum Endoskopii Zabiegowej, Szpital Uniwersytecki nr 2 w Bydgoszczy

Spectrophotometric methods are increasingly used in non-invasive medical diagnostics. Differential diagnosis in some cases is still an unsolved problem that requires development of sensitive and specific diagnostic methods. The same applies to factors predictive of the disease course. The usefulness of fluorescence-based research has already been reported as a potential new method for assessing digestive tract tissue.

Tissues illuminated with ultraviolet or short wavelength visible light from a filtered light source emit fluorescence light of a longer wavelength. The biological sources of this fluorescence are endogenous and specific to the tissue. The molecules responsible for this phenomenon are called fluorophores and include such biological substances as connective tissue matrix (collagen, elastin), cellular metabolic coenzymes, aromatic amino acids, products of the heme biosynthetic pathway and lipopigments.

Each group of fluorophores is characterized by distinct, specific excitation and emission wavelength ranges. Single excitation wavelength can excite many fluorophores, and also the emission signals of many fluorophores can overlap, therefore identifying single fluorophores in a tissue spectrum is difficult. Moreover each tissue contains a mixture of several fluorophores that occur in different concentrations and at different depth, so the measured fluorescence spectrum comprises contributions from the fluorophores in the various tissue layers.

It is believed that the changes in tissue architecture, the distribution and concentration of fluorophores (e.g collagen and elastin), the metabolic status of the tissue and the biochemical environment of natural fluorophores occurring in digestive tract tissue during the course of the disease may influence the spectral properties of the tissue.

Described phenomenon may potentially have a role in differential diagnosis and assessment of the activity of digestive system diseases.

The role of vitamin D in Crohn's disease

lek. Iga Gromny – Klinika Gastroenterologii i Hepatologii, USK im. Jana Mikulicza Radeckiego we Wrocławiu

Vitamin D deficiency is a prevalent condition among patients with Crohn's disease (CD). Patients suffering from CD indicate additional risk factors of vitamin D deficiency such as absorption disorders, increased loss of nutrients owing to chronic diarrhea, medicaments intake, not mentioning previous surgeries (ileum resection). As a result of food intolerance, patients with CD follow a diet low in calcium and vitamin D. Therefore, they show the increased risk of osteoporosis. Because immunomodulatory properties vitamin D may have an impact on CD development and course. Studies indicate that in patient with CD levels of vitamin D inversely correlate with disease. Moreover, there exist an inverse correlation between serum 25(OH)D levels and severity of CD. The deficiency of vitamin D is independently related to lower life quality and greater disease activity in inflammatory bowel diseases. Serum vitamin D concentrations can influence the hospitalization frequency. According to the first European Crohn's and Colitis Organisation (ECCO) consensus guideline, supplementing vitamin D and calcium ought to be taken into account in patients with low bone mineral density (BMD) and/or with additional risk factors. The recommended dosage of vitamin D is 1000 IU daily. A higher dose is required if deficiency of vitamin D is confirmed. Additional substitution of calcium is recommended only when there is not enough calcium included in a diet. Research show that the daily supplementation of calcium (500–1000 mg) and vitamin D (800–1000 mg) increases BMD in IBD patients. It is advisable to be supplemented with vitamin D and calcium during corticosteroid treatment. Taking into consideration the above it is essential to control vitamin D level and follow a proper supplementation.

Endoscopic treatment of consequences of acute necrotizing pancreatitis

dr n. med. Mateusz Jagielski – Klinika Chirurgii Ogólnej, Gastroenterologicznej i Onkologicznej, Uniwersytet im. Mikołaja Kopernika w Toruniu, *Collegium Medicum* w Bydgoszczy; Katedra i Klinika Gastroenterologii i Hepatologii, Gdański Uniwersytet Medyczny

In last thirty years, we have been observing development of a minimally invasive techniques and their expansion in treatment of pancreatic necrosis. Despite numerous reports in the literature on management of pancreatic necrosis, some aspects of interventional treatment, with endoscopy in particular, are still unclear. In this lecture, authors made an attempt to discuss those aspects and summarize current knowledge on endoscopic therapy for pancreatic necrosis. Endotherapy has been shown to be a safe and effective minimally invasive treatment modality in patients with consequences of acute necrotizing pancreatitis. The evolution of endoscopic techniques made endoscopic drainage more effective and reduced the use of other minimally invasive techniques. Endoscopic therapy is an alternative to other minimally invasive therapies for pancreatic necrosis.

Chemoprevention strategies for pancreatic cancer

dr hab. n. med. Michał Lipiński – Department of Gastroenterology, Central Clinical Hospital of The Ministry of Interior and Administration, Warsaw

Pancreatic cancer is the 4th leading cause of cancer related deaths in the US with a 5 year survival rate of 4–6%. Chemoprevention complements the use of synthetic, natural or biologic agents, which inhibit cancer progression, implying low risks and no side effects. The field of chemoprevention for pancreatic cancer is emerging and this speech is to address these important issues. The aim of the lecture is to present consolidated knowledge about pancreatic cancer prevention research.

Leki przeciwkrzepliwe w praktyce gastroenterologa

The indications for using the anticoagulants and antiaggregation drugs

prof. Zbigniew Kalarus – Śląskie Centrum Chorób Serca w Zabrzu; Katedra Kardiologii, Wrodzonych Wad Serca i Elektroterapii, Śląski Uniwersytet Medyczny w Zabrzu

The antiplatelets and anticoagulant therapy is the one of the most important among our cardiological patients. The antithrombotic therapy, vitamin K antagonist (VKA) and new oral anticoagulants (NOACs), significantly decreases the rate of ischemic stroke in patients with atrial fibrillation (AF). The population of patients with AF who have an indications for the antithrombotic prophylaxis is more than 800 thousands people in Poland. The anticoagulant therapy is recommended for the majority of patients with AF as the prevention of the ischemic stroke. Practically all except those without risk factors including age before 65, history of hypertension, diabetes, heart failure and previous stroke, transient ischemic attack (TIA) or peripheral embolism have to be treated with anticoagulation. Refer to venous thromboembolic disease, all patient with diagnosis of pulmonary embolism the antithrombotic treatment should be used at least 3 months.

The antiaggregation treatment especially dual antiplatelet therapy (DAPT), among patients with an acute coronary syndrome, has positive influence by decreasing significantly the incidence of subsequent coronary events and reducing total mortality. We as cardiologists should realize that these method of treatment increases risk of hemorrhagic complications, mainly within gastrointenstinal tract. However benefits from this therapy outweigh side effects of the anticoagulant and antiaggregation treatment. Nowadays the basis of DAPT is an acetylsalicylic acid which is fundamental, with ticagrelor, prasugrel or clopidogrel and this therapy should be proceed among individuals after acute coronary syndrome at least for 12 months. Annually 140 000 people suffer from acute coronary syndrome.

Both therapies are crucial in our routine, cardiological practice. We should know that those methods are strictly related to bleeding complications. We should and have to cooperate with neurologist, gastroenterologist...

Endoscopy in patients on antithrombotic therapy

dr n. med. Magdalena Pawlik – Central Clinical Hospital of Ministry of Internal Affairs, Gastroenterology Department, Warsaw
prof. dr hab. Grażyna Rydzewska – Central Clinical Hospital of Ministry of Internal Affairs, Gastroenterology Department, Warsaw

Antithrombotic therapy (anticoagulants or antiplatelet agents) is used to reduce the risk of thromboembolic events in patients with atrial fibrillation, acute coronary syndrome, deep vein thrombosis, endoprosthesis and hypercoagulable states. This therapy increase the risk of gastrointestinal bleeding. Interruption of antithrombosis therapy is associated with cardiovascular risk. The peri-endoscopic management of patients at high thromboembolic risk require knowledge of both the bleeding risk associated with endoscopic procedures and the potential risk of stopping antithrombotic therapy. The management of antithrombotic therapy needs to be individualized when patients are undergoing therapeutic procedures with high risk of bleeding. The following issues should be evaluated before the patients undergo gastrointestinal endoscopy:

1) urgency of the endoscopic procedure,
2) procedure-related bleeding risk (low-risk procedures and high-risk procedures),
3) risk of thromboembolic events if antithrombotic agent is temporarily discontinued.

Decisions about discontinuing or temporary cessation of antithrombotic agent should be individualized and discussed before the endoscopic procedure with the patient and the prescribing consultant. For low-risk endoscopic procedures we recommended continuing antiplatelet therapy, warfarin therapy (if INR does not exceed the therapeutic range) and omitting the morning dose of DOACs on the day of the procedure. For high-risk endoscopic procedures the management depends on low or high thromboembolic risk after interruption of antithrombotic therapy.

Choroba trzewna

Coeliac disease – shell we take a biopsy

Agnieszka Dobrowolska – Katedra i Klinika Gastroenterologii, Dietetyki i Chorób Wewnętrznych, Uniwersytet Medyczny w Poznaniu

Diagnostic standards

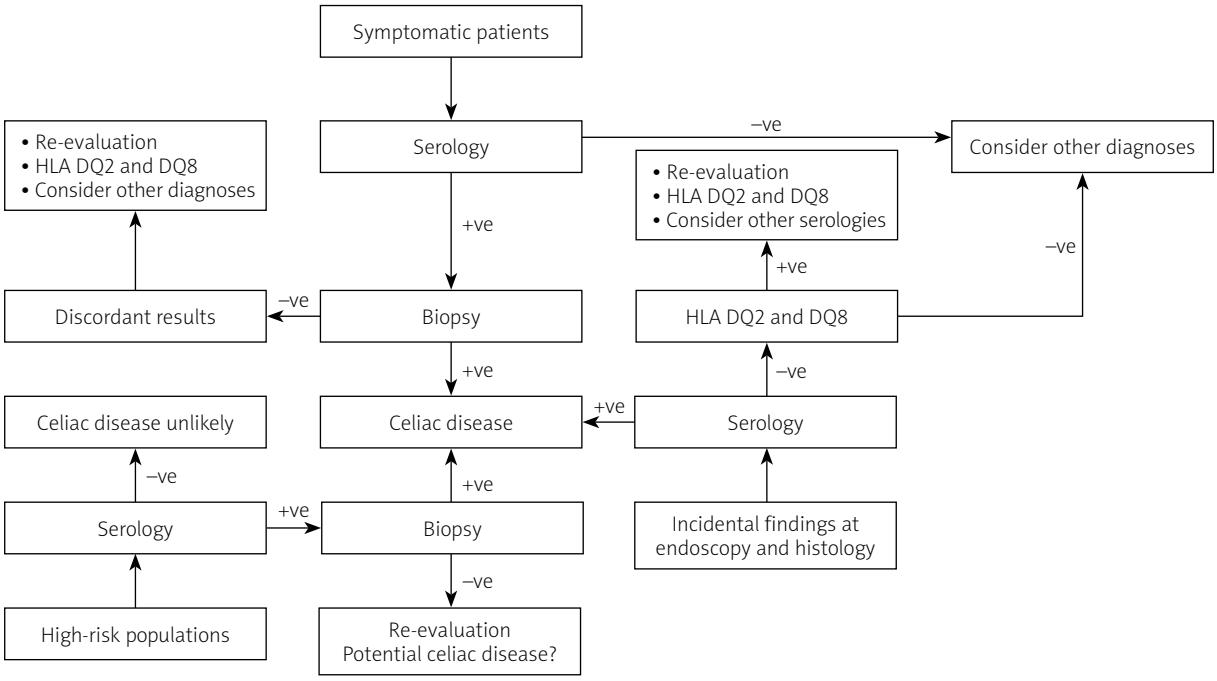
The common feature among these at-risk groups is that they carry the alleles encoding HLA-DQ2 or DQ8. Risk for childhood celiac disease does not appear to be influenced by breast feeding or the timing of dietary gluten introduction.

Adventages of taking duodenal biopsy

- Endoscopy allows identification of gross mucosal changes that are markers of enteropathy, sometimes even in patients evaluated for reasons other than suspicion of celiac disease. Although cohort studies have suggested that observation of endoscopic markers such as scalloping is a reliable predictor of enteropathy, others have shown less satisfactory results. Chromoendoscopy using indigo carmine or methylene blue and water immersion have been shown to enhance endoscopic markers, allowing for visualization of villi and identification of patchy atrophic areas.
- Diagnostic intestinal biopsies should be performed in patients who consume gluten. Mucosal injury is generally more pronounced in the proximal intestine, and mild or absent distally. It is important to note that the location, number, and quality (size and orientation) of biopsies can affect diagnostic yield. As many as 70% of cases have patchy mucosal damage – this should be considered by endoscopists and pathologists. Biopsy samples taken from the duodenum proximal to the ampulla of Vater's can have artifacts that can be interpreted falsely as flat mucosa. However, recent studies have estimated that as many as 13% of patients have the characteristic enteropathy, only localized to the duodenal bulb.To maximize diagnostic accuracy, ≥ 5 duodenal biopsies should be collected, with duodenal bulb samples labelled and submitted separately.
- Under light microscopy, the most characteristic histology findings are: blunted or atrophic villi, crypt hyperplasia, an increase in number of intra-epithelial lymphocytes (IELs), especially at the villus tip, infiltration of the lamina propria by mononuclear cells, and structural abnormalities in epithelial cells. Since

Patients who might require testing for celiac disease

Symptoms and signs		Associated conditions
Gastrointestinal	**Extra-intestinal**	
Chronic diarrhea	Iron-deficiency anemia	Family history of celiac disease
Chronic abdominal pain	Other deficiency states (vitamin B_{12},	Type 1 diabetes
Malabsorption	vitamin D, folate, zinc, vitamin B_6)	Autoimmune thyroid disease
Bloating	Fatigue	Autoimmune liver disease
Erratic bowel habit (similar to IBS)	Recurrent aphthous stomatitis	Selective IgA deficiency
Constipation (more commonly in children)	Elevated hepatic transaminases	**Sjögren syndrome**
Failure to thrive/weight loss	Short stature	Down syndrome
Anorexia	Delayed puberty/**menarche**	Turner syndrome
Vomiting	Amenorrhea	Williams syndrome
GERD	**Early menopause**	
	Dermatitis herpetiformis	
	Osteopenia/osteoporosis	
	Dental enamel hypoplasia	
	Peripheral neuropathy	
	Hyposplenism	



2000, studies from Europe and North and South America reported that 13–46% of cases are misdiagnosed by histology analysis (over- and under-diagnosis). For this reason, in equivocal cases, especially when there is a discrepancy between histology and serology results, re-evaluation by a gastrointestinal pathologist with expertise in celiac disease is recommended.

Atypical demonstrations or complications of coeliac disease – diagnostics and treatment

dr hab., prof. UJ Małgorzata Zwolińska-Wcisło –
Zakład Dietetyki Klinicznej, Katedra Gastroenterologii Hepatologii i Chorób Zakaźnych, Uniwersytet Jagielloński *Collegium Medicum* w Krakowie

Coeliac disease (CD) is a systemic immune mediated disorder triggered by dietary gluten in genetically predisposed individuals. It is still underdiagnosed, partly because of occurrence of the extraintestinal manifestations or as-

sociated conditions, that can misdirect or imped diagnosis. The diversity of clinical picture is a resultant of the impact of genetic, immunological and environment factors. Extraintestinal or atypical symptoms are observed in about 50% of CD patients. CD can affect any tissue or organ in the body. In some cases, extraintestinal symptoms are the only clinical manifestations of this disease or coexist with typical complaints, such as diarrhea, weight loss. The pathogenesis of the CD atypical symptoms can in part be attributed to the spreading of adaptive immune response to tissue other than the intestinal mucosa. This directly related autoimmunity is the most established in dermatitis herpetiformis, but also may affect other complaints including neurological, arthritis, hepatitis, pulmonary and renal manifestations. CD may also lead to extraintestinal manifestations as a result of nutritional consequences of malabsorption and chronic inflammation, including anemia, reduced bone density, impaired fertility, cardiovascular manifestations, hepatitis, aphthous stomatitis and dental enamel defects. Case reports suggested a positive association between CD and autism spectrum disorders or schizophrenia, but the pathophysiology of that coexistence remains unknown. There are high risk groups of increased risk of CD, which should be considered in the diagnosis of CD, including first degree relatives, anaemia, osteopenic bone disease, insulin-dependent diabetes type 1, liver autoimmune disorders, autoimmune endocrinopathy, neurological or oral cavity disorders. CD is also characterized by an increased mortality as a result of refractory CD and enteropathy associated T-cell lymphoma. Poor adherence to gluten free diet (GFD), HLA-DQ2 homozygosity and late diagnosis of CD are recognized as risk factors for malignant evolution of CD. There is scarce information on the effectiveness of GFD in resolving extrainestinal manifestations of CD. The implementation of GFD may improve the overall clinical course and influence the evolution of the associated diseases. The GFD contributes to disappearance of iron deficiency anemia and better control of diabetes mellitus type 1.

Dietary public enemy No. 1? Truths and myths about gluten

Alina Baturo – Klinika Gastroenterologii, Chorób Metabolicznych, Wewnętrznych i Dietetyki, Szpital Kliniczny im. H. Święcickiego, Uniwersytet Medyczny w Poznaniu

In the last few years gluten-free diet has become more and more popular.

Gluten-free diet has been so far the only effective way of treating coeliac patients. Other diseases connected with the diet containing gluten are: gluten ataxia, dermatitis herpetiformis, allergy to wheat, non-coeliac gluten sensitivity etc. Some research results also indicate improvement in patients suffering from diseases nonrelated to gluten such as: Hashimoto's disease, neurological diseases, irritable bowel syndrome. It's been noticed the patients' conditions have improved after temporary elimination of gluten.

Gluten, however, is often reduced in diets by healthy people. It is worth mentioning more and more people are consuming gluten-free products with no medical indications. The question arises – 'What causes such trends?' Traditional and social media, non-scientific papers are behind launching gluten-free diet, emphasizing the benefits of avoiding or eliminating gluten from our meals. Gluten is the product of chemical binding of prolamins in wheat (glutenins and gliadins) in the aquatic environment, and wheat is one of the most important grains, the base of the people's nutrition, not only in Europe. Why is this basic element of our diet, present there for thousands of years responsible for so many ailments and diseases? Some of the researches proved that grains grown nowadays are being constantly modified what influences us – consumers. The amount of gluten intake is also relevant. Hence another question arises – "Is the human body properly prepared to absorb all the nutrients served in improved recipes based on modified grains?"

Our attention should also be drawn to the latest reports on the long-term effects of the gluten-free diet in coeliac patients – hyperlipemia, hipertriglyceridemia, vascular diseases to menton just few. We know that improperly planned gluten-free diet has too low content of dietary fibre and it can be deficient in some microelements.

Is gluten a real threat to our health and should be avoided or should we accept it?

Stany nagłe w gastroenterologii

Non variceal upper gastrointestinal bleeding

Dr. Janusz Milewski – Clinical Department of Internal Medicine and Gastroenterology with Inflammatory Bowel Disease Unit, Warsaw

Gastrointestinal bleeding is one of the commonest emergencies in gastroenterology. Upper gastrointestinal bleeding refers to blood loss with origin proximal to the ligament of Treitz. Signs of acute bleeding are: hematemesis, "coffe ground" emesis, melena, and in severe bleeding hematochezia. The majority of acute UGIH is secondary to non-variceal causes: peptic ulcers, gastroduodenal erosions, Mallory-Weiss tear, esophagitis and Dieulafoy's lesions. Acute upper gastrointestinal hemorrhage (UGIH) is a clinically significant, and expensive healthcare problem, the annual incidence of UGIB ranges from 50 to 160 cases per 100,000 individuals, with a higher incidence in men than in women and mortality 10% to 14%. The initial assessement is to determine whether patient requires urgent intervention – endoscopic, surgical, transfusion, or can undergo delayed endoscopy or can be discharged to outpatient management. Prognostic scales use clinical, laboratory, and endoscopic criteria and allow early identification and appropriate management of high risk patients. Patients with significant comorbidities may require admission regardless of the severity of the UGIB. The Blatchford risk score (clinical and laboratory variables) is commonly used for predicting patients at high risk, and may determine the need for urgent endoscopy. For patients with high risk early endoscopy (within 24 h of hospital admission) is recommended. Early endoscopic interventions significantly reduce the rate of rebleeding, surgery, and mortality. Main endoscopic treatment modalities: injection methods, cautery, mechanical therapy and topical therapy. Multiple maetaanalysis have demonstrated that combination therapy: injection with second endoscopic treatment modality- cautery or clips is superior to injection alone reducing the risk of rebleeding, surgery and mortality. Recurent UGIB occur in up 24% of high risk patients, the use of PPI therapy in addition to endoscopic therapy reduces the rate of rebleeding to 10%. Routine second look is not recommended, repeat endoscopy is appropriate where initial endoscopy failed to identify the source or inadequate therapy was delivered. There are several guidelines for diagnosis and management of nonvariceal upper gastrointestinal hemorrhage: ESGE guideline (2015) ASGE guideline (2012) and many regional and national guidelines.

Choroby infekcyjne przewodu pokarmowego

Helicobacter pylori infection and it's consequences

prof. dr hab. Wiktor Łaszewicz – Uniwersytet Warmińsko-Mazurski, *Collegium Medicum*, Wydział Nauk o Zdrowiu w Olsztynie

Helicobacter pylori (Hp) is Gram-negative, microaerophilic, spiral-shaped ε-*Proteobacterium*, inhabiting gastric mucosa. In 1994 WHO concluded, that Hp is a I class carcinogen, involved in gastric cancer and MALT lymphoma. The frequency of this infection is markedly higher in the developing countries (80–90%) than in the developed countries < 40%. In Poland (2001–2003) among children (6 m to 18 y) Hp seroprevalence rate was 32% and among adults 84%. It is a common worldwide infection mostly asymptomatic or with various, dyspeptic symptoms. Histologically the consequence of Hp infection is incipiently superficial gastritis and subsequently its progression to atrophy of mucosa, often with intestinal metaplasia (IM). Clinically infection appears as: 1) chronic gastritis; 2) duodenal ulcer phenotype (DU) (it occurs in 10–15% infected individuals); 3) gastric ulcer/adenocarcinoma phenotype (which develops into cancer in 1–3% of infected people) (GU); 4) MALT lymphoma (in 0.1%). DU phenotype (predominant antrum colonization) is associated with high gastrin and gastric acid output and a low risk for gastric cancer. GU phenotype, (pangastritis), brings damage of gastric glands, causing mucosal atrophy and hypochlorhydria or achlorhydria, and it is characterized by low pepsinogen I and high gastrin levels and a low pepsinogen I/II ratio. Phenotype GU developes as a multistep process – superficial gastritis, atrophic gastritis, IM, dysplasia and adenocarcinoma. This sequence of events may take 5–8 decades and is characteristic of intestinal-type adenocarcinoma. The main Hp virulence factors: immunogenic protein CagA encoded by cytotoxin associated gene cagA, vacuolating cytotoxin VacA, secreted enzymes: urease, catalase, aliphatic amidase, oxidase, phospholipases, superoxide dismutase, glycosulfatase and proteolitic enzymes. Some studies revealed the association between Hp infections and extragastric diseases – iron-deficiency anemia (IDA) of unknown origin and idiopathic thrombocytopenia purpura (ITP), and other (not confirmed) as a coronary artery diseases, stroke, Alzheimer's and Parkinson's diseases, obesity, diabetes mellitus, asthma. It is necessary to emphasize the need for eradication Hp as primary treatment of dyspepsia, chronic gastritis, peptic ulcer, IDA, ITP, MALT lymphoma, early gastric cancer. It is obvious that erad-

ication of Hp, except for dietary and lifestyle modifications, is the best method in cancer prevention as well.

Clostridium difficile infection – diagnostic and therapeutic algorithm in adults

dr hab., prof. nadzw. Krystian Adrych –
Katedra i Klinika Gastroenterologii i Hepatologii, Gdański Uniwersytet Medyczny

In recent years there has been a marked increase in the incidence of antibiotic-induced infection caused by *Clostridium difficile*. The expected course of disease is also becoming more severe, with increased mortality especially in the elderly or those with coexisting conditions. Antibiotics are the most important risk factor for *Clostridium difficile* infection (CDI). The clinical presentation of CDI can vary from mild diarrhea to obstruction, megacolon, perforation and multiorgan failure. In 2018, new updated guidelines for the diagnosis and treatment of CDI were issued by the Infectious Diseases Society of America and Society for Healthcare Epidemiology of America. The diagnosis of CDI should be based on clinical symptoms, particularly diarrhea, and confirmed by the detection of a toxigenic strain of *Clostridium difficile* or the presence of its toxins in a stool sample, or the finding of pseudomembranaceous colitis by endoscopy and/or histology. In the Polish population, the detection of glutamate dehydrogenase (sensitivity 96–100%) is recommended as a screening test. A negative result excludes Clostridium difficile infection. On the other hand, a positive result requires confirmation by detection of toxins A and B (75% sensitivity, 99% specificity). The new guidelines discuss appropriate management depending on the severity of the infection, presence of relapse of the disease and the ability to administer medicines by mouth. For the first episode of CDI with a mild course of disease, the treatment of choice consists of oral vancomycin (VAN) or fidaxomicin (FID) for 10 days. If these are not available, metronidazole (MET) is an acceptable alternative. Initial episode severe CDI should be treated with VAN or FID by mouth for 10 days. In patients with a first recurrence of CDI who were initially treated with MET, oral VAN is recommended or oral vancomycin can be administered in a pulse-tapered fashion or FID can be used in patients who were initially treated with VAN. In case of a second and subsequent recurrence treatment consists of one of the following: 1) VAN in a pulse-tapered fashion, 2) VAN followed by rifaximin, 3) FID, 4) fecal microbiota transplantation. In extremely severe cases, colectomy might be the optimal solution. The results of several meta-analyses have shown that prophylactic use of probiotics in patients treated with antibiotics is safe and decreases the risk of CDI-associated diarrhea compared to placebo.

Zakażenia pierwotniakowe jelit: giardioza, pełzakowica; diagnostyka i leczenie

prof. Jerzy Stefaniak – Katedra i Klinika Chorób Tropikalnych i Pasożytniczych, Uniwersytet Medyczny w Poznaniu
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Over fifty five thousand cases of infectious diarrhea were reported in 2017 in Poland, of which 31.9% of patients were hospitalized, according to epidemiological data of the National Institute of Hygiene. Often the protozoa are overlooked: cosmopolitan Giardia intestinalis, intestinal coccidia being usually described as opportunistic pathogens and *Entamoeba histolytica* characteristic of the countries of the intertropical region with a low hygiene and sanitary standard.

Giardiasis occurs as acute diarrheal disease. A prolonged invasion results in malabsorbtion due to the local inflammatory response in the small intestinal mucosa. The infection occurs by ingesting invasive protozoan cysts. Genotypes A and B are responsible for infections in human. The gold standard of diagnosis is the finding of trophozoites in the microscopic examination of the duodenal fluid. The presence of cysts in a stool microscopic examination is usually sufficient to make a diagnosis. The serological tests detecting protozoan antigens in feaces or blood serum are of doubtful diagnostic value. The treatment of choice are benzimidazoles, but the problem is the growing resistance of *Giardia* to the monotherapy, and them ineffectiveness in the eradication of cysts.

Entamoeba histolytica is responsible for the amoebiasis. Clinical disease proceeds as a bloody diarrhea. The endoscopic image may mimic ulcerative colitis. The amoebiasis is diagnosed by the presence of trophozites in fresh microscopic stool specimens. *Entamoeba histolytica* cysts are morphologically identical to the non-pathogenic *Entamoeba* dispar, which makes diagnosis difficult in the absence of trophozoites. In this situation, the examination of choice is the sequencing of genetic material isolated from excreted cysts. Protozoan penetration into the intestinal mucosa leads to the

patient immunization, then the serological ELISA tests are useful for detection of specific class G antibodies. Untreated ameobiasis leads to complications, mainly of liver abscesses. Treatment depends on clinical course.

The protozoan infections of the gastrointestinal tract are an important but often omitted in the differential diagnosis of etiologic pathogen of infectious diarrhea. The Department and Clinic of Tropical and Parasitic Diseases in Poznan has diagnostic and therapeutic facilities for the treatment of protozoal diarrhea, especially benizmidazole-resistant giardiasis and amoebiasis, including those occurring in complications.

Alternatywne i komplementarne metody leczenia w gastroenterologii

Phytotherapy in gastroenterology

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Herbal medicine as a method of treatment using plant-based products is known for a long time both in medicine and in everyday life. The first records about the beneficial properties of some herbs date back to 4000 years ago, although only the nineteenth century introduced fundamental changes in the perception of herbs.

Currently, in the era of extremely rapid development of modern technologies, it would seem that herbal medicine will be forgotten, and yet despite such opinions, in many areas of medicine more and more often reach for natural herbal products.

Herbal products used in gastroenterology are mainly peppermint oil, complex plant preparation STW 5 and others, with less documented effect, such as caraway, artichoke or carcaine, which is a papaya extract, or cannabinoids.

Clinical studies on the use of peppermint oil indicate its usefulness in alleviating the symptoms of irritable bowel syndrome (IBS) greater than some spasmolytic drugs and this preparation has been included in current recommendations for the treatment of patients with IBS. The formulation, known from STW 5, is composed of 9 herbs and has diastolic, anti-inflammatory, prokinetic and decreasing bloating properties, documented in clinical trials. t is recommended both in IBS, as well as in functional dyspepsia. In one of the randomized clinical trials, the prokinetic effect of STW 5 was comparable to that of cisapride.

Ginger root is sometimes used as a prokinetic preparation, reducing nausea and vomiting, especially in patients treated oncologically, caraway is also a known as prokinetic acting anti-flatulently, and the cinarein from artichoke has a choleretic effect and is used in dyspepsia.

A randomized clinical trial showed a beneficial intestinal villi regenerating effect in patients with celiac disease, after papaya extract containing carcaine.

A lot of emotions are aroused by the medical application of cannabinoids and undoubtedly their analgesic and anti-diarrheal effects are known, however alalyzes from Cochrane database do not prove their usefulness

in the treatment of inflammatory bowel diseases. It seems that herbal remedies with proven clinical properties, may be a valuable complement to other therapies.

Iron therapy in patients with inflammatory bowel disease

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Anemia is the most common extraintestinal manifestation and complication of inflammatory bowel disease (IBD). Its etiology is multifactorial and mostly is a combination of iron deficiency anemia (IDA) and chronic anemia (ACD). Other causes include vitamin B_{12} and folate deficiency or toxic effect of medications. Because of the high incidence of anemia in patients with IBD and its influence on their quality of life, regular screening of patients is recommended. Iron is essential for hemoglobin synthesis during terminal erythropoiesis. Its supplementation is recommended in all IBD patients when IDA is present, what improves patients quality of life independently of the clinical activity. The election of type of medication and route of administration should be determined by many factors such as general condition of the patient, IBD activity, anemia severity or the prior tolerance of oral iron preparations. The estimations of iron need is normally based on baseline hemoglobin and body weight, what is more efficient than traditional Ganzoni's formula. Although there are many oral iron preparations, intravenous iron supplementation is the preferred route of iron supplementation in patients with IBD. Most of the medications are safe but its use may be associated with phosphate drop or even severe hypophosphatemia (HP). Phosphate plays a key role in many biological processes and its balance is regulated by many factors such as parathyroid hormone and vitamin D, and according to ultimate studies FGF-23. HP may be asymptomatic or cause symptoms such as fatigue, muscle weakness, osteomalacia, bone fractures or even serious life threating events such as cardiac arrhythmia or metabolic encephalopathy. What more, it seems that not all parenteral forms of iron are equal and some may have a higher risk of HP than others. Even though there is evidence of benefit on treating iron deficiency without anemia in other conditions (ej. chronic fatigue and heart failure), it hasn't been approved in the IBD patients.

XVIII KONGRES

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Sesja plakatowa

Sekcja 1. Choroby górnego odcinka przewodu pokarmowego

GERD: diagnostic concordance of the GerdQ questionnaire and 24-hour esophageal multichannel intraluminal impedance-pH monitoring

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Introduction: The GerdQ questionnaire is widely used for screening diagnosis of gastroesophageal reflux disease (GERD) in world gastroenterology practice. The use of the GerdQ questionnaire, in particular the evaluation of heartburn in general medicine, greatly facilitates the diagnosis and control of GERD treatment.

Aim: To evaluate the diagnostic value of the Ukrainian-language version of the GerdQ questionnaire in comparison with the results of the 24 hour esophageal multichannel intraluminal impedance-pH monitoring (MII-pH monitoring).

Material and methods: Patients with GERD symptoms self-filled the GerdQ Ukrainian-language questionnaire, followed by 24-hour MII-pH monitoring (PPI-off), with assessmentof AET, number of acid and total refluxes, DeMeester's score, symptom association with reflux, as criteria for GERD.

Results: Among 48 patients who participated in the study with an average age of 48 ±1.97 years (M ± m), in 23, a pathological gastroesophageal reflux was confirmed. However, in 25 patients, no signs of pathological reflux were reported according to the data of the the 24 hour esophageal MII-pH monitoring. According to the results of the analysis of the ROC curve, the best cut-off-point of GerdQ was ≥ 8. The sensitivity of the questionnaire was 83.3% (95% CI: 63–95), specificity – 70.8% (95% CI: 49–87), AUC – 0.81, $p < 0.0001$. In addition, the GerdQ questionnaire showed good positive predicted value of 74%, but bad negative predictive value – only 19%. It should be noted that from 7 patients in whom the positive result of the GerdQ questionnaire was not confirmed by pathological gastroesophageal reflux according to the data of 24 hour esophageal MII-pH monitoring, 5 patients showed resistance to PPI-treatment.

Conclusions: The results of our study are generally similar to the available publications. The low specificity of GerdQ is due to the presence of people with other genesis of heartburn – functional heartburn. The Ukrainian version of the questionnaire can be used as the basic test of diagnosis, with the typical simptoms of GERD. The GerdQ questionnaire can also be used to evaluate the acid-inducing treatment of GERD, however, in cases of resistance to PPI treatment, a significantly more informative method is 24-hour MII-pH monitoring, due to a reveal symptom association with non-acidic reflux (hypersensitive esophagus).

The follow-up of patients with early gastric cancer after non-curative Endoscopic Submucosal Dissection. The European single centre study

prezentacja ustna

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Introduction: According to the current guidelines of the European Society of Gastrointestinal Endoscopy (ESGE), the endoscopic resection is the treatment of choice of gastric superficial neoplastic lesions. The most current criteria for the curative treatment include one piece (en bloc) resection of mucosal or submucosal membrane ≤ 500 µm with free lateral and vertical margins and lack of the limfoangioinvasion. In the case of non-curative endoscopic resection, surgical treatment is required. However, the follow-up for patients who did not receive radical surgery was not extensively investigated.

Aim: To investigate follow-up of patients with early gastric cancer (EGC) after non-curative endoscopic submucosal dissection (ESD).

Material and methods: The retrospective analysis of prospective assessed database of ESD procedure for EGC, from 2008 to 2018 in Department of Gastroenterology of Pomeranian Medical University Hospital in Szczecin was performed. The follow-up examinations were as follows: endoscopy 3, 12 and 36 months (mo) after ESD and CT 24 to 36 mo after ESD.

Results: The 81 ESD procedures were performed for 80 EGC patients (M 50, mean age: 68.31 ±1.71), the en bloc resection rate was *n* = 73 (91.3%) and curative resection rate(R0) was *n* = 54 (67.5%). Non-R0 resection was due to: submucosal invasion *n* = 16 (20.0%), including *n* = 8 (10.0%) [SM2(+)] and *n* = 8 (10.0%) [SM3(+)], positive lateral margin *n* = 9 (11.3%) [LM(+)], including piecemeal resection [PM], positive vertical margin *n* = 1 (1.3%) [VM(+)]. The median follow-up was 29 mo, range: 7–122. In the non-R0 group (*n* = 26; 32.5%; mean age 71.03 ±2.08) initially *n* = 5 patients underwent surgical treatment, *n* = 17 patients were followed-up without surgery because of lack of consent, poor general condition or comorbidities and *n* = 4 were lost to follow-up. In the follow-up group only one patient after PM had recurrence of cancer after 3 mo and was sent to surgery. In the initially surgical group, *n* = 5 (100%) were negative for cancer in the resected specimen. Overall survival was *n* = 17 (65.4%) patients and cause-specific survival was *n* = 22 (100%): *n* = 5 (19.2%) patients died (*n* = 4 due to comorbidities, *n* = 1 due to postoperative complications). In the whole non-R0 group only 1 patient (1/22, 4.5%) had recurrence of cancer and was successfully treated with surgery.

Conclusions: Our results confirmed that in group of patients with advanced age or comorbidities who underwent non-curative ESD for EGC, only close observation may be an acceptable option without radical surgical procedure.

The influence of socio-demographic factors on the clinical picture of gastroesophageal reflux disease (GERD)

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Introduction: Gastroesophageal reflux disease (GERD) is a problem in highly industrialized countries. Symptoms of GERD occurring at least once a week were reported by around 8–29% of adult population. Among 5–10% they occurred every day. Early diagnosis and implementation of proper diet and pharmacological treatment can significantly reduce the risk of complications and improve patients' quality of life.

Aim: To assess the influence of socio-demographic factors on the clinical picture of GERD.

Material and methods: Among 106 patients the following demographic data was evaluated: age, sex, marital status, education, employment and place of residence as well as data on used stimulants, physical activity, eating habits and nutritional status. Patients answered questions about severity and frequency of symptoms typical and non-typical to GERD. Among all patients, endoscopic examination of upper gastrointestinal tract was performed to assess the severity of inflammatory lesions of esophageal mucosa (according to LA classification) and coexisting lesions in stomach and duodenum.

Results: Statistical analysis showed that type of work and workload does not affect GERD, nor the place of residence, education, marital status, and the way of spending free time by patients. However, GERD is more frequent among men who were 10 years younger than women and that the increase in BMI significantly increases the risk of GERD. In turn, eating vegetables more often than once a week is a protective factor, reducing the risk of erosions in esophagus among people with GERD.

Conclusions: The picture of GERD in the adult population is influenced by two statistically significant factors

– age and nutritional status. With the patient's age, the incidence of inflammatory erosive lesions in esophagus increases, faster among men than women. Also body weight plays an important role, as its proportional increase above normal values promotes the symptoms of GERD.

Impact of chronic proton pump inhibitor therapy on total blood count parameters

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Introduction: Proton pump inhibitors (PPI) irreversibly block the H+/K+ ATPase of the gastric parietal cells and as an effect lead to reduce gastric acid secretion. PPI are widely used medications, often as chronic therapy. Change in pH of gastric juice decrease absorption of iron, calcium and magnesium. Moreover there is a link between PPI therapy and increased risk of osteopenia or osteoporosis development, small intestinal bacterial overgrowth or vitamin B_{12} malabsorption.

Aim: The aim of the study was to determinate correlations between chronic PPI use and total blood count (TBC) parameters. The same safety of PPI therapy was evaluated with effect on commonly affordable and widely used medical parameters.

Material and methods: Thirty seven patients on chronic PPI therapy were enroled to the study. All of patients were. Control group (CG) involved 30 healthy subjects. Mean age in PPI group was 57.1 ±15.4 while in CG 39.3 ±11.8. PPI group included 18 used pantoprasole, 7 omeprasole, one lansoprasole, 9 esoprasole and 2 dexlansoprasol. Statistical anlysis comprised of TBC parameters with erythrocytes (RBC), leucocytes (WBC), thrombocytes (PLT) count and hemoglogin (HGB) concentration in both groups, correlations with particular PPI have been evaluated.

Results: RBC and WBC counts were lower in PPI group in comparison to CG (4.24 ±0.55 vs. 4.75 ±0.42) (*t*-Student, $p < 0.05$) and for WBC (6.13 ±1.44 vs. 7.25 ±1.18) (*t*-Student, $p = 0.001$). HGB concentration in PPI group was lower: 12.5 ±1.8 vs. 14.3 ±0.8 (Welch test, $p = 0.000$). Mean iron serum concentration was lower in PPI group in comparison to CG (16.3 ±5.4 vs. 23.4 ±2.7, Welch test, $p < 0.05$) and the diferences were statistically significant. Mean corpuscular volume was higher in PPI group 88.1 ±5.6 vs. CG 84.8 ±3.3 (Welch test $p = 0.003$).

Conclusions: Chronic PPI therapy might influence on TBC parameters, in particular leading to iron deficiency either anaemia and lower WBC count.

Change in frequency of selected upper gastrointestinal (GI) tract diseases between 1993 and 2013 in upper Silesian population

prezentacja ustna

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Introduction: The decreased prevalence of *H. pylori* infection and the epidemics of obesity change the epidemiology of upper GI tract diseases, e.g. the incidence of peptic ulcer (PUD) and gastro-esophageal reflux disease (GERD).

Aim: The frequency of endoscopic diagnoses of several upper GI tract diseases between 1993 and 2013 was assessed to prove this hypothesis.

Material and methods: Twelve thousand EGD were retrospectively analyzed (500 consecutive reports form each quarter of years 1993, 1997, 2001, 2005, 2009 and 2013).

Results: In analyzed years six-fold decrease in frequency of duodenal ulcer (DU) was observed: from 11.5 to 1.7%; $p < 0.001$. The respective decrease in gastric ulcer (GU) frequency was over two-fold (6.8% to 2.6%; $p < 0.001$). DU to GU ratio dropped from 1.7 : 1 in 1993 to 0.7 : 1 in 2013; $p < 0.001$. Mean age of PUD patients increased by 14 years, from 46 (1993) to 60 (2013); $p < 0.001$. In 1993 they were 2.5 years younger ($p = 0.005$), while in 2013 4.2 years older ($p = 0.025$) than non-PUD patients. The aggregate (DU + GU) ulcer frequency decline was greater in cohort at the age of ≤ 40 years (8×, 1993: 20.3%, 2013: 2.7%; $p < 0.001$) than > 60 years (2.5×, 1993: 11.9%, 2013: 4.7%, $p = 0.001$). The frequency of reflux esophagitis increased 4× between 1993 and 2013 (3.8% to 15.3%; $p < 0.001$), and of Barrett's esophagus 14× (1.1% to 15.4%; $p < 0.001$). The frequency of gastric cancer remained unchanged.

Conclusions: The decrease in frequency of PUD (especially DU) was observed in past years, accompanied by increase in age of patients. Simultaneously, the frequency of reflux esophagitis and Barrett's esophagus increased.

Search for quality indicators of the upper GI tract endoscopy

prezentacja ustna

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Introduction: No measurable quality indicators have been developed for the upper gastrointestinal tract endoscopy (EGD) so far.

Aim: Study was performed to identify the potential quality indicators for EGD.

Material and methods: 3651 EGD reports performed by 12 endoscopists from single endoscopy center were analyzed. The frequencies of following diagnoses were evaluated: esophagus inlet patch (EIP), gastric polyps (GP), and post-ulcer deformation of the duodenum (DD). For each lesion detection rates (DR) were calculated, as well as the sum of 3 DRs for individual endoscopist (composite detection rate – CDR).

Results: The number of procedures performed by individual endoscopists within 2 years period ranged from 60 to 1034. The diagnoses of EPI, GP, and DD were established in 5.5%, 17.0% and 4.6% patients, respectively. The DR ranges for the 12 doctors were: 0 – 11.4% (EIP-DR), 5.4 – 28.1% (GP-DR), and 0 – 7.7% (DD-DR); χ^2 test revealed all differences as statistically significant ($p < 0.001$). CDR ranged from 9.4% to 39.1%. Mean CDRs for the quartiles of endoscopists (worst to best performance) were: 10.7%, 21.5%, 27.5% and 36.8%. CDR correlated with number of procedures performed ($r = 0.46$) and the rate of biopsy for histological examination ($r = 0.81$). There was a tendency for arbitrarily "slower" endoscopists to have higher CDRs (mean CDR 31.5% vs. 20.1% for "faster", $p = 0.09$).

Conclusions: The frequencies of selected EGD diagnoses reported by individual doctors are significantly different. These lesions could serve as potential quality indicators for EGD.

Impact of diabetes mellitus on esophageal inflammation in patients with gastroesophageal reflux disease

prezentacja ustna

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Introduction: According to recent studies complications of gastroesophageal reflux disease (GERD) occur more frequently in patients with diabetes mellitus than in non-diabetic patients.

Aim: To assess the influence of diabetes on clinical presentation and occurrence of esophageal inflammatory changes in patients with GERD.

Material and methods: Seventy-nine adult patients diagnosed with GERD (27 with diabetes (GERD-D) and 49 non-diabetic (GERD-ND)) were involved in the study. Diagnosis of GERD was based on Frequency Scale for the Symptoms of GERD and subjects who scored ≥ 8 points were involved. Body mass index (BMI) and waist-hip ratio (WHR) were calculated, as well as biochemical serum analyses and gastroscopy were performed. Esophageal inflammation was graded according to Los Angeles classification. The association of endoscopic esophageal changes and diabetes was assessed.

Results: There were no significant differences between groups regarding to sex. GERD-D patients were older than GERD-ND (mean age: 67.3 ±11.1 years vs. 57.4 ±16.4 years respectively, $p = 0.0397$). BMI and WHR were higher in GERD-D patients than in GERD-ND (mean BMI: 31.2 ±4.8 kg/m^2 vs. 26.6 ±4.8 kg/m^2 respectively, $p < 0.001$; mean WHR 0.99 ±0.09 vs. 0.9 ±0.07, respectively, $p = 0.005$). GERD-D patients had higher mean score in Symptoms Scale 20.6 ±7.5 points than GERD-ND patients 17.6 ±6.5 points, but differences were not statistically significant. GERD-D patients more frequently than GERD-ND group reported discomfort (27.6% vs. 10%) and heartburn after meals (24.1% vs. 8%), $p = 0.018$, respectively. Esophageal esophagitis occurred more frequently in GERD-D patients than in GERD-ND, 59.3% vs. 34%, $p = 0.03$, respectively. Hiatal hernia was observed more frequently in GERD-ND patients – 42 (85.7%) than in GERD-D ones – 18 (66.7%), however the difference was not statistically significant ($p = 0.096$).

Conclusions: Diabetic patients with GERD suffer more frequently from esophagitis as well as GERD symptoms in postprandial time, what may result from coexisting neuropathic disorders.

Searching for means supporting the diagnostic process of gastroesophageal reflux disease by computer analysis of esophageal impedance courses using the wavelet distribution

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Introduction: The esophageal impedance is an important tool for diagnosing some forms of gastroesophageal reflux disease (GERD), especially those refractory to treatment. Interpreting the results of 24-hour impedance monitoring together with pH-metry is time-consuming and the conclusions of such analysis can sometimes be subjective. Using the knowledge from the field of biomedical engineering, an attempt was made to simplify the analysis of diagnostic tests in patients with GERD by computer analysis of esophageal impedance courses using the wavelet distribution.

Aim: Searching for tools supporting esophageal impedance analysis in order to improve GERD diagnosis.

Material and methods: Wavelet analysis of the results from 32 patients with suspected GERD was made. In each case a 24-hour esophageal pH-impedance monitoring was performed. The patients were divided into three groups: 17 with acid reflux, 6 with non-acid reflux and 9 without reflux. For the initial wavelet analysis two wavelets were selected: Morlet and Daubechies (db3). For each of the patient's pH-impedance test a 128-level wavelet decomposition was performed and a sum of wavelet coefficients was plotted.

Results: Our research showed that for both db3 and Morlet wavelets the plots of sum of wavelet coefficients for healthy patients fit into a defined space on the Cartesian chart. The same plots for patients with non-acid reflux occupy a much wider space and more then 2/3 of them are above the plots of healthy people. On this basis it is possible to determine the probability range for pathological or physiological course and the area of equivocal results that require individual interpretation. It was also noted that db3 wavelet coefficients for healthy people are almost always (90%) greater than 0.5×10^6, while for patients with acid reflux values of wavelet coefficients start from 0.2×10^6. This finding

allows to determine a threshold value for patients without reflux or with suspicion of acid reflux.

Conclusions: There are characteristic features of the esophageal impedance signal that can be obtained in an algebraic manner to serve as sensitive diagnostic criteria for GERD. Presented results are one of the first effective attempts to characterize the features of esophageal impedance signal that can be interpreted by computer algorithms. Using the above methods should increase the accuracy and decrease the time needed for diagnosing GERD.

The role of high-resolution esophageal manometry in the diagnosis of patients with dysphagia and suspected eosinophilic esophagitis – preliminary report

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Introduction: In recent years, a significant increase in the incidence of eosinophilic oesophagitis (EoE) has been observed. In people predisposed to EoE in response to food and inhalation allergens, a chronic inflammatory process of the esophagus wall develops and leads to fibrosis and esophageal motility disorders. A modern tool and gold standard used to diagnose functional disorders of the esophagus is high-resolution manometry (HRM). This allows us to believe that HRM can be used as a less invasive method of assessing the effectiveness of treatment of EoE in relation to currently used endoscopic examinations.

Aim: To evaluate correlation between esophageal HRM motility disorders with symptoms of dysphagia, endoscopic and histological results with assessment of quality of life in patients with suspected EoE.

Material and methods: We examined 23 persons, but only 10 patients with symptoms of dysphagia and EoE were included in the project, 13 of them were included to a control group. Each patient completed a questionnaire regarding the state of health and symptoms and The Gastrointestinal Quality of Life Index (GIQLI), underwent HRM, upper endoscopy with biopsies from esophagus. Those, who met criteria for the diagnosis of EoE (≥ 15 eosinophilis/hpf) began treatment with proton-pump inhibitor therapy (PPI). After 8 weeks they completed questionnaires, underwent HRM and endoscopy with esophageal biopsies again. HRM analysis was performed according to the Chicago classification v4.

Results: Only 3 patients met full histological criteria of EoE, 7 patients had biopsies with a count between 5 and 14 eosinophils/hpf (a potential EoE diagnosis). All patients had peripheral eosinophilia. HRM-findings in EoE were normal in 2 (20%), 8 (80%) patients had nonspecific motility disorders in a distal part of the esophageal corpus as weak peristalsis and frequent failed peristalsis. The severity of symptoms assessed in the questionnaire and GIQLI correlated with degree of esophageal eosinophilia and HRM-findings. In control group in HRM were no specific changes.

Conclusions: Most of patients with EoE have motility disorders according to type of weak peristalsis which can produce dysphagia. After PPI treatment they feel improvement and peripheral eosinophilia decreased but further evaluation is needed.

Narrow band imaging (NBI) and increased focus improves cervical inlet patch detection

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Introduction: Gastric inlet patch detection rate (GIPDR) recently has been proposed as potential quality indicator of esophagogastroduodenoscopy, however factors that affect GIPDR have not been investigated yet in the prospective randomized trials.

Aim: To investigate if endoscopist's focus and narrow band imaging (NBI) improves the GIPDR.

Material and methods: It was a prospective randomized study. Group of a thousand patients was enrolled into the study, patients were assigned to white light endoscopy (WLE) and NBI in 1 : 1 ratio. Imaging techniques were different only during esophagus in-

spection. First 500 endoscopies were performed in standard focus, next 500 examinations were performed with enhanced focus on the presence of gastric inlet patch. To determine the impact of the awareness study group was compared with 460 endoscopies performed before (control group).

Results: GIPDR during study was 8%. The difference in GIPDR between WLE and NBI groups was not significant (6.6% vs. 9.4%, $p = 0.1$), as well as between groups with standard and enhanced focus (6.6% vs. 9.4%, $p = 0.1$). Study's group GIPDR was higher than in control group (8% vs. 4.1%, $p = 0.006$). The difference in GIPDR was significantly greater in enhanced focus group ($p = 0.001$) and NBI group ($p = 0.001$). The differences between control group and WLE as well as between control group and standard focus group were not significant.

Conclusions: Application of NBI during esophagus inspection and enhenced focus improve GIPDR.

Non-invasive markers of esophageal varices in patients with autoimmune hepatitis – not only BAVENO VI

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Introduction: Esophageal varices (EV) develop in patients with decompensated liver cirrhosis. The current BAVENO VI criteria (J Hepatol 2015) recommend the use non-invasive methods, i.e. liver transient elastography (TE) and platelet count (PLT), to stratify the need of endoscopic surveillance: patients with TE < 20 kPa and PLT > 150,000 can safely avoid screening endoscopy. On the other hand, TE results can be falsely high in the setting of active hepatitis, e.g. autoimmune hepatitis (AIH). Thus non-invasive markers of EV presence are urgently needed.

Aim: To assess TE of the spleen as well as serum CD163 and VCAM-1 as potential markers of EV presence in patients with AIH.

Material and methods: We prospectively recruited 87 patients with pure AIH (66 women, mean age: 40.7 years, 41 with liver cirrhosis, 13 with AIH flare), who underwent liver and spleen TE measurements using shear wave elastography (SWE, SuperSonic Imagine Aixplorer®). Serum samples were collected and CD163 as well as VCAM-1 were quantified using ELISA. Gastrofiberoscopy was performed in all patients within 18 months from SWE.

Results: In total, 42 (48.3%) patients had esophageal varices, and 33 (37.9%) required ligation. Overall, 17 (19.5%) patients fulfilled the BAVENO VI criteria for variceal screening and indeed 15 of them had EV. EV had excellent correlation with spleen SWE and liver SWE, serum VCAM-1 and PLT (all $p < 0.001$), but not CD163 ($p > 0.05$). Spleen SWE and liver SWE showed significant correlations with VCAM-1 and PLT, but only liver SWE correlated with both serum IgG and CD163 (all $p < 0.001$), what highlights the impact of active liver inflammatory on SWE. Spleen SWE had AUROC 0.95 (95% CI: 0.9–1.0, $p < 0.001$) for detecting EV, whilst AUROC of liver SWE was 0.85 (95% CI: 0.77–0.94, $p < 0.001$). The optimal cut-off of spleen SWE for detecting EV was 28.5 kPa and it had sensitivity 87.8% and specificity 90.6%. Among serum markers only VCAM-1 had significant predictive value for the presence of EV: AUROC 0.84 (95% CI: 0.75–0.92, $p < 0.001$).

Conclusions: Spleen SWE is a reliable non-invasive marker of EV. Moreover, liver SWE and serum VCAM-1 could be helpful in detecting patients in high risk of EV. Of interest, spleen SWE and serum VCAM-1 have low correlation with inflammatory markers, what could be helpful to stratify EV risk patients with active hepatitis.

Protective role of glutathione during inhibition of cyclooxygenase in experimental model of gastric damage

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Introduction: Glutathione plays important role in the maintenance of gastric mucosal barrier due to its antioxidative properties. Action of commonly known non-steroidal anti-inflammatory drugs is related to cyclooxygenase inhibition and this is also way to produce side effects in a stomach.

Aim: Determination of selective or non-selective cyclooxygenase (COX) inhibition on reduced glutathione (GSH) concentration in gastric mucosa.

Material and methods: Experiments were carried out on male Wistar rats. We administered both non-selective (aspirin) and selective (SC-560 for COX-1 or rofecoxib for COX-2) inhibitors. GSH concentration in gastric mucosa was measured by colorimetric methods. Gastric lesions were assessed by planimetry.

Results: We documented that inhibition of COX (selective and non-selective) resulted in worsening of gastric mucosal healing, accompanied by depletion of GSH pool in a tissue.

Conclusions: Deleterious action of COX inhibitors is associated with decreae in GSH concentration in a gastric mucosa.

Sekcja 2. Choroby trzustki

Clinical and epidemiological aspects of acute pancreatitis – 10 years of single-center experience

prezentacja ustna

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Introduction: In recent years we can observe an increase in acute pancreatitis incidence (AP). The analysis of scarce Polish epidemiological data in comparison to studies abroad, allows the prediction that Poland is a country with one of the highest rates of incidence of AP, which is a significant clinical problem.

Aim: Defining select clinical and epidemiological issues of patients with AP.

Material and methods: Retrospective clinical data analysis of 370 patients with AP, hospitalized between 2007 and 2016 at the Department of Gastroenterology and Hepatology of Medical University of Gdańsk.

Results: Acute pancreatitis was diagnosed during 406 hospitalisation in 370 patients (237 (64.05%) male, average age: 52.15 (21–93)). The most common etiologies were: alcohol (182/406 – 44.83%) and gallstones (135/406 – 33.25%). AP of high clinical severity was diagnosed in 60/370 (16,22%) patients. Average time of hospitalisation was 16.13 (1–121) days. Mortality was 12/406 (2.96%). The after effect of AP in form of parapancreatic fluid reservoirs was diagnosed in 202/406 (54.59%) cases. Comparing the early phase of the study (2007–2011) and the later one (2012–2016) a shorter time of hospitalisation was proven (20.8 vs. 10.7,

$p < 0.05$) and a lower mortality (4.1% vs. 1.6%, $p < 0.05$) of the patients in the later phase of the study. Moreover basing on the analysis of patients blood tests it has been discovered that, patients with severe AP comparing to group with mild and moderate AP have significantly elevated levels of C-reactive protein (124.18 ±95.93 mg/l vs. 45.22 ±58.73 mg/l, $p < 0.05$) and amylase (3996.6 ±15267.03 U/l vs. 1206.84 ±2523.43 U/l, $p < 0.05$) during the first days of hospitalisation.

Conclusions: The development of conservative treatment options for AP, especially in early stages of the illness, has significantly lowered the mortality rate in AP at our center.

Alpha smooth muscle actin (αSMA) immunohistochemistry use in the differentiation of pancreatic cancer from chronic pancreatitis

prezentacja ustna

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Introduction: In pancreatic cancer (PDAC) and chronic pancreatitis (CP) similar mechanisms of fibrosis occur. The main cells involved in fibrosis are pancreatic stellate cells (PSCs), which constitute about 4–7% of the total pancreatic mass. In response to damage, inflammation or cancer, PSCs are activated and transformed into myofibroblast-like cells, gain the muscle cell phenotype and express alpha smooth muscle actin (αSMA), which is considered to be the best known fibrosis marker.

Aim: To evaluate the expression of αSMA in patients with PDAC and CP as the possible differentiation marker.

Material and methods: We enrolled 114 patients undergoing pancreatic resection: 83 with PDAC and 31 with CP. Normal fragments of resected specimen from 21 patients represented the control tissue. The expression of αSMA was detected in surgical tissue specimen with immunohistochemistry (Abcam antibodies, GB) and was recorded semi-quantitatively.

Results: Immunohistochemical analysis showed cytoplasmic expression of the αSMA protein in pancreatic stromal cells. Mean expression of aSMA protein in PDAC was significantly higher compared to CP: –2.42 ±0.37 vs. 1.95 ±0.45 ($p < 0.01$). The αSMA expression in the control group was 0.61 ±0.45 and was 4-fold lower than in PDAC and 3-fold lower than in CP. Differences between all groups were statistically significant ($p < 0.01$). Strong immunoexpression of the αSMA protein was found in the vast majority (80.7%) of patients with PDAC and in about half (58%) of patients with CP, and not at all seen in healthy tissue. The expression of αSMA of different intensity was found in all patients with PDAC and CP, while in healthy tissue was minimal or absent. In PDAC patients, αSMA expression was significantly higher in tumors of diameter higher than 3 cm compared to smaller ones ($p = 0.017$).

Conclusions: Presented findings support the hypothesis of the role of fibrosis in pancreatic diseases and confirm that the medium or high expression of αSMA clearly differentiates CP and PDAC from healthy tissue. Moreover, expression of αSMA may be possibly useful as the prognostic marker in PDAC.

Impact of intravenous fluid resuscitation on length of hospitalization and inflammatory markers in patients with acute pancreatitis – a retrospective study

prezentacja ustna

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Introduction: The worldwide incidence of acute pancreatitis (AP) is rising, thus further increasing its burden on healthcare services. AP is an inflammatory process which causes a local and systemic inflammatory response syndrome. Over last decades, the treatment of AP has gradually developed towards tailored approach, with a distinctive role of intravenous fluid therapy. Nevertheless, current data regarding amount of fluid administered to patients is still controversial.

Aim: The primary aim of the study was to retrospective investigate the impact of intravenous fluid resuscitation on duration of hospitalization and levels of inflammatory markers in patients with AP. The secondary goal was to assess retrospectively the etiology of AP and its correlation with the demographic data.

Material and methods: The data of 271 patients diagnosed with AP was retrospectively reviewed. The patients were admitted to the Department of Digestive Tract Disease between January 2012 and December 2016. Data was acquired from patients' medical records and included sex, age, comorbidities and Atlanta classification of AP as well as its etiology. The association between those data and the hospitalization duration and inflammatory markers levels were assesses.

Results: There was a statistically significant positive correlation between the CRP on day 3 and day 5 of hospitalization and the hospitalization duration ($r = 0.37$; $p < 0.05$ and $r = 0.45$, $p < 0.05$, respectively). Moreover, there was the significant positive correlation between concentration of CRP on day 3 and day 5 of hospitalization and total fluid volume received at first 12 hours of hospitalization ($r = 0.16$, $p < 0.05$ and $r = 0.18$ $p < 0.05$, respectively). Nevertheless, no significant correlation between hospitalization duration and the fluid volume received at first 12 hours was demonstrated. Alcoholic abuse was the major etiological factor of AP which occurred in patients (38.7%), followed by: biliary (28.0%), idiopathic (23.7%) and other (9.6%). Mean age of patients with alcoholic AP was significantly lower than patients with biliary AP (44.3 ±12.9 vs. 58.0 ±17.5, $p < 0.05$).

Conclusions: We demonstrated that alcohol is a major etiological factor in AP in examined population. Importantly, CRP in day 3 and day 5 of hospitalization may be regarded as a marker of clinical severity and it could potentially be used to predict the necessity of longer hospitalization. Furthermore, our study demonstrated that aggressive fluid resuscitation may be associated with the severe AP clinical course.

Platelet parameters evaluation as a non-invasive marker of inflammation in Crohn's disease

prezentacja ustna

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Introduction: Immunological disturbances play a crucial role in the pathogenesis of Crohn's disease (CD) by leading to inflammation of the intestinal mucosa. Blood clotting disorders accompany this inflammation and reinforce it by a positive feedback loop. Platelets (PLT) are important key regulators in inflammatory disorders beyond hemostasis and thrombosis.

Aim: To assess if platelet parameters determined as standard in blood count, may be used as a non-invasive marker for monitoring disease activity in CD patients.

Material and methods: 100 patients with diagnosed CD were enrolled in the study (W50/M50) at the mean age of 33.5 ±13.3 years, hospitalized at Department of Gastroenterology, Medical University of Lodz with different clinical course, disease location and a heterogeneous therapy. The clinical state of each patient was classified according to Harvey-Bradshaw index (H-B). In all patients, venous blood samples were drawn for assessment of CRP, iron levels (Fe), blood count (WBC – white blood cells, Hb – hemoglobin, PLT – platelets, MPV – mean platelet volume, PCT – plateletcrit were analyzed) and the stool sample for fecal calprotectin (FC) evaluation. The results were analyzed by dividing patients into 2 groups – exacerbation and remission considering the FC > 100 or the H-B ratio ≥ 5.

Results: Positive correlation was found between FC and PLT ($r = 0.405$, $p = 0.000$) and PCT ($r = 0{,}366$, $p = 0.000$) and negative correlation was found between FC and MPV ($r = –0.346$, $p = 0.000$). Similarly, a positive correlation was found between H-B and PLT ($r = 0.376$, $p = 0.000$) and PCT ($r = 0.319$, $p = 0.001$), and no correlation between H-B and MPV was found ($p = 0.141$). In the analysis of patients with exacerbation, statistically significant results with all platelet parameters were found in the group with H-B ≥ 5. In the group with FC > 100, the number of PLT ($p = 0.023$) and MPV ($p = 0.028$) correlated with the FC, there was no correlation with PCT, but the result was close to statistical significance ($p = 0.055$). There were no such correlations in the group of patients in remission. Among patients in

the period of exacerbation, the correlation of FC with the most frequently determined inflammatory parameters – CRP and WBC, has not been demonstrated. In the case of the correlation with H-B index, no correlation with WBC was found, whereas correlation with CRP showed a weak relationship ($r = 0.033$, $p = 0.05$).

Conclusions: Our study showed that level of platelets is a useful, non-invasive, inexpensive and underestimated method for monitoring inflammation in CD.

IGF-1 (insulin like growth factor 1) and IGFBP-2 (insulin like growth factor binding protein 2) serum levels as potential biomarkers in differentiation between chronic pancreatitis (CP) and pancreatic adenocarcinoma (PDAC) in reference to pancreatic diabetes

prezentacja ustna

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Introduction: The causes of diabetes in both CP and PDAC have not been fully explained yet. Lots of studies show close links between IGF axis, especially IGF-1 and glucose metabolism. IGF-1 has been also connected with development of PDAC.

Aim: The aim of this study was to evaluate the serum concentrations levels of IGF-1 and IGFBP-2 in patients with CP and newly diagnosed PDAC. Their values in diabetes (DM) were also assessed.

Material and methods: The study included 83 patients with CP, 92 patients with PDAC and 20 healthy subjects as a control group. The concentrations of IGF-1 and IGFBP-2 were estimated with ELISA (Corgenix UK Ltd R&D Systems). The study protocol was approved by the Bioethics Committee at the Medical University of Lodz.

Results: The serum IGF-1 level was significantly higher in CP compared with patients with PDAC (81.11 ±57.18 ng/ml vs. 53.18 ±36.05 ng/ml, $p = 0.000041$), and both CP patients and PDAC patients were different from controls (81.11 ±57.18 ng/ml vs. 70.66 ±16.57 ng/ml, $p < 0.00001$ and 53.18 ±36.05 ng/ml vs. 70.66 ±16.57 ng/ml, $p = 0.000027$). Patients with both CP and cysts were noted to have a significantly higher level of IGF-1 compared with those who had CP without cysts (93.55 ±64.78 ng/ml vs. 60.35 ±34.68 ng/ml, $p = 0.016$). IGF-1 in CP without DM was higher compared to those with PDAC without DM (91.13 ±65.48 ng/ml vs. 54.75 ±40.41 ng/ml, $p = 0.0002$). In patients with CP and DM the IGF-1 was also higher in comparison to PDAC with DM (62.20 ±32.38 ng/ml vs. 48.45 ±24.88 ng/ml, $p = 0.049$). The serum IGFBP-2 level was significantly higher in CP patients compared to PDAC patients (512.42 ±299.77 ng/ml vs. 301.59 ±190.36 ng/ml, $p = 0.000082$). In CP and PDAC group the IGFBP-2 serum level was significantly elevated compared to control group (512.42 ±299.77 ng/ml vs. 51.92 ±29.40 ng/ml, $p < 0.00001$ and 301.59 ±190.36 ng/ml vs. 51.92 ±29.40 ng/ml, $p < 0.00001$). IGFBP-2 in CP without DM was also higher compared to those with PDAC and without DM (559.39 ±281.43 vs. 296.53 ±196.93, $p = 0.00001$).

Conclusions: IGF-1 and IGFBP-2 are good biomarkers of pancreatic diseases, especially CP and PDAC. Elevated levels of IGF-1 in the course of CP may indicate the presence of pancreatic cyst. IGF-1 may be an indicator which signals whether pancreatic diabetes comes from CP or PDAC. Further studies are necessary to examine if this biomarker will be able to differentiate pancreatic diabetes as a first symptom of PDAC.

Pancreatic cystic lesions in diabetes mellitus patients

prezentacja ustna

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Introduction: According to literature and previous data from our department, exocrine pancreatic insufficiency is relatively common among patients with diabetes mellitus (DM). Marked alterations in the exocrine pancreas are observed in patients with DM, including changes in size, morphology, and histology. Atrophy of the gland and acini, lymphocytic infiltration, moderate to severe fibrosis, and fatty changes are usually noted. Pseudocysts are the most common cystic lesions and may be formed in the setting of acute or chronic pancreatitis. However, whether DM is involved or not in pancreatic cysts formation is still not well established.

Aim: To investigate frequency and risk factors of cystic lesions in diabetic patients.

Material and methods: 161 patients with DM, with no previous history of pancreatic diseases (acute pancreatitis), were prospectively included to the study. Endosonography (EUS) followed with fine needle aspiration biopsy was then performed. Subjects with cystic lesions were further analyzed with regard to the age, type and duration of DM (lasting less and more than 3 years) and pharmacological treatment (insulin/metformin use).

Results: Finally 33 of 161 patients (20.5%) were recognized with cystic lesions of pancreas. Among them 5 patients were clasified as cystic neoplasms, and 28 as pseudocysts. In the group of patients with pseudocysts, cystic lesions were significantly more prevalent in individuals with DM lasting less than 3 years. Prevalence of cystic lesions was significantly higher in metformin users in comparison to others diabetic patients ($p < 0.05$). Cystic lesions were more frequent in patients above 50 years of age ($p < 0.05$).

Conclusions: The prevalence of cystic lesions in diabetic population is higher than in the general population. DM seems to play a major role in the process of cyst development, especially in patients without previous history of pancreatitis. Higher prevalence of cystic lesions in early diabetes seems to be the first stage of pancreatic injury. The exact role of diabetes duration and type of treatment should be established.

Gastrointestinal symptoms in diabetic patients – "diabetic exocrine pancreatopathy" or small intestinal bacterial overgrowth?

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Introduction: Gastrointestinal symptoms are common complications of diabetes mellitus (DM), but their cause is not fully recognized. Abnormalities in exocrine pancreatic function have been reported in DM.

Aim: To evaluate the causes of abdominal symptoms (AS) in patients with diabetes mellitus, with special focus on exocrine pancreatic function and small intestinal bacterial overgrowth (SIBO).

Material and methods: This was a prospective, non-randomized study, one-center study. Survey has been performed among 223 patients, 77 were excluded based on history of pancreatic disorders and/or alcohol abuse. 59 patients met inclusion criteria defined as presence of abdominal symptoms (40%), and 87 (60%) with no abdominal symptoms (NS) were included into control group. Serum lipase (L) and fecal elastase 1 activity (FEC) (using sensitive immunoenzymatic assay), and presence of SIBO by lactulose hydrogen breath test, were determined in both groups.

Results: Clinically significant increase of lipase activity was found in 32.5% of diabetes mellitus patients, with no difference between abdominal symptoms and no abdominal symptoms groups, and significant decrease of FEC activity was found in 12.5% of diabetes mellitus patients, with no difference in both groups as well. In contrast, SIBO was diagnosed significantly more often in patients with abdominal symptoms (58%) than in control group with no abdominal symptoms (20%).

Conclusions: Abdominal complaints are common in diabetes mellitus patients. Significant changes in serum lipase and FEC activity in DM patients can sug-

gest presence of "diabetic exocrine pancreatopathy" or chronic pancreatitis, however are not connected with abdominal symptoms. According to our study, abdominal symptoms in diabetes mellitus patients are more often related to SIBO.

Remote ischemic conditioning compared to standard diclofenac for prevention of post-ERCP pancreatitis (PEP) – single-center study

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Introduction: Acute pancreatitis (AP) is the most common and often severe complication of endoscopic retrograde cholangiopancreatography (ERCP). Remote ischemic preconditioning (RIPC) is a strategy for using the endogenous protective capacity of the body against multi-organ damage by ischemia-reperfusion (IR). Despite the wide use of this method, there are no studies evaluating the efficacy of RIPC in pancreatic protection.

Aim: Evaluation of the efficacy of induced upper hand ischemia compared to diclofenac treatment in patients qualified for endoscopic retrograge cholangiopancreatography (ERCP).

Material and methods: 57 patients were randomly allocated into three groups: 1 – standard diclofenac treatment, 2 – diclofenac + RICP, 3 – RICP only. RIPC was stimulated by giving three cycles of 5 min of ischemia followed by 3 min of reperfusion of upper arm using a blood pressure cuff inflated to 200 mm Hg. After overnight fasting ERCP were performed. Patients were observed for at least 48 h after the procedure. Serum and urine amylase activities were measured before ERCP and 8 and 24 h after the procedure. The primary outcome parameter was PEP and safety of the method. Acute pancreatitis was treated according to current standards.

Results: There were no significant differences in the rate of post-ERCP pancreatitis between three groups (6 patients overall; 2 in diclofenac, 2 in RIPC group and 2 patients in RIPC + diclofenak group). Hyperamylazemia was observed in both diclofenac and RIPC group in the same percentage and was absent in RIPC + diclofenac group, however this was not statistically significant. No other adverse events were observed in three groups.

Conclusions: This study indicated that RICP seems to be safe and promising method of PEP prevention, comparable to diclofenac, which is a standard procedure, and may be considered as one of post-ERCP prevention options alone or together with diclofenac. However, further research on the effectiveness of the method are necessary.

Do the etiological factors of acute pancreatitis affect the course of the disease?

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Introduction: Acute pancreatitis (AP) is an inflammation of the pancreas which is the most frequently caused by cholelithiasis and alcohol abuse. The morbidity of AP in regard to certain etiological factor differs between the European countries with alcoholic AP to be most prevalent in Eastern Europe.

Aim: The aims of the study were to retrospectively assess the etiology of AP and to evaluate the correlation between the etiology of AP and demographic data, C-reactive protein (CRP), white blood cells count on admission, duration of hospitalization, severity and mortality of AP.

Material and methods: The history of patients hospitalized from September 1st 2014 to August 31st 2016 in the Department of Digestive Tract Diseases in Lodz, Poland due to acute pancreatitis of any etiology was retrospectively assessed. Two means were compared using Student's *t*-test with 95% confidence interval. Three means were compared using ANOVA with Tukey's test as a posthoc test. Correlations were assessed using *r*-Pearson correlation with linear regression. Chi-square test was used when comparing groups or Fisher's exact probability test when the sample size was lower than 5. *P*-value less than 0.05 was considered as significant.

Results: Alcoholic abuse was the major etiological factor of AP which occurred in 149 (52.3%) patients, followed by: biliary (27%), cancer (2.5%), hypertriglyceridemia-induced, iatrogenic, drug-related (0.7% for all). The exact cause was not clarified in 46 (16.1%) patients. Mean age of patients with alcoholic AP was significantly lower than patients with biliary AP (42.7 ±0.98 vs. 60.23 ±1.95, $p < 0.001$). Among all patients, females were significantly older compared to males ($p < 0.001$). Alcoholic AP was significantly more common in males than females ($p < 0.001$). There was no relationship between etiology and severity of AP ($p = 0.61$). There was a statistically significant correlation between the CRP on admission and length of hospitalization ($p < 0.001$, $r = 0.2433$). Also, the concentration of CRP on admission was significantly higher in patients with moderate and severe compared with mild disease ($p < 0.01$ and $p < 0.001$, respectively).

Conclusions: We demonstrated that alcohol is a major etiological factor of AP in patients admitted to our Department and affects mostly males below 65 years old. Female above 40 years old more frequently suffers from biliary AP. CRP can be regarded as a marker of clinical severity and it could potentially be used to rapidly predict the necessity of longer hospitalization in these patients on admission.

Metabolism of tramadol in patients with chronic pancreatitis

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Introduction: Patients with chronic pancreatitis (CP) suffer from pain. Pain management should start with adherence to general recommendations. If such treatment is insufficient, analgesic therapy should be inserted. The previous study of the Authors revealed changes in metabolism of paracetamol in patients with CP [1]. Tramadol (TRM) is one of the most popular analgesics, primarily metabolized by CYP 2D6 to its main metabolite O-desmethyltramadol (M1), which is more potent than parent drug.

Aim: The present work is the single-dose study of the pharmacokinetic parameters of TRM and M1 in patients with CP.

Material and methods: Eleven adult patients suffering from CP (age, mean ± SD: 48.09 ±11.02 years) entered the study. All patients received an oral single dose of tramadol (capsules, 2 × 50 mg). Venous blood samples were drawn 0,1, 2, 3, 4, 5, 6, 7, 8, 12 and 24 hours after dosing. The plasma concentrations of TRM and M1 were measured with the validated high-pressure liquid chromatography method with fluorescence detection (HPLC-FL). The pharmacokinetic parameters of TRM and M1 were calculated by non-compartmental method.

Results: The main pharmacokinetic parameters for tramadol were as follows: Cmax 193.3 ±72.3 µg/l; tmax 2.0 ±0.89 h; AUC0-t 1217.7 ±483.2 µg · h/l; AUC0-inf 1520.8 ±718.1 µg · h/l; AUMC0-t 5947.6 ±2702.7 µg · h2/l; AUMC0-inf 11905.1 ±8032.5 µg · h2/l; Vd 7.57 ±2.22 l/kg; MRT0-inf 7.35 ±1.58 h; Cl 1.08 ±0.37 l/kg · h, and t0,5 4.66 ±0.89 h. The main pharmacokinetics parameters for M1 were as follows: Cmax 43.8 ±11.5 µg/l; tmax 2.54 ±0.93 h; AUC0-t 331.8 ±88.3 µg · h/l; AUC0-inf 459.6 ±176.7 µg · h/l; AUMC0-t 1755.2 ±513.4 µg · h2/l, and MRT0-inf 9.32 ±3.08 h. Additionally, M1/TRM ratios were calculated for Cmax (0.25) and AUC0-t (0.30).

Conclusions: Cmax of tramadol in CP patients was within the therapeutic range associated with its analgesic activity. Average M1/TRM ratios in analyzed patients were comparable with other populations (0.27) [2].

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Analysis of the incidence of neoplastic transformation in a group of patients operated due to cystic neoplasms in the clinic's material

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Introduction: Cystic tumors of the pancreas are currently an important field of interest for a modern medicine, the diagnosis of cystic neoplasms is a great clinical challenge for a multi-specialist team qualifying patient for treatment. In the branch-duct IPMN the average risk is less than 10% for tumors smaller than 2 cm. In the case of IPMN from the main duct, the risk ranges from 50% to 92%. Risk assessment for the MCN group is closely related to the size of the tumor and the presence of nodules and is about 12%. Proper recognition of main-duct IPMN is the key to selecting the right treatment strategy for patients, because the risk of transformation in this group is high.

Aim: To analyse a group of patients with pre-operative diagnosis of pancreatic cystic tumor in terms of the assessment of the incidence of malignant transformation.

Material and methods: All patients discuss at tumor board in 2016 with the diagnosis of cystic pancreatic tumor were analyzed. Information about the analyzed group of patients was collected, and the results of histopathological examinations, both assessed intraoperatively as well as the result of a full postoperative examination were also analyzed. The results were compared with the initial diagnosis made during multidisciplinary consilium.

Results: In 2016, 168 patients with pancreatic tumors of various types were discussed during interdisciplinary meetings, 55 of these patients were qualified for resection, after analyzing accurate data, 14 patients had preoperative radiological features of cystic tumors. Respectively: IPMN $n = 6$, MCN = 6, IPMN with possible neoplastic transformation $n = 1$, IPMN or change in the course of chronic pancratits $n = 1$.

Conclusions: Based on the available data, it can be concluded that all neoplastic transformation occurred in the group of patients with pre-operative diagnosis of IPMN. After analyzing the diagnostic path of these patients, it can be said that despite the evaluation using modern techniques of radiology and invasive diagnostics and the results of additional laboratory tests, we are not able to fully differentiate cystic changes in the pancreas. On the basis of our own observations, the authors share the recommendation of prior qualification for resection of cystic neoplasms suspected as IPMN or MCN.

Surgical decompression of Wirsung duct reduces serum concentration of SPINK1 in patients with chronic pancreatitis

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Introduction: Chronic pancreatitis is a common disease characterized by progressive, destructive and inflammatory process of multifactorial etiology, that leads to impairment of exocrine and endocrine of the organ. There are some suggestion indicating an important role of pancreatic secretory trypsin inhibitor known as serine protease inhibitor Kazal type 1 (SPINK 1) in the pathogenesis of chronic pancreatitis. SPINK 1 is involved in self-regulation of acinar cell phagocytosis, proliferation and play role as growth factor. SPINK 1 has protective roles in pancreatitis by dual mechanisms – one as a trypsin inhibitor, second as a suppressor of autophagy.

Aim: The primary aim of this study was to determine the blood levels of SPINK1 in patients with chronic pancreatitis (CP) submitted to surgical or endoscopic decompression of pancreatic duct (PD). Additionally, we measured trypsin activity levels.

Material and methods: Two groups were identified, surgical (group A) and endoscopic (group B). Levels of SPINK1 and trypsin activity were measured at baseline and 6 months after pancreatic duct decompression and then compared within the groups. SPINK1 levels were determined with Human ELISA Kit.

Results: Group A and B were made up of 30 and 28 patients, respectively. Baseline features of the groups were similar. A decrease in SPINK1 levels was significant only in group A 46.88 to 16.10 ng/ml ($p = 0.001$). On the contrary, trypsin activity changed significantly in group B 40.01 to 34.92 mU/ml ($p = 0.01$). Patients of group A showed a significant increase in BMI, before and after treatment. The pain score pre- and post-treatment reduced significantly in both groups ($p < 0.001$).

Conclusions: We demonstrate for the first time a significant decrease of SPINK1 levels after surgical decompression of PD and a reduction of trypsin activity analysis after endoscopic decompression. The meaning of this phenomena is yet to be explained and it should be further explored.

Endoscopic treatment of walled-off pancreatic necrosis complicated with pancreaticocolonic fistula

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Introduction: Pancreaticocolonic fistulas (PCFs) are serious complication of acute pancreatitis related with high mortality.

Aim: To evaluate the efficiency and safety of endoscopic treatment in patients with walled-off pancreatic necrosis (WOPN) complicated with PCF.

Material and methods: This is a retrospective analysis of results and complications in the group of 226 patients, who underwent endoscopic treatment of symptomatic WOPN between years 2001 and 2016 in our medical center.

Results: PCF was recognized in 21/226 (9.29%) patients. Transmural drainage was performed in 20/21 (95.24%) patients. Transpapillary drainage was used in 2/21 (9.52) patients. The mean time since the start of endotherapy to the diagnosis of a fistulas was 9 (3–21) days. Fluoroscopic nasocystic tube-check imaging of an existing drain was the initial imaging diagnosis of a PCF in 19/21 (90.48%) patients. The mean duration of endoscopic drainage of WOPN was 39.29 (15–87) days. Procedure-related adverse events occurred in 10/21 (47.62%) patients and most of them were treated conservatively. Three patients required surgical treatment. One patient died during endotherapy. The closure of PCF was confirmed via imaging in 17/21 (80.95%) patients. The average time since the recognition till the closure of PCF was 21 (14–48) days. Complete therapeutic success of WOPN complicated with PCF was reached in 16/21 (76.19%) patients. Long-term success of endoscopic treatment was achieved in 15/21 (71.43%) patients.

Conclusions: Endoscopic treatment of patients with WOPN complicated with PCF is an effective method with an acceptable number of complications. The complete regression of the WOPN may lead to spontaneous closure of pancreaticocolonic fistulas.

The role of endoscopic treatment of pancreatic duct disruption in patients with walled-off pancreatic necrosis

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Introduction: The place of endoscopic techniques in the treatment of main pancreatic duct (MPD) disruption arising in the course of acute necrotizing pancreatitis (ANP) remains unclear.

Aim: To evaluate the role of endoteraphy pancreatic duct disruption in patients with walled-off pancreatic necrosis (WOPN).

Material and methods: The retrospective analysis of results and complications in the group of 226 patients,

which underwent endoscopic treatment of symptomatic WOPN between years 2001 and 2016 in our medical center.

Results: Endoscopic retrograde pancreatography (ERP) was performed in 204/226 (90.27%) patients. Partial and complete disruption of the MPD were identified in 103 (50.49%) and 63 (30.89%) out of 204 patients, respectively. Endoscopic treatment was used in all 166 patients with MPD disruption. The success of endoscopic treatment of MPD disruption was achieved in 138/161 (85.71%) patients with WOPN. The therapeutic success of WOPN endotherapy was achieved in 214/226 (94.69%) patients. The mean follow-up duration was 56 (SD = 37.06) (range: 14–158) months. Long-term success of treatment of WOPN was achieved in 182/226 (80.53%) patients.

Conclusions: This study conducted on a large group of patients demonstrated that passive transpapillary drainage is an effective method of treating MPD disruptions in the course of ANP, which improves long-term outcomes of endoscopic treatment in patients with WOPN, reducing the number of recurrent pancreatic fluid collections.

Spontaneous regression of asymptomatic walled-off pancreatic necrosis (WOPN)

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Introduction: Asymptomatic walled-off pancreatic necrosis (WOPN) should be treated conservatively, irrespective of the extent and size of necrosis.

Aim: To evaluate the efficacy and safety of a strategy involving the observation of patients with asymptomatic WOPN over a long period of time.

Material and methods: This study involved the retrospective analysis of 368 patients hospitalized in our department between 2010 and 2016, due to acute pancreatitis and its consequences in the form of pancreatic and peri-pancreatic fluid collection.

Results: Asymptomatic WOPN was identified in 44 patients. The mean observation time was 417.02 days (range: 47–1149 days). Only 1 out of the 44 patients (2.27%) failed to complete the follow-up. The complete regression of WOPN occurred in 30/44 (68.17%) patients. The presence of symptoms related to WOPN were identified in13/44 (29.56%) patients during the observation. The most frequent indication for interventional treatment of WOPN was the infection of pancreatic necrosis, which was identified in 6/13 patients (46.15%).

Conclusions: This study provided evidence to support the fact that careful observation of patients with asymptomatic WOPN is an efficient and safe treatment strategy. Long-term observation of such patients showed that most will experience spontaneous regression of asymptomatic WOPN without any other form of interventional treatment.

Sekcja 3. Choroby wątroby

Significance of selected CCL and CXCL chemokines in the course of alcoholic liver disease

prezentacja ustna

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Introduction: Excessive inflammatory response in the course of alcoholic liver disease (ALD) may induce a massive loss of hepatocytes leading to irreversible liver damage and progressive fibrosis. Chemokines are immune messengers implicated in pro-inflammatory signaling by recruiting selected subsets of leukocytes to the site of inflammation.

Aim: Exploration of the systemic blood expression of selected CCL and CXCL chemokines in patients with ethanol-related liver dysfunction and their accuracy in the noninvasive assessment of ALD liver failure and outcome.

Material and methods: 63 inpatients with ALD (45 males, 18 females, aged 48.63 ±11.38) were prospectively recruited and followed for 30 days. 25 age- and sex-matched healthy volunteers served as the control group. Selected CCL (CCL2/MCP1; CCL17/TARC; CCL20/MIP-3a) and CXCL (CXCL9/MIG, CXCL10/IP-10, CXCL16) chemokine concentrations were quantified in blood samples using immunoenzymatic ELISAs. Correlation coefficients between plasma chemokine levels and (i) indicators of systemic inflammation (neutrophil-to-lymphocyte ratio, C-reactive protein, white blood cell and neutrophile counts, modified Glasgow Prognostic Score (mGPS)), (ii) liver dysfunction severity scores (Child-Turcotte-Pugh, MELD scores, mDF) and (iii) complications of liver disease were calculated. The receiver operating curves (ROC) for studied chemokines were constructed, their areas under the curve (AUCs) checked and multivariable logistic regression applied in order to assess the accuracy in predicting the degree of liver failure and the development of ALD complications.

Results: Significant systemic upregulation of both CCL and CXCL chemokines was observed in patients with ALD. Only CCL17 (TARC) concentrations were markedly decreased indicating that Th2-type immune reactions are attenuated in ALD. None of studied chemokines correlated with aminotransferase activity, but CCL20, CXCL9, CXCL10, CXCL16 showed positive correlations with alkaline phosphatase level. CCL20 and CXCL16 correlated with standard indicators of inflammation. Patients with advanced liver dysfunction (MELD > 20, mDF > 32, Child B and C class) presented with significantly higher CCL20 and 6 non-survivors with significantly higher CXCL10 concentrations.

Conclusions: Both major chemokine subfamilies are upregulated in the course of ALD. The high blood CCL20 concentration seems to be the disease severity indicator, while CXCL10 the predictor of the poor patient's prognosis in ALD.

The PD-1 and PD-L1 expression on peripheral T and B lymphocytes differs in males and females with alcoholic liver disease

prezentacja ustna

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Introduction: Exposure to chronic alcohol consumption, its breakdown metabolites and gut-derived endotoxins dysregulates immune signaling leading to activation of inflammation. As a result the non-resolving inflammatory response and development of alcoholic liver disease (ALD) may occur. The pathway consisting of the programed cell death 1 (PD-1) receptor and its ligand PD-L1 plays a critical role in inhibition of self-reactive and inflammatory effector cells and the protection against immune-mediated tissue damage.

Aim: Evaluation of the PD-1/PDL-1 expression on peripheral T and B lymphocytes and its correlations with conventional markers of inflammation and the severity of liver dysfunction in the course of ALD. Gender-related differences were also investigated.

Material and methods: 84 inpatients with ALD (64 males, 20 females, were prospectively enrolled in the study and assigned to subgroups based on their 1) gender, 2) severity of liver dysfunction (Child-Turcotte-Pugh, MELD scores, mDF), 3) presence of ALD complications, and followed for 30 days. 25 age- and gender-matched healthy volunteers served as the control group. The expression of PD1 and PD-L1 on different lymphocyte subsets was analyzed by a flow cytometer.

Results: The general expression of PD-1 and PDL-1 on T and B cells did not differ between the ALD and control group. When groups were analyzed based on their gender, significantly higher expression of PD1 and PD-L1 on CD19+ in ALD females comparing to controls was observed. ALD females with mDF > 32 showed signifficantly higher expression of PD-1 on CD19+ B cells and PD-L1 on all studied subsets. The same pattern of the PD-1/PD-L1 expression was found when ALD females were compared with ALD males. The expression of PD-1/PDL1 on T and B cells correlated neither with liver disease severity scores nor complications of ALD (i.e. encephalopathy, ascites, esophageal varices, patients' survival). Significant correlations were found between percentages of CD19+ PD-1+; CD 19+ PDL-1+ and CD4+ PDL-1+ cells and white blood cell and neutrophil counts. CD19+ PDL-1+ showed positive correlation with C-reactive protein and neutrophil-to-lymphocyte ratio.

Conclusions: Impaired PD-1 and PD-L1 expression on peripheral lymphocytes may contribute to etanol- induced dysregulation of the inflammatory response in the course of ALD. Significant gender-related differences in PD-1 expression on B cells and PD-L1 expression on all T and B subsets may account for different susceptibility to ethanol-related liver damage in males and females.

Effect of resection of primary and metastatic liver tumors on energy demand, body composition and results of selected biochemical tests

prezentacja ustna

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Introduction: A partial resection is a recognized and effective way of treating tumors within the liver. Analysis of changes in the body composition of pa-

tients measured by BIA and biochemical indicators of health caused by surgery may be helpful in identifying early, potentially adverse changes. A special parameter obtained due to bioelectrical impedance is the phase angle, which is a physical value. Reduced is associated with lower cell mass and worse prognosis.

Aim: To evaluate changes in biochemical markers, body composition and energy demand of patients undergoing partial resection of the liver or thermoablation of focal lesions.

Material and methods: The study was conducted on a group of 53 patients who underwent resection of liver lesions or thermoablation of focal lesions. The most numerous group were patients admitted to the treatment of metastasis of colorectal cancer. The analysis covered data on the body's water bodies, the resting value of metabolism and selected laboratory tests results.

Results: A comparison of data obtained from patients in the period before and after surgical intervention in the liver revealed statistically significant differences ($p < 0.05$) in both biochemical and body composition analyzes. The highest increase in the average concentration concerned GGT, ALT and AST. The differences amounted to 117.85 U/l, 97.85 U/l and 47.63 U/l, respectively. In addition, there was a significant increase in the following values: PLT, CRP, ALP, WBC, INR as well as an increase in extracellular water and total body water. Significantly decreased: total cholesterol, glucose, urea, HGB, APTT, albumin, TP, RBC, phosphate, creatinine, loss of intracellular water, muscle mass, cell mass as well as adipose tissue were observed. Significantly, the phase angle value in these patients decreased by 0.71° on average. The energy demand in patients in general was not statistically significant, however, for the group of men there was a statistically significant reduction in demand by an average of 95 kcal/day.

Conclusions: Patients qualified for surgical procedures have complete organ efficiency. In patients undergoing partial hepatic resections, adverse changes in biochemical parameters occur due to surgical intervention, which are caused by the surgical technique applied as well as the body composition of the respondents resulting partly from perioperative management, these changes are reversible. The above changes have a bearing on the metabolism, measured by indirect calorimetry

Non-invasive assessment of liver fibrosis in cirrhotic patients: prospective analysis on correlation between Fibroscan, Shear Wave Elastograpy and serum indexes of fibrosis

prezentacja ustna

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Introduction: Transient elastography is a non-invasive tool for the assessment of liver stiffness which is related to tissue fibrosis. Both supersonic shear elastography (ShearWave elastography, SWE, Supersonic Imagine Aixplorer™, France) and Fibroscan (FibroScan®, Echosens, Paris, France) have been recently recommended by EASL as the first line modalities for measurement of liver fibrosis. Both methods have their weaknesses and strengths related to technical issues but are considered comparable in their reliability in patients with chronic liver diseases.

Aim: The aim of this study was to compare both methods in a well-defined group of patients with liver cirrhosis. This analysis was extended with an assessment of serum indexes of fibrosis.

Material and methods: A total of 50 patients (M 28/F 22; mean age: 47 ±14) with liver cirrhosis of different etiologies underwent prospective transient elastography (TE) using FibroScan and Shear Wave Elastography (SWE) SuperSonic Imagine Aixplorer. Examinations were performed by two experienced physician who were blinded to the readings obtained by each other. Serum

fibrosis biomarkers including FIB-4, AST-to-platelet ration index (APRI), AST-to-ALT ratio (AAR) and FibroQ were also analyzed. The correlation between methods and fibrosis indices was tested using the non-parametric Spearman's correlation coefficient, *p*-value < 0.05 was considered statistically significant.

Results: All patients fulfilled elastographic criteria for liver cirrhosis. SWE strongly correlated with TE ($r = 0.62$; $p < 0.0001$), the correlation was the strongest in patients with Child-Pugh score (CPS) A ($r = 0.69$) and disappeared in patients with CPS C ($r = 0.11$). SWE showed overall lower parameters of liver fibrosis than TE (median: 36 ±21 vs. 43 ±29). Both methods correlated strongly with MELD ($r = 0.42/0.49$; $p < 0.0001$) but not with serum indexes of fibrosis such as APRI, FIB-4, AAR or FibroQ.

Conclusions: In agreement with most recent Baveno VI Consensus transient elastography and SWE is a reliable tool to confirm the diagnosis of liver cirrhosis. Both methods correlate strongly with each other but show different parameters of liver stiffness, which in the case of liver cirrhosis does not change the diagnosis but should be considered in the lower stages of liver fibrosis. Furthermore, both methods strongly correlate with the severity of liver insuffciency (MELD) but not with serum indexes of fibrosis.

Unresolved issue? The impact of immunosuppressive regimen on the risk of recurrent primary sclerosing cholangitis after liver transplantation – a single-center experience

prezentacja ustna

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Introduction: Primary sclerosing cholangitis (PSC) is a chronic inflammatory cholangiopathy of autoimmunological origin, that results in fibrotic strictures and dilations of the intra- and extrahepatic bile ducts. PSC is strongly associated with inflammatory bowel disease (IBD), affecting mainly young males. Liver transplantation (LT) represents the ultimate treatment option, but the recurrence of PSC (rPSC) in graft is as high as 20%. Active IBD at LT seems to be a risk factor of rPSC. However, in Nordic Multicentre Study, both tacrolimus (TAC) and mycophenolate mofetil (MMF) immunosuppressive agents were found to be associated with rPSC with a hazard ratio of 1.81 and 1.43, respectively.

Aim: To evaluate the rPSC frequency in a single-center experience in PSC-liver transplanted patients, treated with immunosuppressive regimen based on TAC + MMF.

Material and methods: Eighty PSC-liver graft recipients (M 55, F 25, median age of 37 years, range: 21–67 years) were included into the analysis. In 85% IBD was present. 100% of patients were treated with TAC + MMF. rPSC was diagnosed in respect to EASL guideline.

Results: rPSC was recognized in ten patients (12%), which is lower than in NCS cohort. Three patients were retransplanted due to rPSC. In all of rPSC individuals IBD was present, in remission.

Conclusions: The results of the analysis do not confirm the increase risk of rPSC in liver graft recipients treated with modern immunosuppressive scheme. Further studies are required to describe the risk factors of rPSC.

Health-related quality of life after liver transplantation – success or fail?

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Introduction: Liver transplantation (LT) is universally accepted method of treatment of patients with liver failure and hepatocellular carcinoma. LT is known to be beneficial for health-related quality of life (HRQoL) with relief of symptoms, emotional benefit and improved functional capacity compared to preoperatively or wait-

listed patients. Thus, evaluation of HRQoL should be an integral part of holistic long-term care of liver graft recipients.

Aim: To determine HRQoL in patients after LT and compare to age- and gender-matched group of healthy individuals.

Material and methods: A total of 51 patients after LT (F 9, M 42) and 36 age- and gender-matched healthy individuals (F 12, M 24) were prospectively enrolled into the study. The indications to LT were: ALD (36%), viral hepatitis (27%) and HCC (37%) respectively. In respect to time after LT patients were divided 3 groups: group A (n = 13): 6–12 months; group B (n = 17): 13–36 months; and group C (n = 20): more than 36 months after LT. SF-36 questionnaire is widely used and validated generic HRQoL tool. It consisted of 36 items, divided into 8 domains, comprising the areas of both physical and mental health. Each domain is scored between 0 to 100 points, with higher scores indicating better HRQoL. There are also two summary scores: Physical Component Score (PCS) and Mental Component Score (MCS).

Results: Patients after LT had significantly impaired HRQoL in all domains of SF-36 measure when compared to healthy individuals (all $p < 0.01$), with the lowest scoring of Physical Functioning (72.8 ±23.1 vs. 88.5 ±16.8; $p < 0.001$). Timing from LT reveald a trend with better physical domains (PCS) of HRQoL (group A: 64.30 ±23.0 vs. group B: 63.8 ±25.7 vs. group C: 70.9 ±21.4, $p > 0.05$), but no difference in mental domains (MCS) were concluded. Female-graft recipients presented deteriorated HRQoL in most SF-36 domains when compared to males after LT and to healthy female individuals with the lowest score in Vitality domain (56.4 ±21.5 vs. 66.2 ±18.2; $p < 0.05$).

Conclusions: The study showed that patients after LT due to ALD and viral hepatitis have significantly worse physical aspects of HRQoL when compared to healthy individuals. However, their physical aspects of HRQOL improved in longer time after the procedure. Of note, HRQoL after LT remains significantly worse in female patients as compared to male recipients and healthy individuals. These results indicate the need for modifications of current therapeutic strategies aimed at HRQoL improvement.

Trust or test? Comparison of self-assessment and objective exercise stress test results in young PSC patients before and after liver transplantation

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Introduction: Primary sclerosing cholangitis (PSC) is an uncommon, chronic inflammatory cholangiopathy of autoimmune pathogenesis, that results in fibrotic strictures and dilations of the intra- and extrahepatic bile ducts. Once patients have progressed to end-stage liver disease, the only treatment option is liver transplantation (LT). Health-related quality of life (HRQoL) is impaired in PSC patients, especially females, when compared to healthy individuals. However, data regarding HRQoL after LT in PSC subjects are scare. On the other hand the impact of physical activity on liver graft recipients well-being is documented.

Aim: To compare individuals physical activity in self-assessment and objective exercise test before and after LT in PSC patients.

Material and methods: The study group consists of 36 PSC patients (F = 14, M = 22 in mean age 37.0 ±14.4 years). A validated international physical activity questionnaire (IPAQ) was used to test patients self-assessment of efforts, and results were expressed in MET units. The final data was presented as Total MET minutes/day a week (TOTAL MET).

Results: PSC patients at listing to LT presented a TOTAL MET of 563.4 \±382,6 in respect to IPAQ questionnaire evaluation and obtained 7.7 ±2.4 METs in exercise test. Scores not improved significantly after LT. The comparison of the results of IPAQ self-assessment physical activity before and after LT showed that 41% of patients noticed its improvement and 29%

maintained their physical activity. Another 29% of respondents rated their activity as less intensive after LT. A comparative analysis of the results of the objective exercise test before and after LT showed that 36% of PSC patients improved their results after surgery and 14% maintained their results. However, worse result of the objective exercise test after LT was obtained in 50% of subjects. Male PSC patients improved significantly the results of their exercise test after LT, while females patients results deteriorated.

Conclusions: The results of this study showed that even half of transplanted young PSC patients are less physically active after LT than before the procedure, with strong female predominance. This finding is opposite to verbally declared pro-heathy life-style. Thus, there is a need for modifications of current strategies aimed at improving physical activity in liver graft recipients.

Successful liver transplantation in patient with erythropoietic protoporphyria

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Introduction: Erythropoietic protoporphyria (EPP) is an inborn autosomal dominant error of the heme metabolism due to a deficiency of ferrochelatase in bone marrow and in the liver, leading to accumulation of protoporphyrin (PPIX) in the erythrocyte. The major clinical manifestation of EPP is photosensitivity, about 10% of patients develop cholestatic liver disease. In patients with severe cholestatic hepatic failure, liver transplantation (LT) is the treatment of choice. However, during the operation, damage of abdominal skin and organs may occur upon exposure to operating light and PPIX activation in peak wavelength of light of 405 nm; high level of protoporphyrin may also lead to severe motor neuropathy.

Case report: 60-year of age male patient with end-stage liver disease was transplanted with deceased donor organ with piggy-back technic. EPP was diagnosed secondary to liver disease, despite the long medical history of photosensitivity. To ameliorated the problem of abdominal skin and organ burn, surgery was performed in operating theatre in green light with filters on operating lamps blocking the emission of light with wavelength below 470 nm. To avoid risk of neuropathy exchange lood transfusion was performed in the initial phase of the LT. Immunosuppressive scheme with sirolimus induction and based on cyclosporine A (to elude neurotoxicity of tacrolimus) was then introduced with good clinical outcome. Histopathology confirmed the diagnosis of end-stage liver disease in the course of EPP. Patient remains stable six months after LT with reduced, but not totally eliminated, photosensitivity and with 8-fold decreased PPIX in blood due to proper liver function.

Conclusions: Liver transplantation in special condition during the surgery is safe and effective procedure in EPP patients with indication to LT. However, LT does not alter the excessive production of protoporphyrin by the bone marrow and recipients are at risk for recurrence of EPP. On the other hand, the sequential therapy with bone marrow transplantation is available option in recipients with stable liver graft function.

Afamin as a novel biomarker of alcoholic liver cirrhosis

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Introduction: Afamin belongs to the albumin family, which also includes albumin, α-fetoprotein, and vitamin D binding protein. Circulating afamin is primarily of hepatic origin. Chronic use of alcohol can lead to the development of alcoholic liver disease, chronic pancreatitis and many other ailments. The pathomechanism of cirrhosis has not been fully elucidated.

Aim: To examine the serum concentration of afamin in patients with alcoholic cirrhosis and to determine its relationship with cirrhosis stage.

Material and methods: The study included 99 patients with alcoholic cirrhosis from the region of Lublin (Eastern Poland). Liver cirrhosis was diagnosed based on clinical features, history of heavy alcohol consumption, laboratory tests and abdominal ultrasonography. The control group consisted of 20 healthy individuals without liver disease who did not abuse alcohol. The serum afamin concentration was determined using a human afamin ELISA Kit (BioVendor, Czech Republic) according to the manufacture's procedure.

Results: The concentration of afamin was found to be significantly higher in patients with compensated alcoholic liver cirrhosis (i.e. Pugh-Child (P-Ch) B (85.1 ±40.6 μg/ml) and P-Ch C (56.4 ±32.3 μg/ml), as compared to the control group (135.9 ±43.6 μg/ml; *p*-value < 0.01 and < 0.001, respectively). Moreover, a significant difference in afamin concentrations was observed between the P-Ch C and P-Ch A stage (124.8 ±72.4 μg/ml; *p*-value < 0.01). Multiple linear regression analysis, performed to assess the effects of various variables on afamin concentrations, demonstrated that the independent factors associated with serum afamin concentrations were advancement of cirrhosis according to the Pugh-Child score, Asp activity and urea concentrations.

Conclusions: Decreased serum concentrations of afamin can be explained by impaired liver function in cirrhosis and excessive intravascular damage due to intensified inflammatory and pro-oxidative processes which are characteristic of advanced liver cirrhosis. Afamin may prove a useful predictive marker of advancement of alcoholic liver cirrhosis.

Wilson's disease with coexisting autoimmune hepatitis: a case report

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Introduction: A 30- year old woman with an autoimmune hepatitis (AIH) and cirrhosis has been recognized in 2013 on the basis of liver biopsy. Positive antinuclear antibodies and hypergammaglobulinemia have been revealed during laboratory tests. In abdominal MRI enlarged liver of heterogeneous micro nodular structure with regenerative nodules was observed. The patient has been undergoing oral steroid therapy since 2013 to 2017. Hand tremors have been noticed. There has been marked the level of ceruloplasmin in serum, which has been decreased at simultaneously proper level of copper in urine during a 24-hour period. Genetic tests indicated the presence of ATP7B mutation. During ophthalmological examination Kayser Fleischer ring has been confirmed. Head MRI has been carried out, which described T2 hyperintensity of basal ganglia. Basic on conducted tests Wilson's disease (WD) has been diagnosed and penicillamine has been introduced into the treatment.

Aim: AIH is a progressive liver disease which mainly affects women. The diagnosis is based on autoimmune serology (characteristic autoantibodies detection, hypergammaglobulinemia), histological features on liver biopsy (interface hepatitis, hepatic rosette formation, emperipolesis) and a favorable response to immunosuppressive therapy. The disease can be asymptomatic, with unspecific symptoms or recognized as even fulminant hepatitis.

Material and methods: WD is an autosomal recessive condition caused by a mutation in the ATP7B gene. It is characterized by excessive copper deposition mainly in liver and brain. There is no completely reliable test for WD, but levels of ceruloplasmin and copper in the blood, as well as copper excreted in urine during a 24-hour period, are useful for the diagnosis. It is important to exclude the presence of Kayser-Fleischer ring in cornea. Liver biopsy for histology and histochemistry and copper quantification is recommended. The mainstay of therapy for WD is treatment with penicillamine and trientine.

Results: The coexistence of AIH and WD is rarely reported. Milkiewicz *et al.* described two such cases. Patients were initially diagnosed as AIH. The diagnosis of WD was made after a few years. Diagnosis has been extended because of an ineffective steroid therapy and persistent elevated liver function tests. Sometimes it can be too late and liver transplantation is necessary.

Conclusions: Summing up diagnosing of liver diseases is a very tedious and sophisticated procedure during which varied diagnosis is necessary.

Biomarkers of neutrophil activation and their relevance in the course of alcoholic liver disease

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Introduction: Neutrophils are the first line effectors of human innate immune system. Inflammatory dysregulation and neutrophil infiltration are hallmarks of alcoholic liver disease (ALD). Given their destructive potential, extracellularly released neutrophil enzymes should be carefully controlled to avoid damage to host tissues.

Aim: Assessment of the systemic profile of neutrophil-derived mediators i.e. neutrophil elastase (NE), myeloperoxidase (MPO), as well as α1-antitrypsin (A1AT) – a potent inhibitor of neutrophil proteases, with emphasis on their potential relevance in the course of ALD.

Material and methods: 62 patients with ALD (47 males, 15 females, aged 49.2 ±9.9) were prospectively recruited and assigned to subgroups based on their 1) gender, 2) severity of liver dysfunction (Child-Pugh, MELD scores, mDF), 3) presence of ALD complications, and followed for 30 days. 24 age- nad sex-matched healthy volunteers served as the control group. Selected plasma markers of neutrophil activation were quantified using immunoenzymatic ELISAs. Correlation coefficients between their blood concentrations and (i) indicators of systemic inflammation (the neutrophil-to-lymphocyte ratio, C-reactive protein, white blood cell and neutrophil counts), (ii) liver dysfunction severity scores (Child-Pugh, MELD, mDF), and (iii) ALD complications were calculated. The receiver operating curves (ROC) and their areas under the curve (AUCs) were checked in order to assess their accuracy in predicting the degree of liver failure and the developmant of ALD complications.

Results: Concentrations of MPO and NE were significantly increased in the blood of patients with ALD in comparison with controls, but the A1AT level was not different. ALD females presented with higher MPO levels in comparison with ALD males. There were no gender-related differences in NE levels in ALD group. NE, but not MPO, correlated with MELD and mDF scores. MPO, but not NE, correlated with standard markers of inflammation. ALD subgroups with mDF > 32, Child class C and hepatic encephalopathy presented with significantly higher NE, but not MPO levels.

Conclusions: Our results support the value of MPO and NE in the ALD assessment. MPO seems to be an inflammatory marker, while NE the disease severity indicator. The higher systemic NE/A1AT ratio in the course of ALD may facilitate the expansion of the inflammatory cascade. Gender-related differences in neutrophils' acti-

vation in ALD may impact the different susceptibility to toxic liver injury in males and females.

Hepatic venous pressure gradient-guided β-blocker therapy in primary prophylaxis in cirrhotic patients with esophageal varices

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Introduction: Non-selective β-blocker therapy (NSBB) reduces the risk of variceal bleeding in liver cirrhosis by lowering the hepatic venous pressure gradient (HVPG). The benefits of NSBB in decompensated cirrhosis and primary prevention of variceal bleeding is still debated.

Aim: To assess the use of NSBB in patients with cirrhosis and esophageal varices without previous episodes of bleeding and identify patients who will not respond to such therapy.

Material and methods: An evaluation of 4–6 months of NSBB therapy in cirrhotic patients with esophageal varices without previous bleeding (Child-Pugh A/B/C class: $n = 24/n = 11/n = 7$) with assessment of HVPG, clinical, laboratory, endoscopic and Doppler ultrasound parameters.

Results: The HVPG correlated with Child-Pugh and MELD, spleen length, albumin and ammonia levels, and declined even reduced in about 58% of patients with NSBB therapy. NSBB reduced heart rate, blood pressure, and spleen size. After therapy, there were no patients with Child-Pugh score C compared to 7 patients before therapy. Esophageal varices were either not detected or diminished in 7.9% and 18.4% of patients, respectively. Non-responders to propranolol, compared to responders, had a higher baseline Child-Pugh score and more frequently ascites. In addition, non-responders had a lower albumin levels and a higher pulsatility index and spleen width after therapy, which correlated with HVPG. Carvedilol reduced the HVPG in a subgroup of patients with insufficient response to propranolol.

Conclusions: NSBB therapy reduces the HVPG in more than half of cirrhotic patients with esophageal varices who never bled. Non-invasive parameters such as Child-Pugh score or albumin level, pulsatility index and spleen width can be useful in predicting which patients may not respond do propranolol or patients who did not responded to such therapy.

Interleukin 18 and transforming growth factor β1 serum levels correlate with liver dysfunction parameters in patients with liver cirrhosis

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Introduction: Liver cirrhosis and portal hypertension are associated with the activation of several pathways related to inflammation and fibrosis. The changes in serum levels of inflammatory and immunomodulatory cytokine may indicate disease progression and can be used to screen patients who develop complications.

Aim: To assess serum levels changes of interleukin 18 (IL-18) and transforming growth factor β1 (TGF-β1) in relation to liver dysfunction parameters.

Material and methods: We analyzed peripheral blood levels of IL-18 and TGF-β1 in 83 patients with liver cirrhosis and esophageal varices in relation to Child-Pugh and MELD scores, laboratory tests and Doppler

ultrasound parameters. Healthy individuals (n = 25) were used as controls.

Results: Compared to healthy controls, the median peripheral levels of IL-18 were significantly higher in patients with cirrhosis (242.10 (IQR: 194.35–283.37) vs. 506.25 (IQR: 364.50–609.95) pg/ml; $p < 0.0001$); while the median TGF-β1 levels were significantly lower (41.06 (IQR: 36.97–48.88) vs. 19.02 (IQR: 13.28–29.79); $p < 0.0001$). The IL-18 levels positively correlated with Child-Pugh score (R = 0.3942; p = 0.0003) and MELD score (R = 0.4500; p = 0.0003). In contrast, TGF-β1 levels correlated negatively with MELD score (R = –0.3145; p = 0.0057). There were statistically significant correlations between peripheral IL-18 and TGF-β1 levels and laboratory tests. The IL-18 levels correlated positively with bilirubin, INR, ALT and AST levels, and negatively with albumin levels and erythrocytes number. The TGF-β1 levels correlated positively with platelet count, leukocytes, erythrocytes, and negatively correlated with bilirubin levels and prothrombin time. Moreover, we found several significant correlations between peripheral IL-18 and TGF-β1 levels and Doppler ultrasound parameters such as: correlations of IL-18 levels with portal vein velocity, spleen vein velocity, and mesenteric superior vein velocity, and correlations of TGF-β1 levels with spleen vein diameter, spleen length and width, and liver right lobe diameter.

Conclusions: The observed changes in peripheral levels of IL-18 and TGF-β1 in patients with liver cirrhosis that correlate with severity of the disease confirm an important role of inflammation in the disease progression and indicate their potential use in the non-invasive assessment of portal hypertension.

Treatment of giant cell hepatitis with autoimmune hemolytic anemia in children: twelve years of experience

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Introduction: Giant cell hepatitis with autoimmune hemolytic anemia (GCH with AIHA) is a rare, aggressive disorder of young children with bad prognosis. The immunosuppressive treatment is used due to autoimmune origin of the disease but often with inadequate response. Rituximab, an anti-CD-20 monoclonal antibody was described as effective, well tolerated, and safe in patients with GCH with AIHA so far but cohorts of patients were small.

Aim: To assess the outcome of AIHA with GCH in children treated in our center.

Material and methods: We retrospectively analized the data of ten patients with GCH with AIHA treated in the Children's Memorial Health Institute in Warsaw in 2006–2018. The diagnosis was based on giant cell transformation of hepatocytes in liver biopsy associated with Coombs-positive hemolytic anemia.

Results: The median age at onset of the disease was 7.5 months (range: 2–15), median (min.–max.). The children were followed-up for 5 years (2 months–11.2 years). The use of corticosteroids was reported in all cases. One patient achieved remission during corticosteroids and azathioprine treatment. Cyclosporine in four out of ten children and mycophenolate mophetil in one case were not successful. Seven (70%) children were treated with rituximab – five out of them successfully (71%). The follow up in one case was short (2 months). The median time to remission was 5 months (4–20), median (min.–max.). Three patients died: one child with rituximab-associated lung injury and two children with an unknown cause. Five patients received four doses of rituximab once a week. Five doses were administered to one patient and a total of six doses in four cycles to another patient due to relapses of hemolytic anemia.

Conclusions: We stress the size of our cohort as the strong point of the study. Given the poor outcome and recurrence of the disease in transplanted liver and failure of conventional immunosuppressive treatment we conclude that rituximab should be considered early in AIHA with GCH even though the case of RALI.

Deviations in peripheral blood subpopulations are connected with the presence of pruritus in primary biliary cholangitis patients

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Introduction: The role of particular peripheral blood (PB) subpopulations in the course of primary biliary cholangitis (PBC) remains still uncertain. Bile acids, endogenous opioids, autotaxin and lysophosphatidic acid (a potent itch neuron activator) seem to have a key role in the pathogenesis of cholestatic pruritus in PBC patients. However, there is a growing body of evidence that PB subsets are of great importance in pathological appearance of this liver disease.

Aim: To assess the relationships between analyzed PB cell subsets and the presence of pruritus in patients with newly diagnosed PBC.

Material and methods: The frequencies of PB subpopulations were measured by flow cytometry in 34 previously untreated female patients with PBC. 19 participants from research group presented pruritus. The control group consisted of 20 healthy age- and sex-matched volunteers. The diagnosis of PBC was based on the commonly known criteria. The severity of pruritus was assessed according to Visual Analogue Scale (VAS) questionnaire and the mean result was 4.1/10 points. The degree of severity of PBC was evaluated by histologic stages of PBC. This parameter was described in all patients and they were divided into 4 groups, according to histologic stages of PBC (I – portal stage – 7 patients, II – periportal stage – 16 patients, III – septal stage – 9 patients and IV – cirrhotic stage – 2 patients). Before the initiation of treatment of PBC, lymphocyte subsets, values of PB cell count parameters and immunoglobulin serum levels were measured.

Results: PBC patients complaining of pruritus had significantly lower percentages of CD3+/CD16+CD56+ NKT-like cells ($p = 0.04$) and CD3+ T lymphocytes ($p = 0.03$) than PBC patients without pruritus. Additionally, PBC patients with itch presented significantly lower absolute counts of CD4+/CD3+ cells ($p = 0.01$) and CD3+CD25+ cells ($p = 0.03$) in comparison to PBC patients without itch. Percentages of CD3+/CD16+CD56+ NKT-like cells and absolute counts of CD3+CD25+ cells were significantly higher in PBC patients compared to controls ($p < 0.01$). There were no significant differences in percentages of CD3+ T lymphocytes and absolute counts of CD4+/CD3+ cells between research and control group.

Conclusions: Deviations in PB subsets might be involved in the pathogenesis of cholestatic pruritus in PBC patients and this issue should be undoubtedly clarified in further studies.

Serological indices of liver fibrosis in the course of alcoholic liver cirrhosis – a pilot study

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Introduction: Liver biopsy has been described as a gold standard in the assessment of the severity of liver fibrosis so far. However, due to its limitations, it is crucial to look for noninvasive laboratory parameters, which make it possible to monitor liver stiffness.

Aim: To determine the usefulness of selected serological indices in the assessment of liver fibrosis in the course of alcoholic liver cirrhosis (ALC).

Material and methods: We enrolled 55 participants in the survey and among them 22 patients with ALC in research group together with 33 persons in control group. The diagnosis of ALC was based on commonly known criteria. We measured concentration of direct indicators of liver fibrosis in serum of all participants: platelet-derived growth factor AB (PDGF-AB), transforming growth factor α (TGF-α), N-terminal propeptide of type III collagen (PIIINP), procollagen I carboxyterminal propeptide (PICP) and laminin. Several indirect parameters of liver fibrosis were obtained too: aspartate aminotransferase (AST) to alanine aminotransferase ratio (AAR), AST to platelet (PLT) ratio index (APRI), fibrosis-4 (FIB-4) score and red cell volume distribution width (RDW) to PLT ratio (RPR). To evaluate a clinical outcome of patients, we assessed Model for End-Stage Liver Disease (MELD) score and neutrophil to lymphocyte ratio (NLR). Finally, we also measured PLT indices: mean PLT volume (MPV), PLT distribution width (PDW) and plateletcrit (PCT). We looked for any correlations between assessed parameters in patients with ALC, too.

Results: Significantly lower concentration of PDGF-AB ($p < 0.01$) and higher concentrations of laminin ($p < 0.01$) and PICP ($p = 0.037$) were found in ALC patients. We observed significantly higher values of AAR, APRI, FIB-4, RPR, NLR, MPV ($p < 0.01$) and PDW ($p = 0.027$) in research group. PCT value was significantly lower and correlated negatively with APRI, FIB-4 and RPR ($p < 0.01$). APRI correlated positively with both FIB-4 and RPR ($p < 0.01$). Another positive correlation was observed between between NLR and AAR ($p < 0.01$). We noticed a negative correlation between PIIINP and TGF-α ($p = 0.038$).

Conclusions: Our survey indicates that noninvasive parameters embracing liver, PLT and red blood cells indices might be useful in the assessment of liver fibrosis in the course of ALC. Additionally, higher concentrations of laminin and PICP and lower values of PDGF-AB seem to accompany ALC.

Sekcja 4. Nieswoiste choroby zapalne jelit – część I

Doctors knowledge about fertility and pregnancy in females with inflammatory bowel disease

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Introduction: Female patients suffering from inflammatory bowel disease (IBD) usually have smaller families. They are less eager to plan offsprings for fear of the deteriorative effect of drugs or disease itself on fetal development. These patients are also afraid of passing this disorder to their children. Health care workers who deal with IBD patients shape their level of knowledge and thus may have an impact on the level of patients' anxiety associated with the influence of illness on fertility and pregnancy.

Aim: The aim of our study is to compare IBD-specific pregnancy-related knowledge of family doctors, obstetricians/gynecologists, surgeons, internists, trainees and students of the fifth and sixth year of medicine with gastroenterologists. For this purpose we used the validated Crohn's and Colitis Pregnancy Knowledge (CCPKnow) questionnaire which comprises 19 questions.

Material and methods: Doctors of different specializations and students in Lodz area were asked to complete the CCPKnow questionnaires that contained 19 closed questions concerning risk of IBD heredity, possibilities of congenital disorders, effect of medicines on pregnancy and also options of delivery.

Results: We have collected 72 correctly completed questionnaires. The study involved 8 family doctors, 5 gynecologists, 10 gastroenterologists, 5 surgeons, 18 internists, 6 trainees and 23 students. Internists, gynecologists and surgeons had significantly lower knowledge than gastroenterologists. The doctor's average score was 7 (43%) points out of 17 possible to get and the student's was 5 (29%). Only two people gave correct answers about biological treatment in pregnant women with IBD. Nobody answered the question about breast-

feeding well. 91% gave the correct answer about the risk of getting a child whose parents are ill. Only 18% of the respondents knew that a sick man with IBD should be discontinued should discontinue the medication 3 months before planned fertilization. Apart from gastroenterologists, the internists had the best result.

Conclusions: Our research shows that doctors taking care of IBD patients still have insufficient knowledge about pregnancy associated with IBD, including the use of drugs on IBD. These results confirm the need to disseminate knowledge among physicians about fertility and pregnancy in patients with IBD.

Fatigue and its severity depends on demographic and clinical factors in the Polish population of patients with inflammatory bowel disease – results of a cross-sectional study

prezentacja ustna

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Introduction: Fatigue is a frequently reported symptom experienced by patients with inflammatory bowel disease. A range of factors are linked with its presence and severity.

Aim: To analyse the relationship between demographic and clinical factors and the severity of fatigue in Polish IBD patients.

Material and methods: In this cross-sectional study, 1120 patients with IBD were recruited (267 from four tertiary referral hospitals' outpatient clinics and 853 via the IBD patients' association website) in Poland. Fatigue was measured using the Inflammatory Bowel Disease-Fatigue Scale. Demographic and clinical data (e.g. age, gender, IBD phenotype, duration of the disease, medical treatment, previous surgery, co-morbidity) were collected via a self-completed questionnaire. For patients recruited from referral centres disease-related and laboratory data were collected. Chi-square test and Fisher exact test were used to compare categorical variables. Nonparametric Mann-Whitney test was used to compare continuous variables between two groups of observations. Pearson correlation test was used for continuous variables comparisons. Linear regression with backward elimination approach were used for multivariate modeling to obtain optimal models.

Results: The study recruited 1120 patients, 576 (51.4%) with ulcerative colitis (UC) and 544 (48.6%) with Crohn's disease (CD). The percentage of women was 67.2% in UC and 64.2% in CD groups. The level of fatigue was similar in both diseases groups and there were no differences between the group of men and women. Higher level of fatigue was reported by patients responding anonymously ($p < 0.001$). Apart from disease activity being the main factor in fatigue severity, patients reported psychological problems (depression, anxiety, excessive stress – 17.9%) and demands of professional work (14.1%). 36.4% of patients declared that they could not cope with fatigue. In 63.3% of patients fatigue was periodic and 36.2% of patients reported constant fatigue. In patients from tertiary referral centers, a positive correlation was found between the level of experienced fatigue and disease activity assessed via CDAI in CD and the SCCAI in UC, and laboratory data – C-reactive protein and faecal calprotectin level.

Conclusions: Fatigue in Polish IBD patients is frequently reported. Fatigue pattern is of a constant nature and patients do not know how to manage it. It is important to assess fatigue sistematically. Further studies are necessary to develop effective models of fatigue management.

Clinical characteristic of Crohn's disease (CD) patients in Polish population

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Introduction: There is a common impression that the incidence and prevalence of Crohn's disease (CD) in the Polish population have been rising in recent years. The protracted and relapsing clinical course causes important public health problems affecting education, social life and quality of life. In 2005, a nationwide Crohn's disease registry in Poland was established to collect demographic and clinical data of patients diagnosed with CD.

Aim: To characterise demographic and clinical features of Polish population with CD, based on national registry data.

Material and methods: In a collaborative, prospective registry of a consecutive CD patients conducted in 95 gastroenterology centers across the country 5942 adult patients have been enrolled. Patient's phenotype according to: Montreal classification, demographics, smoking, family history, comorbidity, extraintestinal manifestation, medical treatment and surgical interventions have been evaluated.

Results: The age of diagnosis of CD in polish population was under 40 in more than 77% of patients and only in 22% over 40. Although there was no gender difference in the overall population (males/females ratio 1.025), males predominated among young patients ($p < 0.001$). Males more often sustain penetrating disease and localization in ileum and upper gastrointestinal tract. Females more often suffer from extraintestinal manifestations. The location of the disease was as follows: ileal: 13.4%, colonic: 30.3%, ileocolonic: 56%, upper gastrointestinal tract: 9.9%. The disease behaviour presented: non stricturing, non penetrating: 58.6%, stricturing: 28%, penetrating: 19.8%, perianal disease: 26.4%. The disease was more common in urban areas and in patients with higher education. Smoking was associated with a higher risk of strictures ($p < 0.001$), abscesses ($p = 0.013$) and overall need for surgery (41.8% vs. 30.5%). However smokers less likely suffer from extraintestinal manifestations and localization in upper gastrointestinal tract. 31.6% of the patients had at least one surgery.

Conclusions: This study provides comprehensive information on demographic and clinical aspects of CD in Poland. The prevalence of IBD in this cohort falls in the intermediate range of that reported for white populations in Europe and North America. Smoking, male gender, ileal and ileocolonic location are the biggest risk factors for the complications, which will require surgery. Future studies are needed to examine more local risk factors and epidemiologic time trends.

Crohn disease treatment in everyday practice

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Introduction: There is a common impression that the incidence and prevalence of Crohn's disease (CD) in the Polish population have been rising in recent years. In 2005, a nationwide Crohn's disease registry in Poland was established to collect demographic and clinical data of patients diagnosed with CD.

Aim: The purpose of this work was to describe the treatment of CD in everyday practice in Polish population. Drug use, efficacy and tolerance were assessed in terms of demographic data and disease status.

Material and methods: In a collaborative, prospective registry of a consecutive CD patients conducted in 95 gastroenterology centers across the country 6030 patients have been enrolled. Patient's phenotype according to: Montreal classification, demographics, smoking, extraintestinal manifestation, medical treatment have been evaluated. The impact of demographic factors on the use of drugs from different groups, their efficacy and tolerance was assessed. The efficacy of the treatment was assessed subjectively by the clinician based on clinical response in a 4-step scale. Similarly, treatment tolerance was assessed in 2-step scale.

Results: No gender effects were observed on the use or efficacy of individual drug classes, although greater tolerability of prednisone and azathioprine was observed in men (both $p < 0.05$). Smoking did not affect the effectiveness or tolerability of the medicinal products. In the case of alcohol use, on prednisone was determined: it was associated with greater efficacy ($p < 0.05$) and better tolerance ($p < 0.05$). Referring to the Montreal classification, better efficacy was achieved with mesalazine, prednisone and azathioprine in group A1, and to a lesser degree A3 compared with A2 ($p < 0.05$). Regarding the efficacy of treatment in ralation to localization, the efficacy of treatment with immunosuppressive agents (azathioprine and methotrexate) in L3 compared with L1 and L2 was significantly lower despite the increased use ($p < 0.05$). As predicted, the use of immunosuppressive and anti-TNF drugs was higher in complicated disease behavior (B2 and B3) than in B1, although the effect on efficacy was only demonstrated in mesalazine and prednisone.

Conclusions: This study provides comprehensive information on everyday treatment of CD in Poland. Most observations coincide with the results of clinical trials. Some of the expected relationships were not found. There were also new, interesting dependencies that required further studies (eg. alcohol effects on steroid efficacy and tolerance).

Novel peptide inhibitor of dipeptidyl peptidase IV (Tyr-Pro-D-Ala-NH2) alleviates intestinal inflammation in mouse models of colitis via upregulation of GLP-2

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Introduction: Protease inhibition has become a new possible approach in the inflammatory bowel disease (IBD) therapy. It takes for the purpose restoration of the immune balance by limiting the activation of immune cells and induction of endogenous protective mechanisms. A serine exopeptidase, dipeptidyl peptidase IV (DPP IV) is responsible for inactivation of incretin hormone, glucagon-like peptide 2 (GLP-2), a potent stimulator of intestinal epithelium regeneration and growth.

Aim: To design a series of novel peptide DPP IV inhibitors and test their anti-inflammatory activity in the mouse models of colitis.

Material and methods: Inhibitory activity of all peptides and their affinity to opioid receptors was examined using fluorometric screening assay and the radioligand displacement assay, respectively. Kinetic parameters of the reaction were measured using isothermal calorimeter. Based on these studies, one compound, namely DI-1 was selected and tested in mouse models of experimental colitis induced by TNBS and DSS. Macroscopic damage score was determined by an established semiquantitative scoring systems. Moreover, body weight, ulcer score, colon length and thickness, as well as myeloperoxidase (MPO) activity were measured. Expression of GLP-2 receptor, GLP-2 and DPPIV was measured by western blot or ELISA. In silico docking simulations have been conducted to study sterical interactions between DI-1 and DPP IV molecule.

Results: DI-1 blocked DPP IV activity *in vitro* (IC_{50} = 0.76 ±0.04 nM), lowered Vmax and increased KM value of the reaction. The intracolonic (*i.c.*) administration of DI-1 (0.3, 1 and 3 mg/kg, twice daily) attenuated acute, semichronic and relapsing TNBS- as well as DSS-induced colitis in mice as indicated by significantly reduced micro- and macroscopic parameters as well as MPO activity. Its anti-inflammatory action is associated with the increase of colonic GLP-2 but not GLP-2 receptor or DPP IV expression. Docking simulations revealed that DI-1 may directly interfere with the catalytic triad of DPP IV (Ser630, His740 and Asp708).

Conclusions: Peptide DPP IV inhibitors, such as DI-1, have the potential to become valuable anti-inflammatory therapeutic for IBD treatment.

Efficacy, safety and predictors of successful anti-TNF-α therapy in patients with Crohn's disease

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Introduction: Anti-TNF-α therapy of Crohn's disease (CD) represents the big progress in inflammatory bowel disease treatment, however its effectiveness is not satisfactory yet. Lower than expected efficacy and high cost of treatment entail the need to find predictors of therapeutic success and personalized approach.

Aim: To estimate the effectiveness of anti-TNF-α agents, side effects incidence and to search for treatment efficacy predictive factors.

Material and methods: This retrospective study included 40 patients (age: 30 ±5.5, 55% of men) diagnosed with CD and treated with infliximab (IFX) or adalimumab (ADA) (original preparations) in 2008–2017. The therapy lasted on average 343 ±21.75 days. Information about remaining treatment and sociodemographic variables were also collected.

Results: After treatment 27 (67.50%) patients achieved a semi-annual remission and only 14 (35%) yearly remission. Four (10%) patients experienced side effects such as anaphylactic shock, pneumonia, shingles or upper respiratory tract infections. No difference in the semi-annual or annual remission frequency depending on the drug used has been observed (semi-annual: IFX: n = 15, 60% vs. n = 25, 72% for ADA, p = 0.433, annual: 33.33% vs. 36%, p = 0.864). Patients with the increasing body mass during therapy were more likely to achieve semi-annual remission than others (n = 17, 80.95% vs. n = 7, 43.75%, p = 0.026). In patients who

underwent surgery before the treatment, the frequency of six month remission was significantly lower compared to the group with no prior the surgery (n = 22, 78.7% vs. n = 5, 41.67%, p = 0.022). Patients, who received treatment at up to 7 years from CD diagnosis, more often achieved an annual remission than patients with a longer duration of the disease (n = 20, 76.92% vs. n = 6, 46.15%; p = 0.049).

Conclusions: Anti-TNF-α treatment of CD is relatively safe. Low effectiveness of therapy is most likely associated with too short period of treatment time, which was determined by the insurer's regulations. Body mass increase, lack of previous surgery and early qualification for the biological therapy can be the predictors of successful outcome. Prospective study should be performed to validate achieved results.

Low level of knowledge of pregnancy-related issues in patients with inflammatory bowel disease in Polish population

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Introduction: IBD are chronic diseases, significantly increase the risk of surgery, colorectal cancer and often impact young people, of reproductive age, what may influence their personal life choices regarding family planning and having children.

Aim: To assess the knowledge of female patients with IBD regarding pregnancy issues in respect of the disease.

Material and methods: The examinations were based on validated test CCPKnow. The study included 120 women at the age of 18 to 74, including 86 women at the age up to 45 years old, 59 women with CD and 61 women with UC.

Results: The average disease duration of each patient was estimated to 8 years, in case of women of reproductive age (up to 45 years old) to 6.6 years. Majority of the patients claimed to live in a long-time relationship. In the group of patients up to 45 years old, 63% women did not have any children. All the children born after disease diagnosis were healthy. No congenital abnormality was found. 31% of patients of reproductive age declared that they did not plan to have (more) children in the future, more than half underlined that the decision was made with regard to disease. The average amount of points gathered in CCPKnow test was estimated to 6.9 of 17 possible. Through this research we can state that 40–50% female patients assessed by means of CCPKnow test have low level of knowledge regarding pregnancy and fertility, and only 8–10% display good level of knowledge. Female patients at the age of over 45 gained less points in comparison to younger women (4.85 vs. 7.7; p =0.0012). Significantly higher level of knowledge was stated among women, who gave birth during the disease (p = 0.0003), also with higher education and medical education (p = 0.0157). It was noticed that, patients with IBD have less children than the general population, what seems to be their conscious choice. The patients in the productive age, who declare that they do not want to have (more) children in the future and the ones that chose consciously to be childless, have significantly lower level of knowledge assessed by means of CCPKnow test (p = 0.0131).

Conclusions: The female patients with IBD have less children in comparison to general population. Majority of the patients has low level of knowledge regarding pregnancy and fertility, especially it refers to women over age of 45. The lowest level of knowledge was stated among the patients with IBD regarding treatment. Education of the patients may have a positive influence on their life choices.

Increased levels of anxiety and depression in patients with inflammatory bowel disease are not correlated with markers of systemic or mucosal inflammation

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Introduction: Psychological disturbances in the course of inflammatory bowel disease (IBD) may have a significant impact on quality of life in IBD patients.

Aim: To measure the prevalence of anxiety and depression in IBD patients and to evaluate the association between psychological disturbances and markers of systemic and mucosal inflammation: serum C-reactive protein (CRP) and fecal calprotectin (CAL).

Material and methods: The study was conducted in 58 IBD patients: 30 with ulcerative colitis (UC) and 28 with Crohn's disease (CD). There were 15 UC patients in remission, 15 with active UC, 12 CD patients in remission, and 16 with active CD. Symptoms of anxiety and depression were evaluated with the Hospital Anxiety and Depression Scale (HADS). The disease activity was assessed based on serum CRP level and fecal CAL level measured by ELISA test.

Results: In non-active and active IBD median CRP levels amounted to 2.2 vs. 33.5 mg/l ($p < 0.001$) and median CAL 99.6 vs. 1262.2 µg/g ($p < 0.001$), respectively. Abnormal scores for anxiety were observed in 20% of patients with UC and 64% with CD, while abnormal scores for depression were reported in 13% of patients with UC and 32% with CD. Mean HADS-Anxiety scores amounted to: 7.1 ±4.2 in patients with non-active UC, 5.8 ±2.5 with active UC, 8.2 ±4.6 with non-active CD, and 9.6 ±3.6 with active CD, while mean HADS-Depression scores amounted to: 4.0 ±4.4 in patients with non-active UC, 3.9 ±2.2 with active UC, 5.4 ±5.0 with non-active CD, and 6.9 ±4.4 with active CD. Patients with active CD in comparison to patients with active UC had a significantly higher score for anxiety ($p < 0.005$), depression ($p < 0.05$) and serum CRP level ($p < 0.01$). Fecal CAL was higher in active UC than in active CD, but the difference was not statistically significant ($p = 0.65$). No differences were found regarding CRP and CAL levels between UC and CD patients in remission. No correlation was observed between HADS scores and CRP or CAL levels in UC and CD patients, neither in active nor non-active disease.

Conclusions: IBD patients are characterized by elevated level of psychological disturbances, which can be detected by the HADS. The highest anxiety and depression scores are reported by patients with active CD. No association between psychological disturbances and markers of systemic or mucosal inflammation was found.

Efficacy of biological treatment in inflammatory bowel disease – a single-centre experience

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Introduction: The utility of serological biomarkers in the course of biological treatment (BT) in patients with inflammatory bowel disease (IBD) is still in the centre of interest.

Aim: To assess the efficacy of BT in patients with Crohn's disease (CD) and ulcerative colitis (UC) and to find out if there is any correlation between selected inflammatory markers and endoscopic picture in the course of BT.

Material and methods: 74 patients were enrolled in the study, 25 with CD and 49 with UC. The diagnosis was based on commonly known criteria. 15 patients with CD were treated with infliximab (IFX) and 10 patients with adalimumab (standard treatment regimen; 1 year of therapy). Patients with UC were administered IFX (standard induction therapy). Laboratory tests (C-reactive protein (CRP) and platelet (PLT) count) and colonoscopy were performed in all patients during BT.

Results: The study revealed statistically significant ($p < 0.01$) decrease in CRP level and PLT count together with improvement of endoscopic picture (SES-CD, MAYO) in all patients. Regardless of used tumor necrosis factor α antagonist, there were no statistically significant differences in results of CD group. BT lowered mean CRP level (from 39.52 to 10.11 mg/l) and mean PLT count (from 432 to 298 × 10^9/l) in CD group. A positive correlation between CRP level and PLT count in CD patients during both qualification ($p < 0.01$) and follow-up after finished BT ($p = 0.035$) was observed. The correlation between PLT count and SES-CD score prior to the first dose was noticed too ($p < 0.05$). Mean final SES-CD score after finished annual therapy was 5.48 points; its value prior to BT was 14.32 points ($p < 0.01$). We also found statistically significant decrease in mean CRP level (from 35.75 to 7.61 mg/l) and mean PLT count (from 401 to 314 × 10^9/l) among UC patients. CRP level and MAYO score correlated positively with each other in UC group before the first dose of BT and in follow-up after finished induction therapy ($p < 0.01$). There also was a positive correlation between MAYO score and MAYO endoscopic subscore during both qualification ($p = 0.01$) and follow-up ($p < 0.01$). Mean final MAYO and MAYO endoscopic subscores prior to BT were 9.78 and 2.8 points and after finished induction regimen they lowered to 2.76 and 1.84 points, respectively ($p < 0.01$).

Conclusions: Clinical and endoscopic remission of IBD was not achieved, although BT lowered level of CRP and PLT count and improved endoscopic picture in observed IBD patients.

Simple Enterographic Activity Score for Crohn's disease (SEAS-CD) closely correlates with Magnetic Resonance Index of Activity (MaRIA) in patients treated with anti-TNF antibodies

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Introduction: Quantifying of small bowel Crohn's disease (CD) activity is essential especially for a reliable assessment of disease course during anti-TNF treatment. Magnetic Resonance Index of Activity (MaRIA) is a validated score for MR enterography, however due to its complexity it is hard to use it in everyday practice. Simple Enterographic Activity Score for Crohn's disease (SEAD-CD) is less time-consuming and easy to use.

Aim: To compare SEAS-CD and MaRIA in assessing small bowel CD activity, especially in patients treated with anti-TNF antibodies.

Material and methods: MR enterography was performed in 36 CD patients with isolated inflammatory lesions in the small bowel. All imaging studies were performed with the same protocol on 1.5 T scanner (Magnetom Avanto, Siemens) with 6-element Body Matrix coil before and after induction doses of anti-TNF treatment. For clinical and laboratory assessment CD Activity Index (CDAI), C-reactive protein (CRP), erythrocyte sedimentation rate (ESR) and white blood cells (WBC) were taken into account. SEAS-CD and MaRIA scores were compared with each other and with clinical and laboratory parameters.

Results: After comparing MaRIA and SEAS-CD with CDAI, CRP, ESR and WBC, separately for patients before and during treatment, there was strong and statistically significant correlation for all except of WBC. There was also a strong correlation between MaRIA and SEAS-CD ($p < 0.0001$) both before and after the therapy.

Conclusions: SEAS-CD is a useful tool for the assessment of CD activity when compared to a validated score (MaRIA). Thus, it can be reliably used especially in patients with dynamic changes of small bowel CD course during anti-TNF therapy. Since MR enterography is the method of choice in the assessment of CD severity in small bowel, its quantification by SEAS-CD scale can be used in everyday clinical practice.

The assessment of psychological and somatic condition in patients with inflammatory bowel disease

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Introduction: Inflammatory bowel disease (IBD) patients are not routinely screened for depression and anxiety despite increased prevalence of these conditions in IBD patients. Both depression and anxiety have negative impact on quality of life.

Aim: Therefore, the aim of the study was to assess depression and anxiety degree and to establish their relation to somatic symptoms, acceptance of disease and satisfaction with life in patients with IBD.

Material and methods: 13 IBD patients (11 M, 2 F) were enrolled to the study. Each participant completed the questionnaire which included somatic symptoms, medical and family history, drugs. Next, they were inter-

viewed by psychologist and asked to complete the Hospital Anxiety and Depression Scale (HADS), Acceptance of Illness Scale (AIS) and Satisfaction with Life Scale (SWLS).

Results: The rates of depression and anxiety in IBD patients were found to be 30% and 46% respectively. Higher results in depression and anxiety scales were associated with worse satisfaction with life and lower acceptance of illness. Patients, who reported abdominal pain, aphthous mouth ulcers or fatigue were found to have statistically significant higher level of depression or anxiety ($p < 0.05$) than patients without these symptoms. Patients reporting other symptoms (chosen from the list of 31 symptoms) did not have any significant changes in the depression and anxiety scales.

Conclusions: The IBD patients have increased prevalence of depression and anxiety symptoms in comparison to general population. These symptoms were related to specific somatic signs and they have negative impact on acceptance of illness and satisfaction with life.

Platelet indices in the course of infliximab induction regimen in ulcerative colitis patients – experience of a single centre – a pilot study

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Introduction: Platelet (PLT) abnormalities are known to participate in the pathological appearance of inflammatory bowel disease (IBD). Chronic inflammatory process in patients with IBD is connected with elevated PLT count and changes in PLT activation.

Aim: The aim of the study was to assess the correlation between PLT indices: MPV (mean platelet volume), PCT (plateletcrit), PDW (platelet distribution width), C-reactive protein (CRP) and endoscopic picture in the course of infliximab (IFX) induction regimen in ulcerative colitis (UC) patients.

Material and methods: 46 patients with UC, 32 men and 16 women, were enrolled to the study. They were administered IFX (standard induction therapy). Laboratory tests (CRP and PLT indices) and colonoscopy were performed in all patients during induction regimen – at 0, 2, and 6 weeks and in follow-up 6 weeks after finished induction therapy.

Results: The study revealed statistically significant decrease in mean CRP level (from 32.35 to 7.05 mg/l) and mean PLT count (from 398 to 315 × 10^9/l) together with improvement of endoscopic picture (MAYO score) in all patients ($p < 0.01$). Mean MAYO score prior to BT and after finished induction therapy were 9.78 and 2.76 points, respectively; mean MAYO endoscopic subscore decreased from 2.8 to 1.84 points ($p < 0.01$). Mean PCT values were too high prior to BT (0.46%) and normalized after induction therapy (0.22%) ($p < 0.01$). On the other hand, mean MPV measurements were under normal range during qualification to BT (6.8 fl) and obtained adequate values after BT (8.08 fl) ($p = 0.01$). Subsequently, CRP and PCT levels correlated positively with each other before the introduction of BT ($p = 0.02$). Negative correlations between PDW level and PLT count and positive correlations between PCT level and PLT count were noticed before IFX induction regimen and in follow-up after finished therapy, too ($p < 0.01$).

Conclusions: Our data suggest that PLT indices might be useful biomarkers for determining active UC and for assessing the efficacy of BT. However, further studies are required to establish a correlation between platelet functions and BT in IBD patients.

The utility of fecal lactoferrin in discriminating active from non-active Crohn's disease in comparison to endoscopic and MR enterographic assessment

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Introduction: Diagnosis and monitoring of Crohn's disease (CD) is difficult and time-consuming. In recent years, diagnostic usefulness of fecal calprotectin (FC) has been proven. However, data on the utility of other fecal markers are scarce.

Aim: The evaluation of fecal lactoferrin (FL) usefulness in the assessment of CD activity.

Material and methods: The group consisted of 101 CD patients (median age: 30 years, IQR: 24–37). FL and FC were measured in a single stool sample by using immunoenzymatic methods. The clinical activity of the disease was evaluated by using the Crohn's Disease Activity Index (CDAI). The biochemical activity was measured by assessing complete blood count, C-reactive protein (CRP), erythrocyte sedimentation rate (ESR) and fibrinogen. Depending on the location of the disease, either a colonoscopy or MR enterography was performed or both in order to evaluate the disease activity by using appropriate endoscopic and enterographic scores.

Results: Median FL concentration was 84.14 (IQR: 36.4–302.9) µg/ml and it correlated with CRP (p = 0.0000001, r = 0.5), CDAI (p = 0.002, r = 0.3), colonic Simple Endoscopic Score for Crohn's Disease (SES-CD) (p = 0.000004, r = 0.5) and Global CD Activity Score (GCDAS) (p = 0.0001, r = 0.308). A positive correlation between FC and FL (p = 0.0001, r = 0.67) was also shown. Assuming endoscopic remission in the colon with colonic SES-CD ≤ 3 points, a ROC curve showed that FL concentration of 145.82 µg/ml had 84.6% sensitivity and 60.5% specificity in discriminating CD patients with endoscopically active and inactive disease (AUC = 0.676, 95% CI: 0.531–0.8, p = 0.0347). The positive predictive value (PPV) for this concentration was 42% and negative predictive value (NPV) – 92%. Similar analysis was performed with GCDAS. Assuming remission CD in particular localization with following GCDAS values: GCDAS ≤ 6 points for patients with ileal localization of CD, GCDAS ≤ 3 points for colonic localization of CD and GCDAS ≤ 9 points for localization of CD both in small and large intestine, a ROC curve showed that FL in concentration of 187.75 µg/ml had 88.89% sensitivity and 41.38% specificity in discriminating between active and inactive CD (AUC = 0.671, 95% CI: 0.554–0.775, p = 0.0285). The PPV for this concentration was 32% and NPV – 92%.

Conclusions: FL is a sensitive marker of CD activity. Thus, it can be helpful in diagnostics and monitoring of CD.

UC-like Crohn's disease – assessment of the clinical course

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Introduction: Crohn's disease (CD) is a inflammatory bowel disease, which may apply to any part of the digestive tract. The most common location is ileocecal area. Lately there has been some update in literature considering new variety of Crohn's disease with form restricted to large intestine. Thus it might be related to a different clinical course.

Aim: Clinical data analysis has been performed. Indicators such as demographic input, an age of the diagnosis, a disease course and localization of inflammatory lesions (according to the Montreal Classification: L1 – ileal, L2 – colonic, L3 – ileocolonic) were taken into consideration.

Material and methods: Investigated group consisted of 260 patients including 144 (55%) woman and

116 (45%) men, admitted to the Gastroenterology Department, Medical University of Lodz between 2012 and 2018. The mean age for registered diagnosis in patients with L2 location was 37 years (SD – 16), whereas in a group of patients with L3 location it was 32 years (SD – 14). 100 patients amongst those examined turned out to have lesions restricted only to large intestine area (L2) and 160 with L3 location. Importantly, patients with the diverse setting of inflammatory lesions, were compared in terms of sex, age of the diagnosis, smoking habits, extraintestinal manifestations, complications such as abscesses, fistulas, strictures and undergone surgeries due to primary disease.

Results: Looking at CD limited only to large intestine (L2), it has been shown that strictures occurred statistically significantly less rarely than in L3 location (23% in L2 location to 77% in L3 location, which stands for $p < 0.05$). Such association has yet not been observed when it comes to abscesses. They were found in limited number of 28% of patients with L2 location. Fistulas were alike – only 36% of the examined with L2 location. Patients diagnosed with location classified as L2 significantly less frequently required surgical intervention (32% L2 vs. 68% L3; $p < 0.05$). Correlation between age, sex, the age of CD diagnosis, smoking habits and presence of intestinal manifestations (42% L2 vs. 58% L3) remains irrelevant.

Conclusions: Clinical course in CD is vastly differentiated and it has to be paired with its location. Our results indicate lower occurrence of strictures and surgical procedures in patients with the disease restricted to large intestine. Having this in mind, distinguishing the third form of IBD may be highly acknowledged in the future. By that time further research and observations are needed.

Sleep dysfunction and lipid disturbance in inflammatory bowel disease patients

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Introduction: Inflammatory bowel disease (IBD) is becoming a major issue in clinical practice: the incidence of Crohn's disease and ulcerative colitis is increasing, while the effectiveness of treatment is still not satisfying. Incidence of IBD is rising in parallel with overweight and obesity. Contrary to conventional belief, about 15–40% of patients with IBD are obese, which might contribute to the development of IBD. Consequently, IBD patients are faced with many problems; sleep disturbance and lipids changes seem to be an important issue in disease development and course.

Aim: Our aim was to identify a correlation between sleep abnormalities, lipid profile and the course of IBD. We hypothesized that sleep disorders in IBD patients decrease the level of leptin and adiponectin (hormones responsible for anorexia) and increase the level of resistin (hormone responsible for lipid accumulation and overweight). These changes are responsible for abnormal levels of lipids and higher BMI. The aim of the study was to determine if sleep disturbance and lipid changes in IBD patients shorten the period of clinical remission.

Material and methods: Adult patients with IBD were enrolled to the study. All patients were asked to respond to a questionnaire to define Pittsburgh Quality Sleep Index (PSQI) to objectify sleep disturbance. From all enrolled patients, 15 ml venous blood was taken to determine adipokine levels and perform standard laboratory tests. All patients were included in a one-year follow-up period.

Results: Seventy four IBD patients were enrolled in study: 35 patients with CD and 39 with UC. Forty three IBD patients (58%) reported poor sleep (under 5 PSQI score). In group of IBD patients with poor sleep, the lower level of serum adiponectin (4998 ±241 vs. 6998 ±341 ng/ml; $p = 0.013$) and higher level of serum resistin (16.4 ±1.8 vs. 12.4 ±0.9 ng/ml; $p = 0.001$) were observed. No relationships between sleep quality and serum leptin levels in IBD patients were observed ($p = 0.456$). In IBD patients with poor sleep a higher BMI was observed (24.3 vs. 21.2, $p = 0.043$). In patients with poor sleep the exacerbation was observed more often during the one year follow-up (16.2% vs. 8.1%; $p = 0.0421$).

Conclusions: In our study, IBD patients with poor sleep had predisposition to lipid disturbance and presented higher BMI level. During the one-year follow-up exacerbations were noted significantly more frequently. Sleep disorders lead to disturbances in the lipid profile and may be considered as a risk factor for IBD exacerbations.

Sekcja 5. Nieswoiste choroby zapalne jelit – część II

Assessment of health-related quality of life in IBD patients and its relation to severity of the disease

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Introduction: Inflammatory bowel diseases (IBD) have a potential impact on physical and mental functioning.

Aim: To investigate the impact of IBD on quality of life with regard to severity of ulcerative colitis (UC) and Crohn's disease (CD).

Material and methods: Mental and physical health was assessed in IBD patients and healthy volunteers (controls) with self-administered questionnaire (SF-36v2™ Health Survey). Severity of CD was assessed with Crohn's Disease Activity Index (CDAI) and of UC with MAYO score.

Results: To the study were included 197 patients with IBD (67 with UC, 130 with CD) and 63 age- and BMI-matched healthy controls. Also UC and CD patients were not different with regard to age (36.4 ±11.5 vs. 35.1 ±12.1 years) and BMI (25.5 ±17.5 vs. 22.3 ±9.6 kg/m^2), respectively. Both the Physical Component Summary (PCS) and Mental Component Summary (MCS) were significantly lower in patients with UC (41.1 ±7.5, $p < 0.001$ and 37.1 ±9.9, $p < 0.001$) and CD (41.1 ±8.1, $p < 0.001$ and 37.6 ±10.3, $p < 0.001$) in comparison to controls (50.2 ±6.3 and 45.4 ±8.6). No difference was found between UC and CD patients in physical or mental components of SF-36. Patients with active IBD scored significantly lower in both physical and mental components than patients with inactive disease (38.3 ±6.4 vs. 47.4 ±7.3, $p < 0.001$ in PCS and 35.3 ±9.9 vs. 43.3 ±9.4, $p < 0.001$ in MCS). Moreover, patients with active UC showed lower performance in physical components than patients in remission (39.9 ±7.5 vs. 48.9 ±5.6, $p = 0.03$), whereas scores assessing mental component were similar in both stages of UC. CD patients with active disease scored significantly lower in both the physical and the mental domain than patients in inactive disease (38.3 ±6.6 vs. 48.8 ±6.3, $p < 0.001$ and 35.4 ±10.5 vs. 43.9 ±8.4, $p < 0.001$).

Conclusions: IBD is associated with a significant worsening of quality of life in both the physical and the mental domain. Activity of UC affects mainly physical component, whereas CD impacts physical and mental constituents.

Severe ulcerative colitis – a case of steroid resistant disease

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Introduction: Ulcerative colitis is an inflammatory disorder of the colon which follows a relapsing and remittent course. Medical therapy is first line as well as intervention of choice in treatment of ulcerative colitis. Different techniques for the diagnosis of CMV infection are available. CMV infection in patients with severe ulcerative colitis with serious tissue damage can be a reason of steroid resistant disease. We don't have a clear standards in the treatment of CMV in the absence of a virus in the intestinal tissue, and the growing copies of the virus in the blood.

Case report: A 27-year-old woman was admitted to a hospital because of bloody diarrhoea (20 per day), abdominal pain, fever and weight loss (BMI 17 kg/m^2). She

had been diagnosed with ulcerative colitis (pancolitis) in 2010. Laboratory results shows: anemia, high rates of inflammation (WBC, CRP), the low level of proteins and albumins. *Clostridium difficile*, *Salmonella*, *Shigella*, *Yersinia*, *Campylobacter* in the stool was negative. The flexible sigmoidoscopy shows severe colitis ulcerosa (Mayo 3) confirmed in histopathological examination and excluding CMV infection. CMV IgM antibodies was positive. Blood CMV DNA PCR test was 220 copies. We decided to use intravenous corticosteroids 400 mg/day, full dose of mesalazine, intravenous nutritional treatment. After 7 days the patient still have 15 stools with blood per day. The CMV DNA PCR in the blood test was repeated – 650 copies. In the second sigmoidoscopy in histopathological examination still not detected CMV infection. We decided to use intravenous Ganciclovir 5 mg/kg twice daily for 2 weeks. After 2 weeks CMV DNA PCR test in the boold was negative. We used anti – TNF agent – infiximab 5 mg/kg with good results. After 7 days patient had 7 stools without blood. Ganciclovir was converted into Valganciclovir for the next 100 days. One year after the end of anti-TNF agent treatment the patient is still in remission.

Conclusions: CMV infection appears to play a role in a subgroup of patients with severe steroid dependent or refractory IBD. CMV reactivation is more common in patients with severe colitis ulcerosa than severe Crohn's disease. Anti-TNF therapy may be considered to treat CMV reactivation in combination with antiviral treatment.

Selected markers of oxidative stress in plasma of adult patients with active Crohn's disease

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Introduction: Patients with Crohn's disease (CD) have increased oxidative stress (OxS) which is implicated in the pathogenesis of disease and is an important contributing factor to the tissue injury and fibrosis that characterize CD.

Aim: We evaluated levels of lipid peroxidation as malondialdehyde (MDA), reduced glutathione (GSH), ferric reducing ability of plasma (FRAP) and glutathione peroxidase (GPx) activity in the plasma of patients with active CD and nonnactive CD (remission phase).

Material and methods: A total of 54 patients with CD-32 with active CD, 22 with nonactive CD and 25 healthy controls were prospectively enrolled in this study. We examined the levels of OxS markers in plasma: malondialdehyde (MDA), ferric reducing ability of plasma (FRAP), reduced glutathione (GSH) and activity of glutathione peroxidase (GPx) and we correlated with CD activity (CDAI) and CRP levels in serum. Results were statistically analyzed.

Results: The extent of lipid peroxidation was higher in CD patients than in the controls. The levels of MDA were significantly ($p < 0.01$) higher in plasma obtained from patients with active CD than in that obtained from patients in remission (nonactive CD) and controls. Plasma FRAP and GSH levels were decreased in both CD groups compared to controls. In patients with active CD the activity of GPx was significantly ($p < 0.001$) higher than in the controls group, and returns to normal in nonactive CD (remission). MDA levels were positively correlated with the CD activity index (CDAI; $r = 0.74$, $p < 0.0001$) and CRP. Plasma FRAP and GSH levels were negatively correlated with CDAI values (FRAP: $r = –0.80$, $p < 0.0001$; GSH: $r = –0.78$, $p < 0.0001$).

Conclusions: The increased MDA and GPx and decreased FRAP and GSH levels in plasma of patients with active CD, and to a lesser extent those with nonactive CD underline the importance of lipid peroxidation in the active phase of CD.

Biosimilar infliximab in real-life Crohn's disease treatment in anti-TNF-α naïve and non-naïve patients in comparison to biologic originator: a comparative observational cohort study

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Introduction: Recently we have shown, that biosimilar infliximab Inflectra (I) in the treatment of Crohn's disease (CD) patients, is equivalent to biologic orginator Remicade (R) in terms of efficacy and safety. However data comparing response in anti-TNF naïve and non-naive patients with CD are still limited and controversial.

Aim: To assess the efficacy, tolerability, and safety of biosimilar infliximab in comparison to biologics originator in anti-TNF-α naïve and switch CD patients.

Material and methods: This was a retrospective, one center study enrolled a cohort of 168 consecutive adult CD patients. The patients received either R (73) or I (95) on the basis of the same inclusion criteria (CDAI > 300 or active perianal fistula). According to local national regulations, treatment was stopped after 1 year. Assessments included treatment-emergent adverse events (TEAEs) and disease-specific clinical response and remission after induction therapy, 1 year of treatment and during 12 months of follow-up.

Results: Both group were comparable according to age, sex, duration and type of disease, concomitant medications and smoking. 47 patients from R group and 68 from I were anti-TNF-α naïve. We did not observe differences between anti-TNF-α naïve and non-naïve patients in respect to clinical response and remission rate after induction and 1 year of treatment (Remicade – 80.9% vs. 73.1% respectively; Inflectra – 79.4% vs. 74.1%). The relapse rate during 1year follow-up was significantly higher in anti-TNF non-naïve patients ($p < 0.001$) in comparison to naïve, however with no significant differences between R and I groups. TEAEs were mostly mild-moderate in severity and occurred more often in anti-TNF non-naïve patients, with no difference between R and I group (13.33% vs. 17.65%). Surprisingly in anti-TNF naïve patients we observed higher rate of TEAEs in I group in comparison to R (8.11% vs. 1.92%), however this difference did not reached statistical significance.

Conclusions: Positive outcomes for response/remission in both groups were reported regardless of whether patients had received prior infliximab or not. Biosimilar infliximab was well tolerated and efficacious in both groups. Further study for immunogenicity and interchangeability with long-term follow-up periods are needed to confidently integrate biosimilars into IBD treatment.

Could the hyperbaric oxygen therapy be an effective adjuvant therapy for fistulising Crohn's disease?

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Introduction: Hyperbaric oxygen therapy (HBOT) is a treatment modality utilising 100% oxygen in a hyperbaric chamber, under increased pressure conditions. Blood hyperoxygenation provides better oxygen penetration into the tissues in accordance with the laws of physics, thereby reducing the inflammatory response by reducing the adhesion of leukocytes to the vascular endothelium of damaged tissues, reducing the production of pro-inflammatory cytokines, stimulating angiogenesis, improving metabolism and antibacterial and antifungal action.

Aim: To prove that HBOT therapy may be an effective adjuvant therapy for fistulising Crohn's disease (CD).

Material and methods: Observations were made in 7 patients with active perianal fistulising CD. Three patients (the first group) were in the course of biological therapy and immunomodulatory therapy, while the other four (the second group) were administered only standard immunomodulatory therapy. Both groups have undergone HBOT according to the following protocol: 30 session, 90 minutes each, with pressure of 2.5 standard atmosphere. Analysis of clinical disease activity was performed by means of CDAI scale, biomarkers (fecal calprotectin (FC), blood CRP) and imaging studies: endoscopy and magnetic resonance imaging (MRI) of the pelvis with contrast. Observational study was divided into 4 stages: stage I – prior to treatment, stage II – HBOT therapy, stage III – after completing the HBOT treatment, stage IV – 6 weeks after HBOT. Regression of lesions confirmed in clinical evaluation and imaging studies was assigned as the end point.

Results: Analysis of the group of patients showed clinical improvement in CDAI in 2 out of 3 patients from the first group and in 3 out of 4 from the second group. Levels of FC decreased in all 3 patients form the first

group and in 3 out of 4 from the second group, while the level of blood CRP decreased in one patient from the first group and one patient from the second group. Imaging studies (MRI, endoscopy) showed regression of lesions in 2 out of 3 patients from the first group and in 3 out of 4 patients from the the second group.

Conclusions: On the basis of the results recorded in both groups of assessed patients we can conclude that HBOT may be an effective way to support the treatment of CD by improving clinical improvement and significantly reducing the occurrence of inflammatory lesions in the imaging studies.

Alterations in serum Mac 2 binding protein (M2BP) in relation to disease activity in patients with inflammatory bowel diseases

prezentacja ustna

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Introduction: Serum Mac-2 binding protein (M2BP) plays an important role in cell adhesive processes and has ability to upregulate proinflammatory cytokines such as IL-1, IL-6, and TNF-α. Elevated levels of M2BP were found in patients with various types of cancers, acute coronary syndrome, numerous inflammatory processes, including: asthma, chronic pancreatitis, liver fibrosis and autoimmune hepatitis. However, there have been no studies in inflammatory bowel diseases (IBD).

Aim: To assess M2BP level in patients with ulcerative colitis (UC) and Crohn's disease (CD), and to correlate it with the disease activity.

Material and methods: One hundred twenty consecutive patients, including 53 with UC (31 in remission, 22 with active disease), 67 with CD (32 in remission, 35 with active disease) and 30 healthy controls were included. The white blood cell count, haematocrit, platelet count, fibrinogen, C-reactive protein, IL-6, TNF-α, Mac-2BP levels in serum were measured. The activity of UC was evaluated according to the Mayo scale. The activity of CD was evaluated according to Crohn's disease activity index (CDAI).

Results: There was no significant difference in the median M2BP level between the UC group, CD group and the control group – 63.73 (47.72–84.10) ng/ml, 73.98 (51.58–102.42) vs. 59.62 (52.60–73.40) ng/ml, respectively. However, the median M2BP level in the patients with active UC was significantly higher 72.74 (60.86–101.72) ng/ml than in the group with inactive disease 61.22 (39.31–72.60) ng/ml, $p = 0.006$ and the control group ($p = 0.01$) In the active CD group median M2BP level was higher than in the control group (79.854 (52.05–110.12) ng/ml, $p = 0.04$). In the UC group M2BP level correlated with CRP ($r = 0.304$, $p = 0.02$), interleukin 6 level ($r = 0.281$, $p = 0.04$) and disease activity ($r = 0.298$, $p = 0.03$). No such correlations were found in the CD group. There was also no correlation with the disease duration. In UC patients presenting disease complications median levels of M2BP were higher, however, the differences were not statistically significant.

Conclusions: This is the first study to show that M2BP is increased in active IBD and in UC its level is associated both with inflammatory markers and disease activity as well.

Depressive and anxiety symptoms among patients with inflammatory bowel diseases

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Introduction: The psychological features of inflammatory bowel disease (IBD) patients are very important in the perception of symptoms, but crucial as triggers of IBD or as a releasing factor for IBD symptoms recurrence.

Aim: This study was conducted on a population of patients with IBD and was based on an assessment of the prevalence and severity of depression and anxiety symptoms in various clinical aspects.

Material and methods: The study included 130 patients with IBD, including 68 with Crohn's disease (CD) and 62 with ulcerative colitis (UC). The severity of anxiety and depression symptoms were examined by the Hospital Anxiety and Depression Scale (HADS). Patients were also subjected to assessment of anthropometric attributes, clinical factors, quality of life, and symptoms of the disease, with dedicated clinical scales.

Results: The occurrence of significant symptoms of anxiety was estimated at 45.5% in patients with CD and 30.5% in the UC patients. Significant depressive symptoms related to 20.5% of people with CD and 17.5% of patients with UC. The parameters of anxiety and depression showed significant associations with parameters of quality of life, BMI, and the scales describing the exacerbation of the diseases.

Conclusions: The analyses did not reveal significant differences in the severity and prevalence of symptoms of anxiety and depression in subgroups with IBD. The expansion of relevant symptoms of anxiety and depression in this population was greater than in the general population. In addition, there was a significant correlation between parameters of HADS and clinical factors.

Cognitive functions in patients with Leśniowski-Crohn's disease treated with adalimumab

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Introduction: Crohn's disease is, according to the current state of the art, a chronic, incurable illness of the gastrointestinal tract. Complications occurring in its course often affect many different organs and systems. Cognitive functions are a group of psycho-

logical processes used to process the information reaching ones mind. They play a decisive and essential role in the life of every human being.

Aim: Assessment of cognitive functions in patients with Leśniowski-Crohn's disease treated with adalimumab in the state of exacerbation and remission.

Material and methods: The study group consisted of 41 patients diagnosed with endoscopically and histologically confirmed Leśniowski-Crohn's disease treated with Adalimumab Treatment Program and were qualified for therapy, and then continued on a defined schedule for at least 14 weeks. Exacerbation of the disease was defined as CDAI > 300 points, and remission as CDAI < 150 points. If this criterion was not met, the patient was not eligible for participation in the project. Cognitive functions were assessed at the beginning of treatment (week 0) and after 14 weeks of therapy. At that time, the clinical activity of the disease (HBI, CDAI) was also evaluated and basic laboratory tests (morphology, CRP) were performed.

Results: During the 14 weeks of adalimumab therapy, a statistically significant improvement in the results obtained in neuropsychological tests: operating memory and field search function, literal fluency, immediate memory auditory, maintaining attention and controlling the reaction over time.

Conclusions: Our research confirms the beneficial effect of effective treatment and remission of Crohn's disease on the state of cognitive functions. This may be due to a decrease in the severity of inflammation, a reduction in the vexing of accompanying symptoms or modification of pharmacological treatment. The beneficial effects of adalimumab are also highly likely. This may speak for greater availability of this form of treatment. Also, in none of the evaluated tests was a statistically significantly worse result observed compared to the measurement carried out in the exacerbation of the disease before the biological agent was used. To our knowledge this is the first such study carried out in the world.

Circulating lymphocytes of IBD patients have altered concentrations of regulators of apoptosis

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Introduction: Apoptosis is strictly regulated by among others transcription factor p53 and the members of Bcl-2 family. An increased level of anti-apoptotic mediators as well as an aberrant response to pro-apoptotic signals have been previously observed in lymphocytes isolated from intestine in IBD whereas little is known about the susceptibility to apoptosis of peripheral lymphocytes (PBLs).

Aim: Study was performed to evaluate the concentrations of p53, cytochrome c and Bcl-2 in PBLs in healthy volunteers and IBD patients with respect to the disease type and activity.

Material and methods: A group of 64 individuals was enrolled: 42 IBD patients (25 ulcerative colitis (UC) and 17 Crohn's disease (CD)) and 22 apparently healthy volunteers. Cytochrome c, Bcl-2 and p53 were quantified immunoenzymatically in lysates of PBLs.

Results: The concentrations of Bcl-2 in PBLs from IBD patients were significantly lower as compared to healthy volunteers (17 vs. 35 ng/ml, $p < 0.001$) without significant difference between CD and UC ($p = 0.063$). Patients with active UC had significantly lower Bcl-2 as compared to patients with inactive UC (18 vs. 28 ng/ml, $p = 0.044$). Also cytochrome c was lower in IBD than controls (294 vs. 406 ng/ml, $p = 0.003$) without significant difference between CD and UC ($p = 0.060$). Patients with active CD had significantly higher cytochrome c than these with inactive disease (213 vs. 75.5 ng/ml, $p = 0.039$). Yet, cytochrome c tended ($p = 0.070$) to increase along with increased Truelove and Witts severity index with 244, 339, and 349 ng/ml in mild, moderate and severe UC. In turn, p53 did not differ significantly between IBD patients and controls ($p = 0.080$) but was significantly lower in CD than UC (3.1 vs. 8.5 ng/ml, $p = 0.039$). None of the apoptosis mediators correlated with CDAI or MDAI. In a whole cohort, there were positive correlations between Bcl-2 and p53 ($r = 0.56$, $p < 0.0001$) and cytochrome c and p53 ($r = 0.25$, $p = 0.049$). In subgroups, Bcl-2 and p53 were positively correlated in healthy controls ($r = 0.69$, $p < 0.001$) as well as CD ($r = 0.50$, $p = 0.041$) but not UC patients. Bcl-2 was characterized by good accuracy as an IBD marker (86% at ≤ 25 ng/ml) and p53 by moderate accuracy as a CD/UC differentiating marker (70% at ≤ 6.8 ng/ml).

Conclusions: IBD is associated with decreased concentrations of apoptosis modulators in peripheral lymphocytes and the deregulation seems to be more pronounced in CD. Bcl-2 has a good overall accuracy

as an IBD marker while p53 is moderately accurate in differentiating CD from UC.

Role of electrogastrography in detecting motility disorders in patients with Crohn's disease

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Introduction: Crohn's disease (CD) is characterized by the presence of gastrointestinal disturbances.

Aim: To assess, by means of multichannel electrogastrography (EGG), the presence of gastrointestinal motility abnormalities in patients with CD.

Material and methods: The study was conducted in 17 patients with CD (3 F, 14 M; mean age: 38.4). Gastric activity was assessed by using 4-channel EGG. An EGG was recorded for 30 minutes in a fasting state and for 60 minutes after ingestion of small meal. In each case, their response to eating meal after fasting fase as well as the dominant frequency (DF), dominant power (DP) and the average slow wave coupling (ASWC) of the electrical activity of stomach were recorded. These parameters were compared with the accepted range of standards [1].

Results: Properly in healthy people DF should have increased after ingestion but it was not observed in patient with CD (average in fasting period 3.4 vs. postprandial 3.03 cpm). Similarly ASWC after ingestion should have increased but remained constant in study group – 30.08 vs. 30.19. The percentage of normogastria after food intake has decreased (63 vs. 5.4) which disagreed with the physiology. It was also incorrect recording to percentage of bradygastria and arrhythmia which should decreased in postprandial period – 5.6% vs. 6.5% and 22.2% vs. 24.8% respectively. A discrete decrease in perentage of tachygastria was observed that complied with accepted norms – 9.2% vs. 9.3%.

Conclusions: EGG is non-invasive and probably useful method to detect motility disorders in CD patients. More research with the control group of healthy volunteer is needed.

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Thiopurine S-methyltransferase genotyping among patients with Crohn disease treated with thiopurines

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Introduction: During the treatment with azathioprine (AZA) side effects are observed in 28% patients with inflammatory bowel diseases (IBD) and 9% patients are resistant to drugs from thiopurines group. Thiopurine S-methyltransferase (TPMT) is one of enzymes responsible for biotransformation of thioguanines. People with decreased activity of TPMT accumulate toxic 6-thioguanin nucleotides in their bone marrow what can lead to myelosuppression or even to death.

Aim: Establishing TPMT genotype distribution in population of patients with Crohn disease (CD) who have undergone the therapy with thiopurines and assessment the frequency of occurrence and severity of side effects, mainly myelotoxicity.

Material and methods: The study was performed in the group of 19 patients with CD treated currently or in the past with AZA and one person treated with 6-mercaptopurine. 4 variants of TPMT alleles were examined: TPMT*2, TPMT*3A, TPMT*3C, TPMT*3B using PCR-RFLP method. Moreover patients have completed the original questionnaire concerning the thiopurine therapy and side effects. The laboratory tests results, especially blood morphology, was taken into account as well.

Results: The variant of TPMT*1/*3A mutation (heterozygote) was found in 2 patients. The rest of patients were regular wild type homozygotes TPMT*1/*1. In the first person with mutation no side effects has been noted what can be connected with taking merely half a advisable dose. The second person (AZA 2 mg per kg body weight) reported a tendency to more frequent

infections, anemia and leucopenia. In the group of all patients 3 persons stopped taking a drug and 1 reduced a dose by half due to severe side effects such as: diarrhea, acute pancreatitis, weakness, liver dysfunction, nausea and vomiting. None of them was found to have TPMT mutation. The most frequently reported side effects were nausea (45%), joints and muscles pains (40%), anorexia (25%) and heart arrhythmias (20%).

Conclusions: As much as 10% of examined patients were heterozygotes with lower activity of TPMT, where it was indicated to reduce a dose by half so as to avoid severe side effects, especially myelosuppression. The relation between mutation and occurrence of the rest of side effects wasn't found. TPMT genotyping increases safety of the treatment with thiopurines and it should be considered before introducing the drug.

The prevalence, characteristic and determinants of anemia in newly diagnosed patients with inflammatory bowel disease

prezentacja ustna

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Introduction: Anemia is the most common extraintestinal manifestation of inflammatory bowel disease (IBD) which has the negative impact on the quality of life.

Aim: To determinate the prevalence, risk factors and etiology of anemia in newly diagnosed patients with IBD patients.

Material and methods: We included 136 newly diagnosed patients with IBD hospitalized between January 2010 and December 2016. We analyzed patient age, sex, laboratory tests, endoscopic and radiologic examination, length of stay and the course of hospitalization.

Results: Anemia at the time of IBD diagnosis was detected in 89 (65.4%) patients (51 (57.3%) patients with ulcerative colitis vs. 38 (42.7%) patients with Crohn's disease; $p = 0.052$). Female patients were more frequent anemic than male patients (59.6% vs. 40.4%; $p = 0.001$). Anemia was more often diagnosed in CD patients with ileocolonic involvement compared to other types of disease location (70.96% vs. 56.52% respectively; $p = 0.03$). The prevalence of anemia at the time of diagnosis for UC patients increased with disease extension, for extensive colitis anemia was diagnosed in 64.71% compared to 35.29% in limited extension ($p < 0.05$). Anemic patients were significantly longer hospitalized than patients with no anemia (7.95 ±3.8 days vs. 5.88 ±2.7 days for CD; $p = 0.02$ and 9.02 ±5.0 days vs. 5.00 ±2.4 days for UC; $p < 0.05$).

Conclusions: Anemia represents the frequent complication of IBD not only during long-term course of the disease, but also at the moment of diagnosis. Anemia is one of the factors extending time of hospitalization. Female sex and disease extend are strong determinant factors connected with anemia.

Biomarkers role in optimizing treatment of IBD

prezentacja ustna

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Introduction: Crohn's disease (CD) is a chronic condition with a variable course. Available grading systems include clinical assessment using CDAI scale, imaging studies and biomarkers.

Aim: To determine the suitability of available diagnostic methods, by means of comparison, for predicting the disease activity, based on cost efficiency and sensitivity criteria.

Material and methods: In this study, we conducted analyses of 37 patients with CD. Crohn's disease was graded as "active" or "inactive" by adopting certain cut off values for every marker. The main assumption was that methods used to grade CD severity (Endoscopy SESCD scale, MRI enterography: DWI ADC, CRP and Calprotectine) do not give false positive results. In addition none of these methods was considered a reference

method. Authors also decided to measure the agreement between the methods by applying the Cohen's Kappa coefficient and compare them to the CDAI method.

Results: Endoscopy shows the highest sensitivity, NPV and accuracy in detecting activity of CD overall and in each intestine separately. In the case of involvement of both intestines, the sensitivity of endoscopy reached 93.9% and the accuracy 94.6%, while the sensitivity and accuracy of enterography and calprotectin were 51.5% vs. 71.9% and 56.8% vs. 72.2%, respectively. For the large intestine, the sensitivity and accuracy of endoscopy reached 100.0%. This means that there were no cases when enterography detected the activity of disease and endoscopy did not. For the small intestine, the sensitivity of endoscopy was 55.0% and accuracy 75.0%, while enterography showed only 66.7% and 81.1% respectively. The best agreement (77.1%), taking into account all pairs of methods, and the only one which proved to be statistically important ($p = 0.005$) was between endoscopy and calprotectin regarding the involvement of both small and large intestine. However, the value of Cohen's Kappa suggest that this agreement is rather moderate. The optimal cut-off value for calprotectin was 43.0 µg/g for both techniques (Tangent method and Youden's index). Area under the ROC curve (AUC = 0.871) was large enough to conclude that calprotectin is a statistically significant ($p < 0.001$) indicator of CD activity in both small and large intestine.

Conclusions: Statistically significant compliance was shown only between colonoscopy and fecal calprotectin.

Translation and validation of Inflammatory Bowel Disease-Fatigue (IBD-F) Scale in Poland

prezentacja ustna

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Introduction: Fatigue is a frequently reported symptom by people with inflammatory bowel disease (IBD). It is considered a complex and multifaceted symptom that negatively affects many aspects of individuals' lives and reduces quality of life. Assessment of fatigue has presented considerable challenge, as only recently has a specific IBD-F scale become available in English.

Aim: To translate and validate IBD-F scale for use in Polish IBD population.

Material and methods: A standard procedure was followed with forward and back translation by a medical and a lay person. The two versions were compared and discussed by the research team and a group of medical and nursing professionals, who agreed the final Polish version of IBD-F scale. Testretest took place 14 days apart.

Results: 129 patients, 56 (43.4%) with ulcerative colitis (UC) and 73 (56.6%) patients with Crohn's disease (CD) took part in the test, and 103 (79.8%) respondents completed the re-test. The percentage of women was 53.6% in UC and 45.2% in CD groups. Patients with CD were younger, median age 28 vs. 35 years in UC, $p < 0.05$. The Intra-Class correlation coefficient (ICC) was found to be equal or above 0.6 for 29 of the 35 questions. A significant difference was only found for one question "I was not able to do as much physical activity as I wanted because of fatigue". In the English version compliance was 0.88 (95% CI: 0.78–0.94), in Polish version of the questionnaire, the compliance factor was much lower 0.659 (95% CI: 0.53–0.758). Comparison of ICC values for the combined results of the IBD-F questionnaire, for both Section I and Section II, indicates good agreement between test-retest (above 0.75). The results obtained are almost identical to those presented in the original work. Internal consistency was assessed using Cronbach's α coefficient, and for Section I was 0.883 (95% CI: 0.85–0.92); while for Section II it was 0.966 (95% CI: 0.95–0.98); in the English version it was 0.91 and 0.98 for Section I and II respectively. It is noteworthy that, in the retest, Cronbach's α values for both parts of the questionnaire were slightly, but not significantly, higher: 0.898 for Section I and 0.971 for Section II.

Conclusions: The obtained values of ICC and Cronbach alpha coefficients are satisfactory. Observed small differences are most likely due to cultural determinants and require further investigation. IBD-F can be used to assess the severity and impact of fatigue in Polish IBD patients' population.

Sekcja 6. Inne choroby

Ratio of right-sided to left-sided dysplastic colonic polyps is a valid key performance indicator

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Introduction: Quality improvement in performance of colonoscopy, with special attention to the detection of proximally located flat precursors, have the potential to prevent postcolonoscopy colorectal cancer.

Aim: To characterise a specific anatomic distribution of colonic polyps with and without cytologic dysplasia.

Material and methods: A prospective analysis of consecutive diagnostic or surveillance colonoscopies for various indications performed from 2013–2017 by an endoscopist with high lesion detection rate. The primary outcome was a detection of dysplastic polyp (DP); secondary outcome – a detection of non dysplastic polyps (nDP) but with inflammatory and postinflammatory polyps exclusion. The exclusion criterion was also a hemicolectomy. Differences in numbers of the polyps were calculated using between subject and within subject ANOVA and Pearson's χ^2-test. For the multivariate analysis, a logistic regression test was used. A total of 3811 colonoscopies were analysed. Adenomas detection rate was 26.03%. The crude caecal intubation rate was 93.55%. 1480 patients were included to the study (mean age: 64.43 ±12.92).

Results: 65.54% (n = 970) of patients had at least one DP (623 individuals had only DP); 34.46% (n = 510) of patients had only nDP. There were 499 patients with DP located only in the right colon (RC) (caecum, ascending and transverse colon), 273 patients only in the left colon (LC) (descending, sigmoid and rectum) and 198 patients in both sides of the colon. A significant differences were noted ($p < 0.001$) when patients with smaller than 1 cm DP were compared ($\chi^2 = 117.52$; 18.3% vs. 10.3%) or regardless their size in both colonic parts (10.3% vs. 6.2%) – in group of patients in age ≥ 50 ($\chi^2 = 112.59$, $p < 0.001$) or in all patients regardless their age ($\chi^2 = 94.39$, $p < 0.001$). In total, 3892 polyps were removed: 1549 from the RC and 2343 from the LC (39.80% vs. 60.20%). 1254 DP were located in the RC and 678 DP in the LC (64.9% vs. 35.1%); 295 nDP and 1665 nDP were found respectively in the RC and the LC (15.05% vs. 84.95%). The proportion of DP amount was significantly greater on the right colon when compared with the left colon (M = 0.85; SD = 1.33 vs. M = 0.46; SD = 0.91) ($F = 25.86$, $p < 0.001$).

Conclusions: Missing a polyp in the right colon is likely more significant than missing one in the left colon and guidelines should focus attention on the proximal colon and provide feedback to endoscopists regarding their ratio of DP located in the right colon to DP in the left colon.

Postprandial effect of gastrointestinal hormones on gastric activity in constipation predominant IBS patients

prezentacja ustna

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Introduction: Alerted gut regulation which include motor and secretory mechanism are characteristic of irritable bowel syndrome (IBS). Several gut peptides contribute to the regulation of gastrointestinal function. Deteriorate postprandial symptoms in IBS patients are related to discomfort and pain, reduce perception thresholds for gas and abnormal colonic motor activity.

Aim: To asses postprandial response of gut peptides and gastric myoelectric activity in constipation predominant IBS patients.

Material and methods: We evaluated fasting and postprandial (meal Nutridrink 300 kcal/300ml) plasma levels of gastrin, CCK, VIP, ghrelin and gastric myoelectric activity by using 4 channel electrogastrography (EGG) in 36 patients with IBS (16 males, 20 females, mean age: 40.1 ±11.3 years) and 36 healthy subjects (16 males, 20 females, mean age: 41.1 ±8.7 years).

Results: In fasting state gastrin levels were significantly elevated in patients (73.76 ±29.82 ng/ml) compared to controls (3.21 ±14.26 ng/ml; $p = 0.000$) and decreased of VIP (10.94 ±21.67 vs. 27.26 ±21.51 ng/ml; $p = 0.0001$) and ghrelin (176.01 ±88.47 pg/ml vs. 250.24 ±84.55 pg/ml; $p = 0.000$). The nonsignificant change of CCK level was noted. Postprandial gut peptides changes in IBS patients compared to fasting stage: increase of gastrin (97.74 ±36.1 ng/ml; $p = 0.000$), CCK (2.96 ±14.3 ng/ml, $p = 0.000$), VIP (9.48 ±5.61 ng/ml; $p = 0.000$), and ghrelin (153.76 ±142.96 ng/ml; $p = 0.000$) were observed. IBS patients demonstrated decrease normogastria in fasting and postprandial state (59.8 ±22.0 vs. 66.3 ±20.2% respectively) compared into controls (83.19 ±16.7%; $p = 0.000$ vs. 86.1 ±9.4%; $p = 0.000$). Patients did not show significant improvement in the percentage of normogastria time, Dominant Power (DP) and slow wave coupling (SWC) in response to food intake. The power ratio of DP showed alteration in gastric contractions, in controls mean ratio was 1.58, whereas IBS patients mean ratio was 0.10, reflects a decrease in gastric contractility.

Conclusions: The disturbances of plasma level of gut peptides may contribute to the abnormal gastric activity and followed intestinal motility, what manifest in expression of clinical symptoms of IBS patients such as the presence of visceral hypersensitivity or predominant bowel habit.

Giardia intestinalis and *Escherichia coli* (NDM-1) coinfection as a reason of persistent diarrhea in a Polish traveler to India

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Introduction: *Giardia intestinalis* causes one of the most common form of parasite-induced diarrhea. Patients suffer from loose watery stools. Travelers to the intertropical regions are specially exposed for protozoa infections. *Giardia* influence the intestinal microbiom and is responsible for prolonged gastrointestinal pathology caused by other etiologic agents – bacterial, viral. The aim of the study was to evaluate of treatment in patient with *Giardia intestinalis* and *E. coli* NDM-1 coinfection.

Case report: 28-year-old-man admitted to the Tropical Clinic, because of loose stools. The signs appeared during his business trip to India, where he was staying for 2 weeks. Because of the diarrhea he had spent 3 days in a New Delhi hospital. When he returned, the problems appeared again. He looked for help in primary health care. He was given Metronidazole but without any improvement. On admission day th physical examination revealed presence of abdominal tenderness, enhanced bowel movements. The patient was isolated. The coproscopy revealed presence of numerous *G. intestinalis* cysts and trophozoits. The bacteriological stool culture detected karbapenemase resistant *Escherichia coli* (NDM-1, OXA-48, KPC). The antiparasitic treatment with metronidazole and intetrix was initiated. Although the patient was treated with prompt drugs, stools samples were still *Giardia* positive. He received second combined therapy with albendazole (for cysts eradication) together with intravenous Colistin. The symptoms disappeared and stool negativisation was obtained. The symptoms disappeared and stool negativisation was obtained. Two weeks after follow-up stool examination was repeated and unfortunately huge amount of *Giardia* cysts were detected again. This phenomenon can probably be connected to presence of New Delhi Escherichia coli strain in the stool.

Conclusions: Prolonged diarrhea are very common feature of hospitalization within travelers. *Giardia* intestinalis belongs to the major etiologic agent responsible for the abdominal pathology. The parasitological stool examination should be performed in every case of persistent diarrhea. The diagnosis requires multiple stool sampling. Long-lasting *Giardia* intestinalis presence disrupt the bowel homeostasis. Alterations in microbiota might explain presence of prolonged symptoms. Polymicrobic interactions involving *Giardia* and gut microbiota with biofilm changing and bacterial invasions may also cause persistent dysbiosis resulting in post-infection gastrointestinal disorders.

Correlation between interleukin 1β, claudin, occludin serum concentrations and autonomic nervous system activity in neurological asymptomatic celiac disease

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Introduction: Celiac disease (CeD) is an immunological disease caused by gluten intolerance, occurring in genetically susceptible patients. Clinical outcome includes either abdominal or extraintestinal manifestations with neurologic complications. Previous studies confirmed presence of dysfunction of autonomic nervous system (ANS) in neurologically asymptomatic CeD patients, resulting in impaired gastric myoelectric activity. CeD development comprises impaired in tight junction structure like expression of transmembrane proteins such as claudins (CL) and occludin (OCCL). Interleukin 1β (IL-1β) is an important mediator of the inflammatory response.

Aim: To evaluate OCCL, CL and IL-1β serum concentrations in neurological asymptomatic CeD patients and its correlation with selected parameters of ANS activity markers (heart rate variability and electrogastrography, HRV and EGG).

Material and methods: Thirty four CeD patients (70% females, 41.18 ±16.58) and 34 healthy subjects control group (CG) (35.82 ±9.49) were tested for OCCL, CL, IL-1β serum concentrations. The CeD group underwent HRV and EGG testing.

Results: No significant impact of CeD on the average results of IL-1β concentrations was observed ($p = 0.44$, the Mann-Whitney test). In CeD lower average level of OCCL (1.41 (0–2.9) ng/ml) than CG (1.68 (0.39–4.8) ng/ml) ($p = 0.07$, the Mann-Whitney test) was observed. CeD patients resting HRV parameters had lower than CG: LF – 298.0 (32.3–11226.0) vs. 973.0 (101–5544.0) [ms^2], $p = 0.0001$; HF – 365.54 (43.2–21870) vs. 1123.0 (101–6927.0) [ms^2], $p = 0.0001$. In the CeD group the assessment of HRV revealed a negative, statistically significant correlation of CL concentration and VLF-RRI (Spearman's rank correlation coefficient: $r = –0.51$, $p = 0.018$) and positive correlation between IL-1β and LF/HF was noticed ($r = 0.51$, $p = 0.032$). Statistically significant, negative and strong correlation of IL-1β concentration and Dominant Power of EGG ($r = –0.58$, $p = 0.038$) was present.

Conclusions: ANS activity measured by EGG and HRV seems to be correlated with presence of IL-1β. In CeD group the serum concentration of CL and OCCL did not correlate to ANS activity.

Altered purine metabolism in women with coeliac disease

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Introduction: In coeliac disease (CD), an autoimmune enteropathy that affects genetically susceptible individuals, the immune response triggered by gluten leads to villous atrophy with hyperplasia of the crypts and chronic inflammation in the lamina propria. Pathological changes in the intestinal mucosa are generally located in the proximal small bowel where absorptive cells act as a barrier to dietary purines, effectively degrading them to hypoxanthine (HX), xanthine (X), and the end product of purine degradation in humans – uric acid (UA). On the other hand, the purine salvage pathway is very active in small intestinal enterocytes, converting HX to IMP.

Aim: To examine whether CD is associated with changes in purine metabolism.

Material and methods: We determined serum levels of HX, X, and UA in 18 women with active CD and 18 healthy controls matched on age, gender, and BMI. Fasting venous blood was collected in serum separator tubes; the serum samples were then deproteinized with perchloric acid, neutralized with potassium phosphate, and analysed by HPLC-DAD. To assess the dietary intake of purine-rich foods and alcohol consumption (which increases purine catabolism), all study participants were interviewed by a dietitian and completed a semi-quantitative food frequency questionnaire (FFQ). The diagnosis of CD was based on serological markers – anti-endomysial antibodies (EMA), anti-deamidated gliadin peptide antibodies (DGP), and anti-tissue transglutaminase antibodies (tTG) – IgA and IgG; an intestinal biop-

sy, and in some cases on genetic testing for HLA-DQ2/DQ8. The mucosal changes were evaluated according to the Marsh-Oberhuber classification. Patients with kidney disease were excluded from the study.

Results: The consumption of purine-rich foods (portion per week) was similar in CD patients and in the control group (meat: 10.66 ±1.90 vs. 10.37 ±1.21; legumes: 1.75 ±0.50 vs. 1.76 ±0.62), and the alcohol intake (portion per week) was lower in CD group than in healthy subjects (0.55 ±0.14 vs. 1.80 ±0.52; $p < 0.05$); nonetheless, serum HX levels were significantly lower in CD patients than in controls (5.61 ±0.64 vs. 7.70 ±0.77 μM; $p < 0.05$), while UA and X levels were not different between the groups.

Conclusions: Our findings suggest that CD is associated with a shift in purine metabolism, probably redirecting HX to the purine salvage pathway in the small intestinal mucosa, which lowers HX levels in the blood.

Clostridium difficile infection recurrence predictors – own experience

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Introduction: Increased number of *Clostridium difficile* infections has been noted both in the hospitalized patients and persons not belonging to the risk group. Infection recurrence contributes to the prolonged hospitalization, severe course of the disease and not uncommon complications, including deaths. Although *Clostridium difficile* infection risk factors are well documented, its recurrence predictors remain incomplete and not fully defined.

Aim: To analyze the recurrence of *Clostridium difficile* infections in patients hospitalized in Gastroenterology Ward.

Material and methods: We carried the retrospective analysis of the medical histories of 79 patients, hospitalized due to CDAD, in the Gastroenterology Ward in the Regional Specialist Hospital, within 2012–2015. In our statistical analysis we utilized IBM Statistics software (24).

Results: 11 patients qualified for the study (6 women and 5 men; average age of 72). Prior to the first episode of the disease 10 of them were hospitalized and 10 underwent the antibiotic therapy. 9 patients had comorbidities. In the studied group, apart from the diarrhea, there was also abdominal pain, fever and lower gastrointestinal bleeding. Analysis of the laboratory test results from the first episode showed increased CRP in all the 11 patients. We have found that 10 patients acquired the infection in the hospital environment.

Conclusions: We found in our study the following recurrence predictors: previous hospitalization, antibiotic therapy, coexisting abdominal pain, fever and the lower gastrointestinal bleeding, as well as infection acquisition in the hospital environment and increased CRP at the first-ever episode of the disease.

Effects of water load test on gastric motility and autonomic nervous system activity in patients with functional gastrointestinal disorders (dyspepsia and irritable bowel syndrome)

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Introduction: The functional gastrointestinal disorders (FD), in particular dyspepsia and irritable bowel syndrome (IBS), are frequently diagnosed in patients referred to gastroenterologists. In the pathogenesis as a common mechanism proposed visceral hyperalgesia (visceral hypersensitivity). Water load test is a standardized test used to induce gastric distension and to evoke gastric motility without the enterohormonal response.

Aim: To investigate the effect of water ingestion on autonomic nervous system (heart rate variability – HRV) and gastric motility (electrogastrography – EGG) in patients with functional gastrointestinal disorders (dyspepsia and IBS) compared to healthy subjects.

Material and methods: 36 patients with constipation predominant IBS (16 males, 20 females, mean age 40.1 ±11.3 years), 24 patients with dyspepsia (11 males, 13 females, mean age: 43.2 ±9.8 years) and 36 healthy subjects (16 males, 20 females, mean age: 41.1 ±8.7 years) were studied. The simultaneous recording of ECG with HRV analysis and EGG were performed before and after water intake (500 ml per 5 minutes).

Results: EGG. Fasting dyspepsia and IBS patients showed decreased % time of normogastria (59.8 ±22.0 vs. 63.9 ±19.8 vs. 83.19 ±16.7, $p = 0.002$, respectively) and mean slow wave coupling (SWC) (57.3 ±13.01 vs. 59.3 ±13.5% vs. 70.49 ±18.2%, $p = 0.001$) in comparison to control group. After water load test in dyspepsia group increased % time of bradygastria from 7.6 ±6.9 to 13.2 ±8.6; $p = 0.01$. The percentage of dysrhythmia and normogastria time did not change significantly in IBS patients and control group. In both IBS and dyspepsia groups SWC increased, but not reached control value (74.9 ±16.4%). ANS. At rest the spectral domain HRV analysis parameters were significant lower in dyspepsia and IBS patients than in control (LF – 393.9 vs. 1133.8 vs. 1413.6, $p = 0.03$; HF – 265.9 vs. 1259.6 vs. 1882.6, $p = 0.01$, respectively). Water test induced the increase of LF (860.8 vs. 1264.3 vs. 1856.6; $p = 0.03$) and HF (618.2 vs. 1414.3 vs. 2147.6; $p = 0.02$) indices in patients, similarly as, control, but not reached normal value.

Conclusions: In IBS and dyspepsia patients the activation of autonomic nervous system especially parasympathetic innervation after water load test was lower than in control group. Decreased ANS reactivity in functional disorders may contribute to myoelectrical gastric dysfunction.

Primary leiomyosarcoma of the colon

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Introduction: Intestinal sarcomas are extremely rare tumors of gastrointestinal tract, with the most common location in the small intestine (45% of cases) and in the colon (38%). Primary leiomyosarcoma (LMS) is a sporadic subtype of this malignancies with only 11 cases reported in the literature between 2000–2012. We present a case of a man with primary leiomyosarcoma of the colon.

Case report: 60-year-old man with no relevant medical history admitted to the department of gastroenterology due to bloody diarrhea and abdominal pain lasting for 2 months with unintended, significant body weight loss. Routine laboratory tests revealed sideropenic anemia and increased value of CRP. During further evaluation colonoscopy was performed and large policyclic tumor closing the lumen of the sigmoid colon was found. Tumor had atypical appearance, was covered by gray and whitish mucosa. CT confirmed presence of bulky tumor (150 mm in diameter) growing to the lumen of colon. The tumor was characterized by hypodensity and irregular contrast enhancement. Additionally, multiple small lymph nodes surrounding the sigmoid colon were found. Histological report of colonic biopsy showed features of low differentiated malignant tumor, immunohistological markers of adenocarcinoma, GIST and GEP-NET were negative. Surgical sigmoid resection was performed. Final diagnosis was established after pathological examination of surgical specimens: Leiomyosarcoma (LMS), Epithelioid type, High Grade according FNCLCC (G3; total score 8). Paliative chemotherapy was administratred (DOXO + IFO). Patent died 10 months after initial diagnosis due to disease progression.

Conclusions: Primary leiomyosarcoma of the colon are very rare malignancies characterized by high aggressiveness and poor prognosis.

Altered expression of RASSF1A and YAP1 genes are associated with the progression of colorectal cancer

prezentacja ustna

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Introduction: Colorectal cancer (CRC) is one the most frequently diagnosed neoplastic diseases worldwide. In Poland, CRC is second (9.2%) in females and third (7%) in males among other malignancies. Despite of modern diagnostics and treatment, the mortality due to CRC dynamically increases. High mortality of advanced CRC is associated with frequent distant metastasis and occurrence of drug resistance of tumor cells for modern chemotherapy. Therefore, the search for new molecular targets in CRC treatment is needful. The Hippo pathway has recently become subject of intense investigations since it plays a crucial role in cell proliferation, differentiation, apoptosis and tumorigenesis. Components of the Hippo pathway are deregulated in various human malignancies. RASSF1A is the tumor suppressor gene and acts as a Hippo up-stream activator. Active Hippo signalling inhibits YAP1 oncoprotein, which increased expression was observed in several malignancies.

Aim: Our aim was to measure the expression of RASSF1A and YAP1 genes at mRNA and protein levels in CRC. Further, the molecular results were compared with clinical-pathological data of patients.

Material and methods: Paired tumor-normal CRC tissues from 65 patients were collected either during hemicolectomy (32 cases) or routine endoscopy (33 cases). RASSF1A and YAP1 mRNA levels were assessed by quantitative real-time PCR (qPCR) and proteins were semi-quantified by western blot (WB). Immunohistochemistry (IHC) was performed in samples from 12 patients. Mann-Whitney *U*-test, ANOVA and Spearman's correlation tests were applied to assess the statistical differences and relationships between groups.

Results: RASS1A mRNA and protein levels were ca. 3× and 4× decreased in tumor tissues, respectively, in comparison to morphologically unchanged colon. On the contrary, YAP1 mRNA and protein levels were ca. 3× and 2× increased in tumor tissues, respectively. Negative correlation between RASSF1A and YAP1 protein levels was observed in tumor samples. Under-expression of RASSF1A and over-expression of YAP1 were associated with TNM staging and G grading of CRC. IHC revealed weak-to-moderate immunopresence of RASSF1A in cytoplasm of tumor cells and moderate-to-strong immunoreaction of YAP1 in cytoplasm and nuclei of tumor cells.

Conclusions: We confirmed the involvement of RASSF1A and YAP1 proteins in CRC progression. The relationship between YAP1 and RASSF1A levels in tumor cells may be noticed as interesting new possibility in cancer chemotherapy.

Serum nitiric oxide concentration as a marker of oxidative stress in adult celiac patients and the potential role of oral vitamin E in reducing celiac oxidative imbalance

prezentacja ustna

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Introduction: Oxidative stress with an excessive free radical production and a reduction in the activity of protective antioxidants is considered as one of the mechanisms responsible for gluten toxicity. However, its role in celiac disease (CD) is unclear. Considering that oxidative stress is involved in the molecular mechanisms of CD, the additional effect of such antioxidants as vitamin E on oxidative imbalance may prove to be an effective adjuvant therapy, besides a rigorous gluten free diet.

Aim: The primary aim of the study was to evaluate oxidative imbalance in the pathomechanism of CD by determining the concentrations of nitric oxide (NO) as a marker of oxidative stress and serum levels of vitamin E as a serum antioxidant in adult celiac patients. The secondary objective of this study was to assess alterations in serum levels of NO after treatment with oral vitamin E.

Material and methods: The study involved 197 adult patients: 53 patients with untreated active CD, 92 celiac patients on gluten-free diet and 52 controls. The serum levels of NO and vitamin E were measured. In each patient, serological and histopathological activity of CD was also evaluated. A total of 18 patients with treated celiac disease took oral vitamin E twice a day at a dose of 400 mg. The serum concentrations of NO were determined before and after vitamin E supplementation.

Results: NO levels were higher in patients with active CD than in controls (86.4 ±61.4 vs. 56.8 ±37.3, $p < 0.01$) and were correlated with the degree of mucosal damage ($R^2 = 0.04$; $p = 0.01$). Vitamin E levels were decreased in treated and non-treated celiac patients (41.1 ±36.8 vs. 48.1 ±20.8 oraz 37.3 ±32.1 vs. 48.1 ±20.8, respectively, $p < 0.01$). The mean serum concentration of NO was reduced in patients after treatment with oral vitamin E in comparison with the result before supplementation (99.28 ±47.42 vs. 66.51 ±45.97, $p < 0.05$).

Conclusions: Oxidative imbalance may be involved in the pathomechanism of CD in adults. Gluten free diet only partially reduces oxidative stress. Serum NO levels seem to be a marker of the effectiveness of treatment. The additional effect of antioxidants such as vitamin E on oxidative imbalance may prove to be an effective adjuvant therapy, besides a gluten free diet by reducing oxidative stress.

Sekcja 7. *Varia*

Prophylaxis and treatment of venous thrombosis in patients with inflammatory bowel disease

prezentacja ustna

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Introduction: It has been documented that inflammatory bowel disease (IBD) patients have elevated risk of venous thrombosis (VT) compared to the general population.

Aim: To present updated recommendation for prevention and management of VT in patients with IBD.

Material and methods: Medline and Embase were searched for relevant studies.

Results: Anticoagulant prophylaxis with low molecular-weight heparin (LMWH, 4000 UI *s.c.* once daily), low dose of unfractionated heparin (UH, 5000 units twice daily) or fondaparinux is recommended. Primary prophylaxis for all hospitalized IBD patients with moderate – severe flare and even in those in remission is advocated. In period of severe bleeding mechanical prophylaxis is temporally advisable. Posthospitalization prophylaxis extended for 4 weeks is suggested in patients with IBD undergoing major abdominal surgery, especially emerged colectomy. For each outpatient with active IBD, the absolute risk of VT should be evaluated to assess adjunctive risk factor. It has been evidenced that IBD patients are in increased risk of recurrent VT. Secondary prophylaxis in IBD patients should be applied in hospitalized IBD patients, or in planned surgery. For IBD outpatients with a history of VT who did not received anticoagulant therapy, it is useful to begin anticoagulant thromboprophylaxis during disease flare. For patients with IBD in clinical remission from their first experience of VT, and in the absence of another provoking risk factor, it is indicated indefinite anticoagulation treatment with periodic decision analysis. In similar cases, if there is reversible risk factor, anticoagulation therapy for at least 3 months until risk factor has subsided is recommended. In patients with active IBD in the first event of VT anticoagulation therapy should be continued until a 3 months remission period has been obtained. It is suggested to screen for hereditary genetic abnormalities in patients with IBD with a history of VT, with a familiar VT history, or myocardial infarction, or stroke before the age of 50 in first degree relatives. The rate of

major and minor bleeding was not significantly higher in the group who received pharmacological VT prophylaxis compared to those who did not.

Conclusions: Evidence from IBD studies recommends many approaches to the management of VT. However there are no prospective clinical trials addressing specifically VT prophylaxis and treatment in patients with IBD.

The content of medium chain fatty acids (FAs) and saturated fat in a diet affects gastrointestinal motility in mice possibly through FABP4-dependent pathways

prezentacja ustna

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Introduction: Dietary interventions are gaining popularity in terms of alleviating symptoms experienced by patients with irritable bowel syndrome (IBS). Available strategies rely on low intake of foods high in short-chain carbohydrates, dairy products, wheat, spices etc. It is also recommended to reduce the intake of high fat products since they can delay gastrointestinal (GI) transit. However, the actual assessment of which type of fatty acids (FAs) is responsible for the observed effect has not been performed so far. Fatty acid binding protein 4 (FABP4), which regulates lipid transport and turnover has been recently identified in Paneth cells but its role in the intestines is still unknown.

Aim: To determine the differences in lower GI motility in mice exposed to diet enriched with either medium chain fatty acids (MCFAs) or saturated fat, and verify the effect of each diet on the expression of FABP4 in selected mouse tissues. To measure FABP4 expression in IBS patients.

Material and methods: Mice were fed with control diet (CTRL), and diet supplemented with 7% coconut oil (COCO, rich in MCFAs) or 7% lard (HF, abundant with saturated fat) for 30 days. The body weight (BW) and food intake were measured throughout the experiment. The effect of diet on mouse GI motility was assessed in fecal pellet output (FPO) and colon bead expulsion tests. The expression of FABP4 in selected mouse tissues was evaluated by ELISA and real-time PCR assays. The expression of FABP4 at the protein level was also assessed in the serum samples of IBS patients and control individuals.

Results: COCO significantly delayed GI transit, whereas HF caused its significant acceleration when compared to CTRL in the FPO test. No changes in food intake and BW gain were noted between the groups. The expression of FABP4 at the protein level in white adipose tissue (WAT) in COCO-treated group was significantly higher than in CTRL group. The translational studies showed a significant decrease in FABP4 expression at the protein level in serum samples from IBS patients, independently of the type of IBS.

Conclusions: Alteration in the dietary FA content induces marked effects on GI motility in mice. This effect may be dependent on the level of FABP4 in the WAT. Changes in the expression of FABP4 in human samples indicate its possible role in the course of the disease. Available data and the results obtained herein can serve as a step towards establishing novel dietary recommendations for IBS patients.

The effect of physical exercise on oxidative stress and healing during experimental colitis in obese animals

prezentacja ustna

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Introduction: Inflammatory bowel diseases (IBDs) are a heterogeneous group of disorders exhibited by two major phenotypic forms: Crohn's disease and ulcerative colitis. Many details of the mechanism of de-

velopment of colitis are still unknown. Transformations of reactive oxygen species and their high reactivity play an important role in the pathogenesis of many diseases. The role of physical exercise as an element supporting the pharmacotherapy of colitis is underestimated and the effect of a high fat diet on the course of inflammation is unknown.

Aim: To determine the role of physical exercise and a high-fat diet in the course of experimental colitis and to identify changes in the mucosal blood flow and the level of factors involved in oxidative stress in the damaged mucous membrane of the colon.

Material and methods: Animal studies were carried out on male C57BL/6J mice. An *in vivo* experimental model of colitis by intrarectal administration of 2,4,6-trinitrobenzenesulfonic acid (TNBS) was developed. The animals were divided into two groups: receiving high-fat and normal diets and then subjected to physical exercise for 6 weeks. After this period, damage to the intestinal mucosa was caused.

Results: An increase in intestinal blood flow and in healing of intestinal mucosal damage in animals subjected to physical exercise was observed as well as a decrease in these parameters in non-training animals subjected to a high-fat diet. The results were accompanied by changes in the MDA + 4HNE, GSH and SOD level profile.

Conclusions: Obesity caused by a high-fat diet delays the healing of colitis. Physical activity shows beneficial effects on the change in the profile of indicators involved in oxidative stress. These results are an important argument for emphasizing the role of moderate physical exercise and proper diet in the prevention of gastrointestinal diseases and may be used in supplementing pharmacological therapy of colon diseases.

Quality of life of patients in the course of gastrointestinal diseases. Mediating role of disease acceptance

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Introduction: Irritable bowel syndrome (IBS) and inflammatory bowel diseases, such as ulcerative colitis (UC) and Crohn's disease (CD) are chronic conditions that are characterized by severe intestinal symptoms and other general symptoms, which impede daily functioning and affect the quality of life of patients. According to the data published by Lovell and Ford (2012). the number of patients suffering from them is constantly increasing, especially in developed countries, which makes these disorders a global problem. The significance of psychological factors in the disease development and therapy is emphasized, as they can play a protective role and improve the sense of satisfaction with life of patients (Regueiro, Greer & Szigethy, 2017).

Aim: To analyze the assumed impact of accepting the disease on the relation between an important personal resource, which is believing in one's self-efficacy, satisfaction with life and components of the quality of life.

Material and methods: The study group consisted of 104 patients (N = 104), 58 women and 46 men, the mean ± SD age of participants was 32.56 ±11.04 years. All of them were diagnosed with chronic gastrointestinal diseases. For empirical studies, appropriately selected methods were used, such as: self-survey to measure the sociodemographic variables, the Generalized Self Efficacy Scale (GSES), the Acceptance of Illness Scale (AIS), the Satisfaction with Life Scale (SWLS) and rating questionnaire to measure quality of life – SF-36v2.

Results: The study results revealed that those patients, depending on their diagnosis, did not differ in their level of sense of satisfaction with life or the quality of life, or in terms of their level of the generalized self-efficacy. There was a statistically significant difference between the groups in terms of disease acceptance, where the patients with IBS demonstrated a higher level of acceptance than those with UC. Moreover, the study revealed that accepting the disease acted as a total mediator for the relation between the lower-degree pain sensation and its influence on daily functioning, and a partial mediator of the relation between the generalized self-efficacy and satisfaction with life, vitality, social functioning and mental health in general.

Conclusions: Obtained results allow to create an effective therapeutic program focused especially on the role of the acceptance of illness, that will support the treatment of patients with IBS, UC or CD.

Prevalence of *Blastocystis hominis* in symptomatic and asymptomatic patients in Lower Silesia, Poland

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Introduction: *Blastocystis hominis*, an unicellular eukaryotic protozoan, is one of the most common parasite found in humans and many other hosts. *Blastocystis* have been isolated from humans and many species of animals. In humans 9 genetic subtypes of Blastocystis has been determined. Little is known about life cycle and transmission of this parasite. *Blastocystis* species has been extensively studied in recent few years to establish its pathogenicity. The differentiation in morphology makes it difficult to define universal diagnostic standards. The clinical symptoms of *B. hominis* infection are nonspecific and include diarrhea, nausea, abdominal pain, cramps, bloating and vomiting. Some studies indicate the potential role of *Blastocystis* in irritable bowel syndrome (IBS).

Aim: To determine the prevalence of *B. hominis* in stool specimens in 72 patients suffered from various diseases of the digestive system and 80 healthy people (totally 152 people).

Material and methods: Stool specimens were analysed using xenic in vitro culture (XIVC) with a modified Jones' medium and molecular methods (PCR). Gene fragment of SSU-rRNA was amplified with forward primer RD5 (5′-ATCTGGTTGATCCTGCCAGT-3′) and reverse primer BhRDr (5′-GAGCTTTTTAACTGCAACAACG-3′).

Results: *Blastocystis hominis* was found in 34 (30%) study participants. Infection rates for *Blastocystis* were 27 (37.5%) and 17 (21%) in symptomatic and asymptomatic patients, respectively. Molecular subtyping revealed subtypes: ST1, ST2, ST3, ST4 and ST7.

Conclusions: The role of *Blastocystis hominis* has not been clearly defined. This preliminary study shows high prevalence of *B. hominis* patients suffered from diseases of the digestive system and indicate, that proper diagnosis and identification is necessary to the concept of proper treatment.

Mechanisms of gastroprotective adiponectin action during ischemia and reperfusion, involving sensory afferent nerves and nitric oxide production

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Introduction: Adiponectin is a peptide, produced by adipocytes, exhibiting beneficial metabolic action through lipids and carbohydrates metabolism stimulation, as well as anti-inflammatory action. In our investigations, we focus on the determination of adiponectin role in gastric ulcer healing, in of ischemia – reperfusion conditions (I/R). Acute damage of gastric

mucosa make an important clinical problem. However the participation of ROS generation, lipid peroxidation products and involvement of NO and sensory afferent nerves in action of adiponectin remains unknown. Next important factor, which takes part in gastric damage pathogenesis is gastric acid secretion, controlled by hormone: gastrin. However participation of above mentioned factors in adiponectin action on gastric mucosa has been little studied.

Aim: The aim of our investigations is explanation details of interplay between adiponectin and capsaicin – sensitive afferent nerves, endogenous production of NO, biological effect of ROS action, expressed by lipid peroxidation products and gastric acid production in action on gastric mucosa during I/R.

Material and methods: Experiments were caried out on male Wistar rats and the area of gastric lesions was measured by planimetry. Colorimetric assays were used to determine gastric mucosal levels of malondialdehyde (MDA) and 4-hydroxynonenal (4-HNE). High doses of capsaicin were used to inactivate sensory nerves. Some animals were equipped with gastric fistulas to measure gastric acid output.

Results: Results of our experiments exhibited protective role of adiponectin to gastric mucosa, revealed by decrease of gastric area and increase of gastric blood flow (GBF). Blockade of endogenous NO production reverses these effects, additional application of L-arginine restored protective effect of adiponectin. Capsaicin denervation also impeded beneficial action of adiponectin in I/R model, restored by application of CGRP. Adiponectin dose – dependently decreased MDA and 4-HNE, as well as acid gastric secretion, with accompanied rise in gastrin, in I/R model.

Conclusions: Adiponectin, administered intravenously, exerted gastroprotective effect against ischemia/reperfusion – induced gastric lesions (I/R), through mechanism involving decrease of lipid peroxidation (MDA + 4-HNE), gastric acid secretion, as well as via endogenous NO production and action capsaicin – sensitive afferent nerves.

Increase of antioxidative potential during carbon monoxide action in experimental damage of a stomach

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in I/R model, restored by application of CGRP. Adiponectin dose – dependently decreased MDA and 4-HNE, as well as acid gastric secretion, with accompanied rise in gastrin, in I/R model.

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Zaburzenia stanu odżywienia w gastroenterologii

Malnutrition, obesity, and the efficiency of treating malignant cancer of the digestive system

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The nutritional status is a significant problem in the oncological practice. The influence of the mechanism of a high content of fat tissue on the development of cancer disease is very complex. It is thought that the high content of body fat tissue stimulates an excessive production of pro-inflammatory cytokines (including the tumour necrosis factor α (TNF-α) and interleukins 6 (IL-6) responsible for cell proliferation and damage to genetic material, which projects onto an active carcinogenesis process. According to the International Agency for Research on Cancer (IARC), both overweight, obesity, and malnutrition are connected with a high mortality rate, and are a bad prognostic factor in the majority of cancer diseases (including colon cancer, breast cancer or kidney cancer). An excessive body weight may contribute to prolonging the life of a person suffering from cancer, which is called "the obesity paradox". However, it has not been possible to determine the cause for this phenomenon until now. It has also been observed that the body mass index (BMI) is not a reliable survival rate as it does not evaluate the composition of a body weight and its components (including the visceral adipose tissue or the lean body mass) which are more precise prognostic factors. Independently of the starting content of muscle mass, its decrease in the course of cancer is connected with a reduction in the total survival time even in the patients with a high, starting content of the skeletal muscle mass. This emphasizes a significant interaction of a body composition with an inflammation process, which influences the immunity of an organism, and the metabolism and growth of a tumour significantly. The analysis of a body composition ought to become a standard element of oncological care. It will be possible to apply the right nutrition intervention which will decrease the risk of malnutrition analyzing the quantitative changes in the body composition of a patient on an a day-to-day basis. Sarcopenia and sarcopenic obesity occur in oncologic patients very often; and these are connected with a higher toxicity of chemotherapy and mortality in general. One ought to draw attention to the fact that physical activity affects the composition of a body, and systematic activity increases muscle mass sensitizing metabolic and hormonal tracks. As research shows, patients with cancer and the ones who have beaten cancer do not undertake physical activity. Retaining or increasing the mass of skeletal muscles can bring clinical benefits by improving the tolerance of conducted anti-cancer treatment, reducing the risk of a disease relapse; and constant monitoring of the state of a patient's nutrition can facilitate the choice of pharmacological treatment and carrying out therapy with a diet significantly. Analyzing the factors of the occurrence of cancer, one way to diminish the risk of the occurrence of cancer is certainly leading a healthy lifestyle, and the analysis of the components of a body composition including the prevention and treatment of obesity; while a more precise control and analysis of the components of a body composition at the stage of a cancer disease seem to be connected with the improvement of the indicators of the systemic health condition of a patient.