Symposium 218

Current Challenges of Inflammatory Bowel Disease

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Symposium 218

CURRENT CHALLENGES OF INFLAMMATORY BOWEL DISEASE

Mexico City, Mexico
March 6 – 7, 2020

Scientific Organization:
J.K. Yamamoto-Furusho, Mexico City (Mexico)

Scientific Co-Organization:
M.T. Abreu, Miami (USA)
F.J. Bosques Padilla, Monterrey (Mexico)
F. Gomollón, Zaragoza (Spain)
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F.J. Bosques Padilla, Monterrey

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Session I

Emerging epidemiology of IBD worldwide
The old world of Europe: Has the incidence and prevalence of IBD stabilized?

P. Munkholm
Department of Gastroenterology, North Zealand University Hospital, Copenhagen, Denmark

Gold standard epidemiology data on the disease course and prognosis of patients with inflammatory bowel disease (IBD) are based on unselected population-based cohort studies. The incidence of ulcerative colitis (UC) and Crohn’s disease (CD) has increased overall in Europe from 6.0 per 100,000 person-years in UC and 1.0 per 100,000 person-years in CD in 1962 to 9.8 per 100,000 person-years and 6.3 per 100,000 person-years in 2010, respectively. The highest incidence of IBD is found on the Faroe Islands. Overall, surgery rates have been declining over the last decades, partly due to aggressive medical therapy.

Among IBD patients, mortality risk is increased by up to 50% in CD when compared to the background population, but this is not the case for UC. In CD, 25–50% deaths are disease-specific deaths, e.g. malnutrition, postoperative complications and intestinal cancer. In UC, disease-specific causes of deaths include colorectal cancer (CRC), and surgical and postoperative complications. The risk of CRC and small bowel cancer is increased two- to eightfold among IBD patients. Various subgroups carry increased risk of malignancy, e.g. those with persistent inflammation, long-standing disease, extensive disease, young age at diagnosis, family history of CRC and co-existing primary sclerosing cholangitis. The risk of extraintestinal cancers, including lymphoproliferative disorders (LD) and intra- and extrahepatic cholangiocarcinoma, is significantly higher among IBD patients.

Conclusion: In recent years, self-management and patient empowerment, combined with evolving eHealth solutions, has utilized epidemiological knowledge on disease patterns and has been improving compliance and the timing of adjusting therapies, thus optimizing efficacy by individualizing medication in the community setting. The incidence and prevalence is overall still rising.
How studying immigrants can edify the epidemiology of IBD

G. Kaplan
Division of Gastroenterology and Hepatology, Inflammatory Bowel Disease Clinic, Cumming School of Medicine, University of Calgary, Calgary, AB T2N 4Z6, Canada

IBD is a disease of modern times. IBD emerged following the industrialization, urbanization and Westernization of society. During the 20th Century, the incidence of IBD dramatically increased in Western countries of North America, Europe and Australia. Since the turn of the 21st Century, incidence rates have shifted with the majority of Western countries reporting stable or falling incidence. However, after decades of rising incidence, disease burden remains high as prevalence surpasses 0.3% in North America and Europe. In Canada, the prevalence of IBD is 0.7% of the population in 2019 and is forecasted to rise to 1% of the population by 2030. Over the next decade, gastroenterology clinics in the Western world will transform as healthcare providers contend with caring for considerably more patients with IBD – including younger newly diagnosed patients as well as older patients with longer disease duration and comorbidities of advancing age.

First generation offspring of immigrants from low prevalent regions to high prevalent countries have an elevated risk of developing IBD. Moreover, newly industrialized countries in Asia and Latin America whose societies become increasingly westernized and urbanized are mirroring the progression of IBD in the Western world just shifted forward in time.

The changing global burden of IBD over the next decade will require a two-pronged solution that involves research into interventions to prevent IBD and innovations in the delivery of care to patients with IBD. Future research should focus on identifying environmental risk factors observed during the early stages of industrialization of society and among offspring of immigrants in order to highlight avenues to prevent the development of IBD.

References:
Epidemiology of IBD in Asia

Z. Ran
Division of Gastroenterology and Hepatology, Key Laboratory of Gastroenterology and Hepatology, Ministry of Health, Shanghai Inflammatory Bowel Disease Research Centre, Shanghai Institute of Digestive Disease, Renji Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai 200001, P.R. China

Inflammatory bowel disease is an autoimmune disease involving the intestines. Although the overall incidence of inflammatory bowel disease in Asia is lower than in the West, the incidence rate in Asia has been increasing year by year in recent years. This situation also exists in other newly industrialized countries and some developed countries. Asian IBD may be more severe than the Western countries. Compared with the Western countries, the incidence of men with Crohn's disease in Asia is higher, lower obesity rates, extra-intestinal manifestations of ulcerative colitis are less frequently, and older onset patients with ulcerative colitis have a worse prognosis. Differences in genetic background and environment may lead to these differences. Some genes associated with drug adverse events are also different. For example, TPMT variants have fewer carriers than Western ones, while NUDT15 variants have more Asian carriers. Historically, ulcerative colitis was more common in Asia than Crohn's disease. This situation is changing with the development of industrialization. The incidence of inflammatory bowel disease varies in Asia-Pacific countries. Incidence and prevalence data are still lacking in most cities, including newly industrialized countries. In areas with high population densities, the incidence of inflammatory bowel disease appears to be higher. In China, the incidence of inflammatory bowel disease is positively correlated with gross domestic product. These East-West differences and new findings provide more opportunities and challenges for us to study the pathogenesis of inflammatory bowel disease in Asia.
Rising incidence of inflammatory bowel disease in Mexico and Latin America?

J.K. Yamamoto-Furusho
Inflammatory Bowel Clinic, Department of Gastroenterology, National Institute of Medical Sciences and Nutrition, Mexico City, Mexico

Inflammatory bowel diseases (IBD) includes ulcerative colitis (UC) and Crohn’s disease (CD) that are chronic, relapsing disorders of the gastrointestinal tract of unknown etiology. More than 2 million Europeans and 1.5 million North Americans have IBD, however, the incidence has stabilized in the west, but prevalence increased because of improved survival. Recent studies have reported a rapidly rising incidence rates in newly industrialized countries in eastern Europe, Asia, Middle east and Africa, which are likely yet to peak, but lower prevalence. This increasing incidence in recent years has led experts to consider IBD, an expanding global health problem worldwide.

A recent cohort study published in Mexico has shown an important increased of the incidence of IBD from 0.05 to 0.21 per 100,000 person-years; UC from 0.04 to 0.16 per 100,000 person-years and for CD from 0.01 to 0.04 over the past 15 years (2000–2015). On the other hand, the prevalence rates of IBD, UC, and CD were 1.83, 1.45, and 0.34 cases per 100,000 person-year respectively. It is important to note that diagnosis increased 5.9-fold for IBD, 5.3-fold for UC, and 9.5-fold for CD in the same period of time in Mexico. The findings of this study revealed that UC is 4 times more frequent than CD in the Mexican population.

There are two recent systematic reviews, incidence and prevalence of IBD have been steadily increasing in Latin America and the Caribbean, so the incidence ranged from 0.74 to 6.76/100,000 person-years for UC and from 0.24 to 3.5/100,000 person-years for CD. The prevalence rate ranged from 0.99 to 44.3/100,000 inhabitants for UC and 0.24 to 16.7/100,000 inhabitants for CD in Latin America. The ratio of UC:CD exceeded 1 in all regions throughout Latin America and the Caribbean with the exception of Brazil.

Finally, it is important to let you know that the Pan American Crohn’s and Colitis Organisation (PANCCO) is performing the first study in several countries from Latin America and Caribbean, where its preliminary results have demonstrated an increased in the diagnosis frequency of IBD in the last decade as well as the clinical heterogeneity of IBD between both regions, demonstrating a predominance of CD over UC, and more aggressive clinical course of CD in the Caribbean region compared to UC predominance and mild clinical course of IBD in Latin American countries.
Session II

Monitoring tools in IBD
Serological and fecal biomarkers

M.C. Dubinsky
The Susan & Leonard Feinstein IBD Clinical Center, New York, NY 10029, USA

In both clinical practice and trials setting, monitoring disease activity in IBD patients is based on clinical symptoms with an emphasis on altered bowel habits and abdominal pain. Unfortunately, relying on subjective symptoms alone may lead to management errors. Endoscopy remains the gold standard objective measure of disease activity assessment, but is not ideal for repeat monitoring due to the invasive nature, high costs and small but significant risk of associated complications. As a result, surrogate biomarkers of inflammation, including fecal calprotectin (FC), and C-reactive protein (CRP) have emerged as a somewhat reliable indirect measure of inflammation, but its suboptimal testing characteristics do not allow for it to replace endoscopy. This was also confirmed at a population level in recent UC clinical trials with the accuracy of FC at diagnosing mucosal healing being close to 80%. Based on the “treat to target” strategy, mucosal healing has been identified as primary treatment target, however, assessment typically involves frequent endoscopy, which is limited by high costs and associated complications. Fecal calprotectin and CRP are often often being used as a non-invasive alternative to endoscopy but its accuracy in diagnosing mucosal healing remains suboptimal and the search for the most precise cut off value continues. The Selecting Therapeutic Targets in Inflammatory Bowel Disease (STRIDE) initiative involved expert consensus to identify treatment targets for IBD and initially described non-invasive biomarkers as surrogates of inflammation but not a target. This however has been recently challenged suggesting that treatments may be adjusted based on biomarkers. Attempts to develop the best biomarker predictors of mucosal healing continues and advances in technology had led to studying whether there is a non-invasive way to quantitate the biology changes happening in the mucosa in response to therapy.
Chromoendoscopy vs. digital technology for the detection of lesions and dysplasia in UC patients

A.S. Cheifetz
Harvard School of Medicine, Center for Inflammatory Bowel Disease, Beth Israel Deaconess Medical Center, Boston, MA, USA

Patients with inflammatory bowel disease (IBD) affecting at least one-third of their colon are at an increased risk for colorectal cancer (CRC) when compared with the general population. There are numerous societal guidelines that recommend screening for dysplasia and CRC in this high risk population. Though high-definition white light endoscopy (HDWLE) with four-quadrant biopsies every 10 cm (minimum 32 samples) remains the standard of care, dye spraying chromoendoscopy with targeted biopsies is advocated by some as superior. Newer advances in technology have led to virtual chromoendoscopy, including including narrow band imaging, iSCAN, fuji intelligent color enhancement, autofluorescence imaging, and confocal microscopy, which may also improve detection rates of dysplasia in patients with IBD. A recent systematic review and network meta-analysis of different dysplasia detection techniques suggested there was some evidence (albeit low – very low quality) to support dye-spraying chromoendoscopy over standard-definition white light endoscopy (SDWLE), and HDWLE or NBI over SDWLE. They also suggested that very low quality evidence supported the use of chromoendoscopy over HDWLE or NBI. However, as they note, the data was quite limited.

At this point in time, the most vital aspect of screening and surveillance colonoscopies is a close visualization of the mucosa as several studies suggest that most IBD-associated dysplasia is visible. Ensuring an excellent prep and careful inspection of the colon is critical. Dye-based chromoendoscopy with methylene blue or indigo carmine and virtual chromoendoscopy are newer methodologies that appear to be as good as white light colonoscopy with random biopsies; and they allow for fewer biopsies. Dye-spray chromoendoscopy does appear to be superior in cases where HDWLE is not available. There appears to be little evidence to support dye-spray chromoendoscopy over HDWLE or virtual chromoendoscopy. Further prospective, randomized controlled trials and comparative effective research studies are needed to determine the best methodology for screening for dysplasia and CRC in IBD.
What radiological tool is better in Crohn’s disease patients?

J. Rimola
Department of Radiology, Hospital Clinic de Barcelona, Barcelona, Spain

Cross-sectional imaging technology using enterography protocols (either computed tomography enterography [CTE] or magnetic resonance enterography [MRE]), or bowel ultrasound is able to identify inflammatory lesions on the bowel and quantify transmural structural damage related to Crohn’s disease (CD).

Although there are some advantages of one technique over the others to explore the intestine, usually the final decision of choosing one technique is ultimately determined by local expertise and availability. Sensitivity and specificity of all techniques for the detection of active intestinal inflammation on CD has been reported to be over 90% in particular for severe inflammatory lesions. Cross section modalities may indentify inflammation in regions inaccessible to standard ileocolonoscopy, they are superior to demonstrate penetrating disease, and provides relevant information for the treatment optimization on strictureing lesions. Recent evidence supports the use of cross-section, in particular MRE and bowel ultrasound, as alternative to ileocolonoscopy for the detection of activity. Nevertheless, there is less evidence on the use of cross-section imaging for CD monitorization, to establish treatment goals or to correlate with clinical outcomes.

The main objectives of this lecture are:

1. To review the strengths and limitations of different cross-sectional imaging techniques available in clinical practice and in research for monitorization of CD
2. To review the evidence supporting the use of cross-section imaging for detecting active CD and for its monitorization
Does histological remission matter – View of a pathologist also on neoplasia

M. Vieth
Institut für Pathologie, Klinikum Bayreuth, Germany

A few decades ago a pathologist needed to differentiate ulcerative colitis and Crohn’s disease and eventually also whether neoplasia but not much more. Today a pathologist needs to differentiate from IBD a lot more: bacteria, superinfection, virus, parasites, toxic, radiogenous, collagenous, microscopic, drug induce, ischaemic, pseudomembranous, imitators, AIDS, protein-sensitive and treatment with biologicals forms of colitis. Unfortunately ill-defined criteria how to diagnose are available histologically, only.

A major issue is that symptoms don’t correlate with inflammation nor endoscopy nor histology. There is a known poor correlation between symptoms and mucosal inflammation.

A normal histology does not contain neutrophilic granulocytes as sign of an active inflammation. The safety of a histological diagnosis increases with a proper biopsy technique and clinical history. In 15% of adults suffering from IBD a diagnosis of indeterminate colitis is made. In children this fraction increases up to 30% according to the literature. Even if it is clear that children may not show the full spectrum of mucosal changes histologically like an adult suffering decades from IBD this percentage is definitively too high. In Bayreuth there are less than 1% of cases that are diagnostically unclear in the beginning.

Endoscopically there are several classifications available to assess the severeness of the inflammation. Histologically there are even more classification schemes available that cannot be transferred easily into each other. More pragmatic schemes are not widely used.

Interestingly stromal reactions are not that all assessed in classification systems for IBD. There is a lack of definition what mucosal healing should be based on: symptoms, biomarkers, endoscopy, histology or maybe combinations. On one hand it is known that mucosal healing (independently from the exact definition) is related to longer remission phase, less hospitalization, less operations, better quality of life, lesser risk of developing colorectal cancer. On the other side it is known from the literature that mucosal healing is no good predictor after one year for the prognosis.

It needs to be noted that mucosal healing is associated with a more favorable course of the IBD but still it is not clear how mucosal healing should be defined. The main problem is that a lack of controlled studies that show advantage of endoscopy/histology based definitions is hampering directly the possibility of a widely accepted definition.
From UK databases by Rutter et al. it is evident that within 3 decades the number of neoplasms decreases most probably to better control of the inflammatory reactions. Such decrease has not yet been reported for Germany. The reason may be that in Germany we are still faced with a prevalent wave of lesions and will hopefully see decreasing numbers of neoplasms soon.

Concerning neoplasms it needs to be noted that an international working group is working on better definitions of neoplasms in IBD that differ not on a molecular level, only but somewhat histologically, also.

In conclusion the aim of all treatment is without any doubt to decrease inflammatory mucosal reactions even if symptoms, endoscopy, and histology don’t correlate. On the other hand it is well known that “mucosal healing” – however defined – correlates with a better clinical outcome. As a basic rule the grade of inflammation endoscopical and histologically should be assessed prior to therapy and always with altered therapeutic regimes to document therapeutic changes, individually.
Session III

Conventional treatment still useful in IBD?
Patient profile for the use of 5-ASA in IBD

A.H. Steinhart
Mount Sinai Hospital IBD Centre, University of Toronto, Toronto, Canada

Therapies containing 5-aminosalicylic acid (5-ASA; mesalazine) have long been a mainstay of IBD therapy. Mesalazine/5-ASA has been produced in several delayed or controlled release formulations designed to deliver 5-ASA to the colon and other affected areas of the intestinal tract. In addition, 5-ASA can be administered as a topical rectal therapy in suppository, foam and liquid enema formulation for patients with distal colitis or proctitis. These approaches allow administration of high doses of 5-ASA to the intestinal mucosa with very few side effects.

Placebo controlled clinical trials have demonstrated the efficacy and safety of both controlled release oral 5-ASA and rectal 5-ASA therapy in the treatment of mildly to moderately active ulcerative colitis for both induction therapy and maintenance of remission. In general, when patients with active colitis respond to 5-ASA induction therapy they continue to do well on maintenance therapy. However, the utility of 5-ASA maintenance therapies following steroid induction therapy has not been consistently observed and many of these patients require some other form of maintenance therapy to reduce the risk of relapses and to minimize steroid dependency. Patients with more severe ulcerative colitis should not be treated with 5-ASA induction therapy as they are very unlikely to respond and therefore require steroids, immunosuppressants and/or biologics.

The most recent systematic reviews conclude that 5-ASA containing therapies are not effective for the induction of clinical response or remission in patients with Crohn’s disease. These reviews have also concluded that 5-ASA is not effective for the maintenance of medically-induced remission in patients with Crohn’s disease. However, systematic reviews may not identify patient subtypes that could potentially derive benefit from 5-ASA therapy and, as such, there may still be occasional instances where 5-ASA may be used for the management of Crohn’s disease. Subgroup analyses of some trials have suggested that patients with mild colonic disease may respond to 5-ASA therapy. It is possible that these are patients with a phenotype similar to ulcerative colitis. However, given the changing paradigm in the management of Crohn’s disease and recognition that it is a potentially progressive disorder, any involvement that is more extensive, severe or complicated mandates therapy with agents that provide more clearly demonstrated clinical, radiologic and endoscopic benefits and the potential to change the natural history of the disease.

References:


Topical vs. systemic steroids in IBD

A. Dignass
Department of Medicine I, Agaplesion Markus Hospital, Goethe University, Frankfurt/Main, Germany

Systemic and topical steroids have been successfully used for the treatment of IBD for more than half a century, have significantly improved the outcome of IBD patients and play still today a key role in the treatment of IBD despite better understanding of the etiopathogenesis of IBD and numerous recently emerging novel treatment options. Treatment with systemic corticosteroids provides the most rapid and effective immediate response of all currently licensed IBD medications in patients with moderate to severe UC and CD. However long-term steroid treatment causes severe, sometimes irreversible and not acceptable side effects limiting their repeated or long-term use. Systemic corticosteroids are therefore not indicated for maintenance of remission or long-term treatment. In patients with steroid-dependent or steroid-refractory IBD alternative treatment strategies are needed. Alternative strategies may encompass treatment with topically acting steroids besides numerous other therapeutic options.

Locally acting topical corticosteroids have been developed to make advantage of the significant therapeutic efficacy of steroids without or at least significantly reduced harmful adverse effects. A variety of steroids has been used as rectal preparations to treat distal UC. In the past 25 years controlled release forms of budesonide have emerged. Budesonide is characterized by a ~15-fold higher affinity to the glucocorticosteroid receptor as prednisolone and a high first pass effect of about 90% resulting in a low systemic availability and reduced adverse effects. Controlled ileal release forms of budesonide play a significant role in the treatment of mild to moderate ileocecral CD and budesonide foam and enemas in mild to moderate distal UC. The more recently licensed Budesonide MMX formulations have demonstrated significant clinical benefits in patients with mild to moderate extensive UC. Some other locally acting corticosteroid formulations like beclomethasone dipropionate or betamethasone are also used in some countries. A number of unsolved questions remain to be addressed in the future regarding optimal use of both systemic and locally acting steroids in IBD.
Role of thiopurines and methotrexate in IBD

F. Carbonnel¹,²
¹Hôpital de Bicêtre, Service de Gastroentérologie, Assistance Publique-Hôpitaux de Paris et Université Paris Saclay, 94275 Le Kremlin-Bicêtre, France
²Inserm U1018, Centre for Research in Epidemiology and Population Health, Paris Saclay University, Villejuif, France

Monotherapy with thiopurines has been shown to be more efficient than placebo to maintain medically (1) and surgically-induced (2) remission in patients with CD. Thiopurines appear to be less efficient than infliximab (either as a monotherapy or combotherapy) and adalimumab, but not different from vedolizumab to maintain remission in patients with CD (3). The superior efficacy of anti-TNF + thiopurines over thiopurines alone has been confirmed by the REACT trial (4). Monotherapy with thiopurines has been shown to be more efficient than placebo to maintain remission in patients with UC (5). In a randomized controlled trial, the combination of intravenous infliximab and oral azathioprine was more effective than infliximab or azathioprine alone in corticosteroid-free remission at week 16, in patients with active UC. However, infliximab alone was not significantly more effective than azathioprine alone for the same outcome. The combination was more effective than azathioprine alone in mucosal healing at week 16, but similarly effective as infliximab (6).

Thiopurines can be prescribed in association with biologics. The SONIC trial has demonstrated the superior efficacy of infliximab + azathioprine over either monotherapies in patients with CD (7). Although this trial included only CD patients naïve to immunosuppressants, there is a consensus that, in IBD patients, combination therapy of infliximab and azathioprine is more appropriate than infliximab monotherapy except in elderly patients and young, EBV-negative male patients with uncomplicated disease (8). The evidence is less clear for adalimumab although combination therapy with azathioprine is associated with a reduced risk of immunization. A recent trial has shown that combination therapy was superior to monotherapy in patients who received a second anti-TNF after immunization towards a first line of anti TNF. There is uncertainty as to whether association of thiopurines and vedolizumab or ustekinumab is superior to either monotherapies.

Thiopurines are associated with adverse events, such as arthralgia, fatigue, nausea, cytopenia, fever, liver function test abnormalities, infections, and small but significant increases in the risks of lymphoma and non-melanoma skin cancer. Overall, anti-TNF monotherapy appears to be better tolerated than thiopurines monotherapy (3). However, recent large-scale studies have shown that the risk of lymphoma was similar in patients with IBD treated with monotherapy with thiopurines or anti-TNF and higher in patients treated with the combination therapy (9). In addition, the risk of severe infection is higher in patients treated with anti-TNF (either in mono or in combination therapy) than with azathioprine (10).

It is possible to improve efficacy and safety of thiopurines by monitoring of 6-TGN and MMP blood levels. A threshold of 230 pmol/8 x 10^8 RBCs has been shown to be associated with a higher chance of clinical response to thiopurines. It is possible to increase the 6-TGN levels by co-prescription of thiopurines (at a reduced dose) and allopurinol. Safety of thiopurines can be improved by TPMT/NUDT15 genotypes.
(decreases the risk of neutropenia), HPV vaccinations, avoidance of sun exposure and yearly skin examination by a dermatologist.

Methotrexate monotherapy has been shown to be an efficient induction treatment in steroid-dependent CD patients (11), and in maintenance treatment of CD (12). In steroid-dependent UC, methotrexate is not superior to placebo to obtain steroid-free remission but it is for clinical remission without corticosteroids (13). A maintenance trial has failed to demonstrate the superiority of methotrexate as compared to placebo in UC (14). There is no demonstration of superior efficacy of combination therapy with methotrexate over monotherapy with anti TNF, except for reduced risk of immunization in patients with CD receiving infliximab (15). Methotrexate prescription is associated with several adverse events: nausea, vomiting, fatigue, headache, stomatitis, liver function test abnormalities, lung disease, cytopenia, infection, non-melanoma skin cancer. Methotrexate is teratogenic.

In summary, there is evidence for better efficacy and overall tolerance of anti-TNF over conventional immunosuppressants, although the risk of infection appears to be higher with anti-TNFs. Yet, the past experience with conventional immunosuppressants has shown that many patients respond to and tolerate well these drugs. In addition, it is possible to improve efficacy and safety of thiopurines by 6-TGN/6-MMP monitoring and TPMT/NUDT15 genotype. We suggest the following situations in which thiopurines or methotrexate could be prescribed and those in which they should not be prescribed.

**When to use azathioprine or methotrexate?**

*As a monotherapy*
- Maintenance treatment in CD patients with mild to moderate forms (AZA and MTX)
- Maintenance treatment in UC patients refractory/intolerant to salicylates (AZA)
- Prevention of postoperative recurrence of CD (AZA)

*In combination with biologics (AZA)*
- Infliximab: always, except in special situations (see below)
- In combination with a second anti TNF, after immunization with a first anti TNF
- Other biologics: individualized

**When not to use azathioprine or methotrexate?**

*As a monotherapy*
- In severe/fistulizing/bad prognosis forms

*In combination with biologics*
- Current or past history of cancer, elderly patients, young, EBV-negative male patients with uncomplicated disease
References:


Challenges in the management of severe ulcerative colitis

J.O. Lindsay
Barts Health NHS Trust, The Royal London Hospital, London, E1 1BB, UK
Centre for Immunobiology, Blizard Institute, Barts and the London School of Medicine, Queen Mary University of London, London E1 2AT, UK

Acute severe ulcerative colitis remains one of the most challenging scenarios in the care of patients with inflammatory bowel disease requiring co-ordination in care between all members of the multidisciplinary team. This starts with prompt recognition of the condition and careful assessment to exclude confounding diagnoses such as enteric infection. Initial patient management with IV corticosteroids has not changed in the recent past, although advances in the medical management of outpatient colitis means that patients may have been exposed to a much wider range of targeted immune suppressing therapies before admission. This highlights the importance of prompt recognition and treatment of concomitant re-activation of CMV infection.

Early recognition of steroid refractory patients is essential to plan salvage therapy and ensure timely consultation with colorectal surgeons. Although randomised controlled trials have not shown an advantage over ciclosporin therapy, Infliximab is the most commonly prescribed salvage therapy. It is important to note, that low or undetectable infliximab levels and high faecal drug loss correlate with non-response. The current turnaround time for infliximab drug levels in many centres precludes “level-based” dosing of infliximab in this scenario. Despite this, escalated dosing is used in specialist centres, although this strategy has not been assessed in adequately designed clinical trials. Patient who have previously not responded or been intolerant to infliximab require an alternative salvage strategy which can include ciclosporin. There is limited data to support the use of tofacitinib in this scenario. Close monitoring of patients on salvage therapy is required to allow recognition of non-response and timely laparoscopic sub-total colectomy to prevent the increased morbidity associated with delayed surgery.

Patients who respond to medical therapy will need ongoing maintenance therapy to prevent relapse. The appropriate strategy will depend on the drug used to induce remission as well as the prior medication history. Appropriate audit of adherence to treatment pathways and patient outcome should be embedded into the unit.
Session IV

Practical issues in the treatment of IBD with anti-TNF therapy
Top-down vs. step-up approach

E.V. Loftus, Jr.
Division of Gastroenterology and Hepatology, Mayo Clinic, Rochester MN 55905, USA

The use of tumor necrosis factor (TNF) antagonists in the management of Crohn’s disease and ulcerative colitis has evolved over the past twenty years. A “step-up approach” was used almost exclusively in the first decade of anti-TNF therapy – in other words, the vast majority of patients who started these agents had already demonstrated lack of response to or intolerance of immunomodulators such as thiopurines or methotrexate. Several studies in the late ’00s and early ’10s raised the promise of “top-down” therapy, with earlier use of anti-TNF agents in the disease course, especially in Crohn’s disease. Results suggested better outcomes for patients who received anti-TNF’s earlier in their course, as well as superiority over azathioprine monotherapy. These studies, coupled with concerns about the efficacy of azathioprine monotherapy even when used early, resulted in a fairly rapid change in practice in many countries. It is much less common nowadays in, for example, the United States, to see a patient managed with azathioprine monotherapy (unless they had initiated therapy prior to about 5–6 years ago and have stayed in remission). The most common use of immunomodulators is to prevent immunogenicity. On the other hand, in many jurisdictions globally, often where access to biologics is constrained, azathioprine monotherapy is still the most commonly used “effective” therapy for inflammatory bowel disease. Is there one approach that is “more correct”? We will review relevant studies in this regard, and I will try to remind the audience the ongoing relevance of co-administration of immunomodulators when utilizing medications such as infliximab, adalimumab, and certolizumab pegol.
Empirical optimization vs. therapeutic drug monitoring

M.T. Abreu
Crohn's and Colitis Center, University of Miami Miller School of Medicine, Miami, FL 33136, USA

Therapeutic drug monitoring has become an important part of our armamentarium in treating patients with inflammatory bowel disease on biologics. The first description of using therapeutic drug monitoring came from Mount Sinai in Toronto, where they described that patients who had Crohn's disease and were on infliximab and had detectable levels of infliximab, did better than those that did not have detectable levels. Since that time, of course, we have evolved in our thinking. We realize that certain patients have levels that are too low to be effective, whereas some have developed antibodies to these monoclonal antibody-based biologic agents. There has been debate, however, about the best utilization of these levels. Part of the debate has to do with the cost of the actual testing, but another part of the debate has to do with what to do with the results of the testing. The absolute levels that need to be achieved may be different in different patients and with different problems, e.g. fistulizing disease or severe acute colitis may need much higher levels than ileal inflammatory disease. In the presentation, we will discuss the data that supports proactive testing of therapeutic drug levels. We will discuss the support for reactive testing. We will also examine the relationship of levels to clinical response, endoscopic response, and long-term outcomes on biologic agents. We will discuss the difference in rates of immunogenicity between different biologic agents and how that might impact on the frequency of testing.
Is anti-TNF therapy for ever?

M. Duijvestein
Department of Gastroenterology & Hepatology, Amsterdam UMC, Amsterdam, The Netherlands

Tumor necrosis factor (TNF) antagonists (infliximab, adalimumab, golimumab and certoluzimab pegol) have greatly improved disease management for inflammatory bowel diseases (IBD)\(^1\)\(^-\)\(^4\) and are effective for both induction and maintenance therapy, decrease exposure to corticosteroids and promote sustained mucosal healing\(^5\)\(^,\)\(^6\). Furthermore, anti-TNF treatment have demonstrated a positive effect on extra-intestinal manifestations such as spondyloarthritis\(^7\). Clinical use can easily be optimized as optimal trough serum concentrations are known and have been demonstrated to be associated with higher rates of clinical and endoscopic remission\(^5\)\(^,\)\(^6\). Since patent expiration biosimilar monoclonal antibodies were introduced, lowering the high costs of these anti-TNF drugs and increasing their widespread use. However, up to one-third of patients do not respond to induction therapy, and of those initially responding, up to 40% ultimately lose response due to suboptimal drug exposure (e.g. caused by immunogenicity or high drug clearance), intolerance or other poorly characterized mechanisms\(^8\)\(^,\)\(^9\). Since multiple new classes of drugs have become available for IBD, such as vedolizumab (a gut-selective anti-α\(_4\)β\(_7\) integrin) and ustekinumab (an anti-interleukin 12/23) and many promising agents are in late stage development the question arises, “Is anti-TNF therapy for ever?”

The aim of this talk is to present an overview on the impact and limitations of TNF antagonists in the treatment of IBD. Methods on how to optimize the use of this therapy to maximally impact patient morbidity will be presented. Finally, a glimpse into the future will be provided to discuss the position of anti-TNF in future treatment strategies.

References:


Safety concerns of TNFα antagonists

S. Singh
Division of Gastroenterology and Division of Biomedical Informatics, University of California San Diego, La Jolla, CA 92093, USA

TNFα antagonists are the most commonly used biologic agents in the management of patients with inflammatory bowel diseases (IBD), and are very effective in inducing clinical and endoscopic remission. However, they have been associated with increased risk of serious infections, and may be associated with increased risk of hematological malignancies.

Pivotal long-term safety registries of infliximab (TREAT, ENCORE) and adalimumab (PYRAMID) have consistently demonstrated that exposure to TNFα antagonists is associated with increased risk of serious infections, as compared to treatment with conventional immunomodulator medications like thiopurines or methotrexate, with an annual incidence rate of 2.2–4.7 per 100-person years. These results have been confirmed in large scale real-world observational studies including population-based studies from France and Denmark. TNFα antagonists have also been associated with an increased risk of opportunistic infections. The most consistent risk factors for serious infections in TNFα antagonist-treated patients with IBD are older age, high disease activity at baseline, concomitant use of corticosteroids and immunomodulator agents and narcotic use. In a preliminary multi-center comparative study, risk of serious infections may be higher with TNFα antagonists vs. vedolizumab, when used as monotherapy; however, this potential safety advantage of vedolizumab may be neutralized in patients treated concomitantly with corticosteroids and/or immunomodulators.

TNFα antagonists have also been variably associated with increased risk of malignancy. Post-hoc pooled analyses of clinical trials and long-term safety registries suggest that TNFα antagonist monotherapy may not increase risk of malignancies, including lymphoma. However, when used in combination with thiopurines, TNFα antagonist-based therapy is associated with increased risk of lymphoma and non-melanoma skin cancer. Real-world large observational studies confirm that while TNFα antagonists do not appear to increase the risk of solid-organ malignancies, they may be associated with increased risk of lymphoma. In a French population-based cohort study of 189,289 patients followed over a median 6.7 years, Lemaitre and colleagues observed that, as compared to patients not exposed to any immunosuppressive therapy, TNFα antagonist monotherapy and TNFα antagonist + thiopurines, may be associated with a 2.4-fold and 6.1-fold higher risk of lymphoma, as compared to patients not exposed to immunosuppressive therapy.

Besides infections and malignancy, others important safety concerns with TNFα antagonists including risk of immediate and delayed infusion (or injection site) reactions, serum sickness syndrome and rare risk of demyelinating neurological diseases, drug-induced lupus, drug-induced liver injury and potential worsening of heart failure in patients with stage 3 or 4 heart failure.
Session V

Surgical issues in IBD
Small bowel resection versus stricturoplasty

W.A. Bemelman
Department of Surgery, Tytgat Institute for Liver & Intestinal Research, University van Amsterdam, Amsterdam, The Netherlands

Crohn’s disease can involve the complete digestive tract, but affects mostly the terminal ileum. Indications for surgery are refractory disease and complications. If it comes to surgery for small bowel or ileocolic localization, it comes down to either resectional surgery and/or stricturoplasty. Stricturoplasty could be simple or complex, but can basically include long segments of bowel. An exclusion are the patients with enteral fistula. A number of factors are important to determine the surgical strategy. It is clear that short strictures can be safely treated by stricturoplasty. However, longer segments require more complex techniques which are more technically demanding, require larger incisions, and are associated possibly with more complications. The necessity of bowel preservation needs to be weighed against the age of the patient, the remaining segment of bowel if resected, and the wish of the patient e.g. with respect to the incisional scar.
In this talk pros and cons are highlighted.
Surgery is required for approximately 20% of the ulcerative colitis and 80% of the Crohn’s disease patients despite maximal medical treatment. The procedures for the treatment of inflammatory bowel disease had been initially described as conventional open technique. In line with the recent developments, minimally invasive techniques have started to be more commonly utilized in inflammatory bowel disease surgery. Minimally invasive methods offer various benefits to the patients including decreased postoperative morbidity, shorter length of stay and decreased hernia risk. Robots also have been shown to be equally effective in inflammatory bowel disease surgery as laparoscopy with additional benefits such as improved visuality with 3-D view, increased maneuverability and better ergonomics with precise control on operating instruments.

Despite all these benefits of minimally invasive methods, proper patient selection and clinical judgment are utmost important while deciding a modality for a procedure in an inflammatory bowel disease patient. While some patients without any previous abdominal operation or complicated disease may easily be offered minimally invasive operations, some patients who had undergone multiple abdominal surgeries during their lifetime or some patients with complex Crohn’s disease or failed ileal pouches requiring salvage surgery may not be feasible for a minimally invasive approach. Thus, decision making should be tailored according to patient and disease status. In conclusion, the benefits of minimally invasive surgery must be balanced with reproducible and durable outcomes, and ultimately, regardless of the modality, optimizing the patient outcomes with improving patient quality of life must be the primary aim while operating a patient with inflammatory bowel disease.
Management of refractory pouchitis

B. Shen
Columbia University Irving Medical Center – New York Presbyterian Hospital, New York, NY, USA

Pouchitis is the most common adverse sequela in ulcerative colitis patients who have undergone restorative proctocolectomy and ileal pouch-anal anastomosis (IPAA). The presence of diarrhea, urgency, abdominal pain, and incontinence significantly impacts patients’ quality of life. While the majority of patients with acute pouchitis respond favorably to oral antibiotics. However, those patients usually develop antibiotic-dependent disease course. Approximately 25% of acute pouchitis eventually evolves into refractory disease. Chronic antibiotic-refractory pouchitis (CARP) is one of common causes for pouch failure requiring permanent fecal diversion with or without pouch excision. Most patients with CARP are male. CARP can be associated with other structural pouch disorders such as presacral sinus and anastomotic or pouch inlet strictures. The management of CARP has been challenging. We should exclude and manage secondary or exacerbating causes, such as the use of non-steroidal anti-inflammatory drugs and infections of *Clostridium difficile* or cytomegalovirus. The etiology of CARP can also result from autoimmune disease process, ischemia, anastomotic stricture with fecal stasis, excessive weight gain, or even mesh placement for hernia surgery. The primary phenotype of autoimmune-associated pouchitis is concurrent primary sclerosing cholangitis (PSC), diffuse pouchitis, and diffuse enteritis. CARP can be treated with oral or topical mesalamines, topically active corticosteroids, or biological agents. Patients with PSC-associated pouchitis/enteritis may benefit from long-term oral vancomycin in both liver and pouch/small bowel perspective. Vedolizumab is safe and effective in the treatment of CARP. The second-line biological agents for CARP include infliximab, adalimumab, and ustekinumab. The latter agents appear to be more effective for Crohn's disease of pouch. Other options for CARP include hyperbaric oxygen therapy and intravenous immunoglobulin. It appears that pouch revision surgery is not effective in treating CARP. Endoscopic therapy of concurrent anastomotic strictures may be beneficial for the treatment of CARP.
Session VI

Challenges in IBD
Management of psycho-social issues for IBD patients and their families

C.N. Bernstein
Department of Gastroenterology, University of Manitoba, Winnipeg MB R3E 3P4, Canada

Patients with IBD have an increased incidence of mood and anxiety disorders both before and after diagnosis. In fact, mood and anxiety disorders are increased in persons with IBD for at least five years prior to IBD diagnosis. This raises questions as to whether mood disorders share a biological basis with IBD the way other known inflammatory extraintestinal disorders do. Psychiatric comorbidity adversely impacts the course of IBD. Its presence can have adverse effects on medication adherence and ultimate disease course and outcomes. Even in the absence of a defined psychiatric diagnosis high perceived stress is associated with increased symptoms in persons with IBD. Since psychiatric comorbidity and especially stress are common, it is incumbent for physicians to inquire about the mental health of their patients. There are very few studies of treatment of psychiatric comorbidity in persons with IBD and hence treatment is applied as in patients with psychiatric diagnoses without IBD. Persons with IBD and psychiatric comorbidity have increased health care utilization and attention to mental health can enhance general well being and reduce health care utilization as has been shown recently in different models of care for persons with IBD that involve integrated care; referring to physicians practicing in close concert with mental health providers.

There are several social issues that are important in the course of IBD. In a health system with universal access, such as in Canada, we have recently shown that socially disadvantaged persons with IBD have worse outcomes. Workplace issues and disability are also important for persons with IBD. Persons with IBD have a higher risk of being on disability pension and long-term active disease and psychological factors are important predictors of disability. A patient’s ability to maintain work is an important contributor to well being and patients with IBD have specific needs that can reduce both absenteeism and presenteeism. Physicians should also be inquiring about patients’ work status and coping at work and provide guidance for patients when their health state is interfering with work.
In chronic pediatric diseases adolescence constitutes a very challenging situation. It is usually a difficult and challenging moment, not only due to the inherent changes this age implies in the patient but also because the majority will have a change in their healthcare providers. Transition to adult care in pediatric diseases has been defined as the purposeful planned movement of adolescents and young adults with chronic physical and medical conditions from child-centered to adult-oriented healthcare systems, and its aim should be to facilitate a continuum of care including normalization of social and emotional development, and acquisition of independent living skills. Transition is the process whereby adolescents/young adults gradually assume greater responsibility for their disease and treatment, and become independent managers of their IBD care. It is important to differentiate between transition and transfer, which is the time-point whereby young adult patients move out of pediatric care and move on to an adult doctor who takes over their medical care, and that should always be the final step and the culmination of an successful transition program. Pediatric and Adult care systems are different in many ways and transition should be an opportunity to highlight these differences with the patient and to give him the necessary tools to make this process easier.

IBD is the paradigm of chronic disease. It is a long-lasting disease with high potential for disability, a remitting and relapsing course, with unexpected exacerbations and important morbidity, social implications, psychological impact, and also with an important impact on the family functioning. Therefore, transition must be one of the main objectives for pediatric caregivers looking after IBD patients. Apart from improving the knowledge of the disease, transition is a good opportunity to normalize development, to promote independence and responsibility, to improve self-reliance and self-esteem, to improve compliance with treatment, to provide an appropriate environment for changes, and to plan long-range goals and healthy habits.

Different models of transition have been described in the literature, being local and national variability in pediatric and adult care organization the main limiting factors for developing standardized successful transition programs. In any case, transition must should never be rigid process, but should adapt to patient’s own peculiarities and disease situation, and should also take into account the different opinions and possibilities not only of the patient and the pediatric and adult physicians, but also of parents and other health professionals involved in pediatric IBD management (dietitians, psychologists, social workers…).
Telemedicine: The new medicine for IBD?

F. Gomollón
IBD Unit, Hospital Clinico Universitario “Losano Blesa”, Facultad de Medicina, Fundación del Instituto de Investigación, Sanitaria de Aragón (IIS Aragón), Zaragoza, Spain

At a first sight “tele” and “medicine” are contradictory terms: tele comes from ancient Greek and means: far, and all of us will agree that medicine should mean near. But World changes, and changes quickly, and the real key world is communication. IBD cases are increasing at a rapid rate, millions of people affected around the world. IBD are chronic diseases that may affect many parts of every-day life and prevalence is much higher than incidence as mortality is very low. All these factors make are of IBD is complex, and costly. The classic and basic physician-patient relationship is based in personal contact, but personal contact is not always possible, costs time and money (for the system, for the patient, for society) and even has a carbon footprint. In parallel with these societal changes a technology revolution is occurring, however. Billions of smartphones are available and working around the world, and even in underdeveloped regions mobile phones and smartphones are becoming readily available for all people. This new scenario has made possible thinking in telemedicine as an adjunct/substitute to classical professional-patient encounter, with the goal of improving care at a rational cost. IBD should be an ideal model as are chronic diseases, more prevalent in countries with high technological development, and affecting mostly young people with a good adaptation to modern technologies. In fact, this opportunity was first explored years ago with some tools developed for helping patients taking decisions about management (on the dose of mesalazine for instance) with the help of computer tools. The development of electronic medical records (EMR) is other very important factor in the scenario. A quick view of Internet and Literature suggests an explosion of telemedicine is ongoing with tools, apps, webpages (information, guides, advices). However, garbage is much easier to finding than diamonds, and many available resources are even dangerous. Telemedicine is a very important part of our future, but should have two key conditions: a) any advance should be implemented after methodologically sound demonstration, which in most cases means randomized clinical trials; and b) telemedicine is a complement for direct contact medicine, not a substitute for, and should include the same empathic principles. Some real advances are being implemented and we will review several examples.
Personalized medicine for the treatment of IBD

C. Fiocchi
Department of Gastroenterology and Hepatology, Digestive Disease and Surgery Institute; Department of Inflammation & Immunity, Lerner Research Institute, Cleveland Clinic, Cleveland, OH, USA

The term “personalized medicine” has become a household name not only in the field of medicine but also in the everyday social environment. While appealing and fashionable, the emergence of this term has a profound significance because is largely the result of recognizing the many shortcomings of traditional medicine in most fields, including IBD. The literature contains variable definitions for precision medicine, one of the most accurate and all-inclusive being that of the NIH Precision Medicine Initiative: "an emerging approach for disease treatment and prevention that takes into account individual variability in genes, environment, and lifestyle for each person." More important than its definition are key the questions of why we need precision medicine, what precision medicine can offer, how it can be implemented, and what results can be realistically expected, all issues critically important for IBD.

The need for precision medicine is dictated, at the pathogenesis level, by the extreme biological complexity of CD and UC, the heterogeneity of the patient population, and the unpredictability of the therapeutic interventions. In response to these enormous challenges, precision medicine can offer exact molecular, rather than phenotypical and clinical, classifications of patient subtypes based on individual molecular pathways and identification of unique molecular biomarkers. The way to achieve this exquisite level of specificity is through the adoption of integrated bioinformatics approaches based on collection of complete sets of data (big data) derived from omics analyses such as genomics, epigenomics, transcriptomics, proteomics, metabolomics, microbiomics, etc. Once data are collected analytical methods based on systems biology can be adopted to define the molecular network responsible for IBD and identify the controllers (the network molecular hubs), which then become the specific targets of computationally identified new or repositioned therapeutic agents. The specificity of this sequential approach is likely to result is an unprecedented level of clinical and therapeutic effectiveness in multiple and selective subgroups of IBD patients.

Even though the tools to implement precision medicine are at hand today, serious obstacles still exist to take full advantage of their power. These obstacles are many and include limits in patient data collection, privacy and legal issues, insurance coverage, cost and access to technological tools, essentially non-existing bioinformatic know-how in the medical community, access to and collaboration with bioinformaticians, and government oversight and investment in precision medicine. Nevertheless, these are all surmountable obstacles, and in a decade or so precision medicine for IBD will become a reality.
Session VII

New and emerging therapeutic approaches for IBD
What is the better patient profile for vedolizumab treatment?

W.J. Sandborn
Division of Gastroenterology, University of California San Diego, La Jolla, CA, USA

Vedolizumab is effective for the treatment of ulcerative colitis, including induction of clinical remission, clinical response, and mucosal healing, and maintenance of clinical remission, clinical response, steroid free clinical remission, and mucosal healing. Subgroup analyses demonstrated that patients who were naïve to biologic therapy had a greater response to vedolizumab than patients who had previously failed anti-TNF biologic therapy. Network meta-analysis demonstrated that in biologic naïve patients with ulcerative colitis, that infliximab and vedolizumab were more effective than adalimumab, golimumab, and tofacitinib. By contrast, in patients who had previously failed anti-TNF therapy, network meta-analysis demonstrated that tofacitinib was the most effective therapy, followed by vedolizumab. A head to head comparative effectiveness trial demonstrated that vedolizumab was more effective that adalimumab for maintenance of clinical remission. A clinical decision support tool demonstrated that no prior anti-TNF therapy, disease duration greater than 2 years, moderate endoscopic findings, and higher serum albumin predicted a greater response to vedolizumab. Vedolizumab is effective for the treatment of Crohn’s disease colitis, including induction of clinical remission, and maintenance of clinical remission, clinical response, and steroid free clinical remission. Subgroup analyses demonstrated that patients who were naïve to biologic therapy had a substantially greater response to vedolizumab than patients who had previously failed anti-TNF biologic therapy. Network meta-analysis demonstrated that in biologic naïve patients with Crohn’s disease, that infliximab and adalimumab were more effective than vedolizumab, ustekinumab, and certolizumab pegol. By contrast, in patients who had previously failed anti-TNF therapy, network meta-analysis demonstrated that ustekinumab was more effective than vedolizumab. A clinical decision support tool demonstrated that no prior surgery, no prior anti-TNF therapy, no prior fistulizing disease, higher serum albumin, and lower C-reactive protein predicted a greater response to vedolizumab. Vedolizumab has a very favorable safety profile, with no signal for serious or opportunistic infection or malignancy. Network meta-analysis in ulcerative colitis demonstrated that vedolizumab is safer than infliximab, adalimumab, golimumab, and tofacitinib. In conclusion, vedolizumab is highly effective in bio-naïve ulcerative colitis patients, and more effective than adalimumab. Vedolizumab is effective for inducing mucosal healing in ulcerative colitis. Vedolizumab is effective in bionaive patients with Crohn’s disease, which can be easily identified with a clinical decision support tool. The favorable safety profile of vedolizumab makes it a desirable treatment choice as first line biologic therapy for ulcerative colitis and in appropriately selected patients with Crohn’s disease.
Ustekinumab and other interleukin-23 inhibitors for inflammatory bowel disease

B.E. Sands
Icahn School of Medicine at Mount Sinai, Mount Sinai Health System, New York, USA

The introduction of anti-TNF antibodies launched a new era of biologic therapy for the inflammatory bowel diseases (IBD). Although generally effective to a degree not seen with previous agents, the anti-TNF antibodies have substantial rates of failure – both primary failure and secondary loss of response due to anti-drug antibodies and resistance to TNF blockade. Additionally, while generally safe, anti-TNF blockade is also associated with a variety of rare but potentially serious adverse effects, including life-threatening infection, lymphoma, and autoimmune phenomena. Interleukin-23 is a key cytokine that shapes adaptive immune responses, and is implicated by genome-wide association studies in the pathogenesis of IBD. Ustekinumab, an anti-p40 antibody that blocks interleukin (IL)-12 and IL-23, and a variety of anti-p19 antibodies that block IL-23 alone provide a new class of biologic agents for the treatment of IBD. Ustekinumab has been demonstrated to be effective for the treatment of both Crohn’s disease and ulcerative colitis in phase 3 trials that led to their approval to treat both conditions. Ustekinumab at a dose approximating 6 mg/kg body weight given intravenously is more effective than placebo at inducing clinical remission in patients with Crohn’s disease who are naïve to anti-TNF agents, or who have been refractory to them. A dose of 90 mg given every 8 week or every 12 weeks subcutaneously is associated with higher rates of clinical remission, clinical response, and steroid-free clinical remission among patients who responded at 8 or 16 weeks to induction dosing. Subsequent real-world cohorts confirm the efficacy of this agent to treat Crohn’s disease, and further extended the evidence to support the ability ustekinumab to achieve endoscopic and radiographic improvement. More recently, ustekinumab was demonstrated to be an effective induction and maintenance agent for patients with ulcerative colitis in who are bio-naïve or bio-experienced, including prior failure of vedolizumab. The safety of ustekinumab is excellent, with no observed increased risk of infection or malignancy over placebo, excellent tolerance, and low rates of immunogenicity. Finally, phase 2 studies of the anti-IL-23 antibodies brazikumab (CD), risankizumab (CD), and mirikizumab (CD and UC) demonstrated excellent efficacy, including excellent rates of endoscopic improvement, and safety profiles similar to placebo. Phase 3 studies of these agents, and of guselkumab, are ongoing.
JAK inhibitors: A new kid in the block

S. Ghosh
Institute of Translational Medicine, University of Birmingham, UK

Janus kinase and signal transducer and activators of transcription (JAK/STAT) pathway is an intracellular kinase pathway involved in cytokine signalling. JAKs are members of tyrosine kinase family and comprises of JAK1, JAK2, JAK3 and TYK2. JAK inhibitors (JAKinibs) have emerged as a promising new class of drugs able to interrupt inflammation by modulating the adaptive and innate immune responses in IBD. Interestingly, they can inhibit multiple cytokines at the same time with a reduced risk of immunogenicity typically associated with monoclonal antibodies. Currently there are multiple JAKinibs that are being investigated in ulcerative colitis (UC) and some others are in development. In addition, there are promising studies in Crohn’s disease (CD) after initial failure of tofacitinib. The differences among the various agents is the selectivity with which they bind across the JAK family of receptors. The newer JAKinibs are known to be more selective but in this class of drugs, the selectivity appears to be dose and tissue dependent; the selectivity also appears to be relative and not absolute.

Side effects and off-target effects are increasingly being better understood with widespread use of tofacitinib in ulcerative colitis and in rheumatoid arthritis, guiding patient choice and appropriate screening and prevention.

Pan-JAK inhibitors

Tofacitinib
Tofacitinib inhibits all four JAK isoforms (pan-JAK inhibitor) but is known to inhibit JAK-1 and JAK-3 with higher selectivity over JAK-2 and TYK-2. It is effective in ulcerative colitis but failed trials in Crohn’s disease.

TD-1473
TD-1473 is an oral pan-JAK inhibitor which is known to be locally active in the gut, thereby resulting in low serum and high gut concentrations of the drug. This is likely to improve local action with reduced systemic side effects.

Peficitinib
Peficitinib is an oral JAKinib investigated in UC that is selective for JAK3, less selective for JAK1 and even less selective for JAK2 and TYK2. In early phase trials it has demonstrated signals of efficacy in ulcerative colitis.

Selective JAK inhibitors

Filgotinib
Filgotinib is an oral selective JAK1 inhibitor which has been studied in other chronic inflammatory conditions like rheumatoid arthritis. It has been investigated in a phase 2 trial in Crohn’s disease with signals of efficacy.
Upadacitinib
Upadacitinib is an oral selective JAK1 inhibitor. The drug was first assessed for safety and efficacy in multicentre, randomized, double-blind, placebo-controlled phase 2 studies for induction and maintenance therapy in subjects with moderately-to-severely active UC and CD, with signals of efficacy.

Itacitinib
Itacitinib is an oral selective JAK1 inhibitor which has been used in trials studying the treatment of various conditions including ulcerative colitis.
Future therapeutic targets in IBD

S. Schreiber
Department of Internal Medicine, Christian-Albrechts-University, UKSH, Kiel, Germany

The evolution of therapies in IBD has reached enormous speed. After more than a
decade of anti TNF therapy, vedolizumab (focused inhibition of α4β7 integrin) and
ustekinumab (neutralization of IL-12 and II-23 through neutralization of the p40 protein
shared by both cytokines). However, all such therapies result in 30–40% of efficacy at
most, if remission is assessed and much less if disease control is the target.

New therapies that are in advanced stages of development include antibodies directly
targeting IL-23 (i.e. the p19 protein that is specific for this cytokine). A blockade of
IL-23 has been much superior to the simultaneous inhibition of IL-12 and II-23 in
psoriasis and first data showing efficacy against placebo have been produced in both
CD and UC. Therefore, the interest in this new therapy, which has no or very limited
side effects, is very large and four different monoclonal antibodies are in development.

After approval of tofacitinib, a pan-JAK inhibitor for UC several more selective inhibitors
for JAK-1 have entered phase III development. Inhibition of Janus Kinases (JAK)
antagonizes signal transduction for many inflammation relevant cytokines. These
include filgotinib and upadacitinib. Selective JAK1 inhibitors show promising phase II
signals in both CD and UC. Additional selective or specific JAK and TYK inhibitors are
in earlier phases of development.

A novel mechanism is represented by stimulation of the S1P receptor which leads to
retention of lymphocytes in bone marrow and lymph nodes. Fingolimod that is currently
used in multiple sclerosis has been complemented by more specific novel substances
in this class. These avoid through a selective engagement with only some of the five
S1P receptors overshooting immune suppression and have no longer cardiotoxic
effects. Both ozanimod and fingolimod have shown string efficacy signals in phase II
trials in UC with ozanimod reaching already the end of phase III development.

Under the many other substances that are in early development it is noteworthy that
locally acting principles are examined too. These include local acting JAK inhibitors
and local acting anti-cytokine molecules (e.g. nanobodies against TNF and peptides
blocking either α4β7 integrin or IL-23, respectively.

Surprisingly, a non-systemic immune modulation on the level of the gut mucosa
delivered a strong clinical signal in UC as well as efficacy in CD. Shortly later,
ustekinumab, an inhibitor against the p40 protein, which is shared by the cytokines
IL-12 and IL-23 was introduced for the therapy of CD and lately showed efficacy in UC,
too. The latest addition was an oral drug, the pan-JAK inhibitor tofacitinib, which
delivers very fast efficacy in active UC.

With so many diverse therapeutic principles being effective, many companies in the
immune area have speeded up developments in the field of IBD. Very soon new
biologics will be available with different specificities in the α4β7 pathway, others with
specific inhibitory capacity against IL-23 and a further substance class directed against
IL-6 trans-signaling. In addition, we will see oral substances either delivering more specific inhibition of known targets (e.g. JAK pathway) or address novel MOA (e.g. S1P agonism).

With the enormous choice coming up the questions for the first choice and for the best sequencing of therapies become burning. A first head-to-head trial between biologics has recently been presented with many more coming in the next years. This may help to solve the quest for the best first choice but leaves the need for algorithm trials investigating synergisms through sequencing of targeted therapies.
Session VIII

Special situations in IBD
Sexual dysfunction and pregnancy

C.J van der Woude
Afd. Gastroenterologie, Erasmus Medical Center, Rotterdam, The Netherlands

Inflammatory bowel disease (IBD) is a chronic disease of the gastrointestinal tract that affects men and women in their young and reproductive years of life. Anxieties about potentially harmful medication, the effect of pregnancy on disease, the effect of disease on the fetus and the potential of passing on of disease to offspring are affecting young women with IBD in their choices, resulting in a relatively high ‘voluntary’ childlessness in this patient group. Management of IBD patients with a pregnancy wish necessitates a pro-active approach. A careful consultation with the parents to be on the effects of maintenance drugs on fertility, disease remission during conception and pregnancy and the outcome of their children is justified in these patients and involves adequate pre-conception counselling. In this presentation different aspects with respect to reproduction and pregnancy in females treated for IBD will be discussed. During pregnancy acute disease flares carry a high risk of adverse maternal and fetal outcome. Disease activity at time of conception and during pregnancy is associated with a higher rate of spontaneous abortion, preterm delivery, thromboembolic events, emergency caesarean section and low birth weight. According to current European guidelines (ECCO) appropriate treatment of IBD should be maintained in those patients who wish to conceive, in order to reduce the risk of flares during pregnancy. This presentation is aimed at maintaining this important disease remission at conception and pregnancy and at the effects of immunosuppression and biologicals on the pregnancy outcome. The risk of drugs on the newborn during lactation will only be shortly discussed (Table 1).
Table 1: IBD drugs and their risk during lactation.

<table>
<thead>
<tr>
<th>Drugs</th>
<th>Risk during lactation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aminosalicylates</strong></td>
<td></td>
</tr>
<tr>
<td>• Mesalazine</td>
<td>Low risk</td>
</tr>
<tr>
<td>• Sulfasalazine</td>
<td>Low risk</td>
</tr>
<tr>
<td><strong>Corticosteroids</strong></td>
<td></td>
</tr>
<tr>
<td>• Prednisone</td>
<td>Low risk</td>
</tr>
<tr>
<td>• Prednisolone</td>
<td></td>
</tr>
<tr>
<td>• Budesonide</td>
<td></td>
</tr>
<tr>
<td><strong>Thiopurines</strong></td>
<td></td>
</tr>
<tr>
<td>• Azathioprine (AZA)</td>
<td>Low risk</td>
</tr>
<tr>
<td>• 6-mercaptopurine (6-MP e.g. Mercaptopurine)</td>
<td>Low risk</td>
</tr>
<tr>
<td>• 6-thioguanine (6-TG)</td>
<td>Limited data available, probably low risk</td>
</tr>
<tr>
<td><strong>Methotrexate</strong></td>
<td>High risk, do not use</td>
</tr>
<tr>
<td><strong>Anti-TNF</strong></td>
<td></td>
</tr>
<tr>
<td>• Adalimumab</td>
<td>Low risk</td>
</tr>
<tr>
<td>• Infliximab</td>
<td>Limited data available, probably low risk</td>
</tr>
<tr>
<td>• Thalidomide</td>
<td>High risk, do not use</td>
</tr>
<tr>
<td>• Golimumab</td>
<td>Low risk</td>
</tr>
<tr>
<td>• Certolizumab pegol</td>
<td>Low risk</td>
</tr>
<tr>
<td><strong>Vedolizumab</strong></td>
<td>Limited data available, probably low risk</td>
</tr>
<tr>
<td><strong>Ustekinumab</strong></td>
<td>Limited data available, probably low risk</td>
</tr>
</tbody>
</table>
Impact of infections in the course and treatment of patients with IBD

G. Rogler
Klinik für Gastroenterologie & Hepatologie, Universitätsspital Zurich, Zurich, Switzerland

Infections such as CMV or Clostridium difficile enteritis may trigger flares of IBD. On the other hand, infections may be a consequence of immunosuppressive therapy, not only typical opportunistic infections but also “common” bacterial infections.

Frequency as well as type of infection risk depend on the choice of immunosuppressive therapy. The prevention of infectious complications therefore is an important aspect in therapy of IBD patients and consists of general aspects, such as completion of vaccinations before initiation of an immunosuppressive therapy, especially against Influenza A, Pneumococci and Varizella zoster.

Lymphopenia may increase the risk of opportunistic infections. It has further repeatedly been associated with infectious complications in various chronic inflammatory diseases. Data from the TREAT registry, a large North American cohort study, reports serious infections to occur at a rate of 1.7% in patients with CD. In a pooled safety analysis of 7 CD and 3 UC cohorts, Lichtenstein et al. counted serious infections in 4.6% of CD and 5.4% of UC (total IBD: 4.9%) patients treated with immunomodulators such as AZA/6-MP or methotrexate (MTX). When patients with different chronic inflammatory diseases were investigated by Glueck et al. in a German cohort, the rate of infections requiring hospitalisation increased to 13.8% in patients that received AZA/6-MP with or without concomitant steroids. The latter study is of particular interest, as it proved lymphopenia with cell counts < 600 C/µl, respectively CD4+ < 250 C/µl, to significantly increase the risk for development of infections.

There are several strategies for the prevention of infectious complications, which depend on the individual risk of the immunosuppressive drug and the individual risk of the patient. Examples are the prevention of tuberculosis reactivation in latently infected patients under anti-TNF-α-therapy or the prevention of hepatitis B reactivation in anti-HBc positive patients.

Other aspects influencing the individual risk of infection include food consumption and the choice of profession, however, there are few data on these aspects in IBD patients and therefore, recommendations are mostly adopted from recommendations for patients with other immunosuppressive conditions, mainly tumor patients.
IBD a systemic disease: Extraintestinal manifestations

R. Panaccione
Inflammatory Bowel Disease Clinic, Cumming School of Medicine, University of Calgary, Calgary, Alberta T2N 4Z6, Canada

Extraintestinal manifestations (EIMs) of inflammatory bowel disease (IBD) are common in both ulcerative colitis (UC) and Crohn's disease (CD). These manifestations can involve nearly any organ system — including the musculoskeletal, dermatologic, hepatopancreatobiliary, ocular, renal, and pulmonary systems — and can cause a significant challenge to physicians managing IBD patients. Most IBD patients with EIMs have colonic inflammation, although some patients develop EIMs prior to the onset of colonic symptoms.

EIMs are seen in 25–40% of IBD patients.\(^1,2\) Inflammatory manifestations of the skin, eyes, liver, and joints are considered primary manifestations. If secondary effects of disease activity are also considered, nearly 100% of IBD patients have an abnormality outside of the gastrointestinal tract lumen.\(^3\) Twenty-five percent of IBD patients have more than 1 EIM. The development of 1 EIM appears to increase the risk of developing a second EIM.\(^4\) Few studies have specifically examined how frequently an EIM is a patient's presenting symptom or is present at the time of diagnosis versus occurring later in the disease course. Limited data have shown that approximately one third of patients will develop symptomatic primary sclerosing cholangitis (PSC) prior to a diagnosis of IBD. Based on several small studies, 10–30% of patients with arthritis related to IBD will have arthritic symptoms prior to IBD diagnosis. This is outlined in Table 1.

<table>
<thead>
<tr>
<th>Organ involved</th>
<th>Extraintestinal manifestation</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bone and joint</td>
<td>Peripheral arthropathy (Types 1 and 2)</td>
<td>4–20</td>
</tr>
<tr>
<td></td>
<td>Axial involvement (Spondylitis/Sacroiliits)</td>
<td>3–10</td>
</tr>
<tr>
<td>Skin</td>
<td>Erythema nodosum</td>
<td>10–20</td>
</tr>
<tr>
<td></td>
<td>Pyoderma gangrenosum</td>
<td>&lt; 1</td>
</tr>
<tr>
<td></td>
<td>Oral aphthous ulcers</td>
<td>&lt; 1</td>
</tr>
<tr>
<td></td>
<td>Sweet syndrome</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Eye</td>
<td>Uveitis</td>
<td>3–11</td>
</tr>
<tr>
<td></td>
<td>Episcleritis</td>
<td>&lt; 1</td>
</tr>
<tr>
<td></td>
<td>Scleritis</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>Liver and biliary tract</td>
<td>Primary sclerosing cholangitis (PSC)</td>
<td>&lt; 1</td>
</tr>
</tbody>
</table>

Table 1: Prevalence of main extraintestinal manifestations (EIM) in patients with inflammatory bowel disease (IBD).

Importantly, it is important to recognize which EIMs are linked to disease activity and which may run an independent course (Table 2).
<table>
<thead>
<tr>
<th>EIM associated with IBD activity</th>
<th>EIM not associated with IBD activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1 peripheral arthropathy</td>
<td>Type 2 peripheral arthropathy</td>
</tr>
<tr>
<td>Erythema nodosum</td>
<td>Ankylosing spondylitis</td>
</tr>
<tr>
<td>Episcleritis</td>
<td>Uveitis</td>
</tr>
<tr>
<td>Oral aphthous ulcers</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EIM that may or may not be associated with IBD activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pyoderma gangrenosum</td>
</tr>
<tr>
<td>Primary sclerosing cholangitis (PSC)</td>
</tr>
</tbody>
</table>

**Table 2:** Relationship between extraintestinal manifestations (EIM) and flare-ups of intestinal activity of inflammatory bowel disease (IBD).

There are different mechanisms that may be at play to explain why extraintestinal occur in these patients with IBD. Putative mechanisms are outlined in Table 3.

**Mechanisms related to the pathogenesis of extraintestinal manifestations**

<table>
<thead>
<tr>
<th>Mechanism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genetic susceptibility</td>
</tr>
<tr>
<td>Bacterial antigens and/or products found in the intestinal lumen</td>
</tr>
<tr>
<td>Imbalances of production and release of pro-inflammatory cytokines</td>
</tr>
<tr>
<td>Abnormal self-recognition against organ-specific cellular antigen(s)</td>
</tr>
<tr>
<td>Immunopathogenetic autoantibodies and immune complexes against organ-specific cellular antigen(s)</td>
</tr>
</tbody>
</table>

**Table 3:** Mechanisms related to the pathogenesis of extraintestinal manifestations in inflammatory bowel disease (IBD).

Treatment can be specifically directed to the extraintestinal manifestations including non-specific anti-inflammatory agents, immunosuppressants or more often systemic biologic therapy such as anti-TNF.

**References:**


List of Chairpersons, Speakers and Scientific Organizers

Maria T. Abreu, M.D.
Professor of Medicine
University of Miami
Gautier Medical Research Building, Room #510
1011 NW 15th Street
Miami, FL 33136
USA

Adam S. Cheifetz, M.D.
Professor of Medicine
Harvard School of Medicine
Center for Inflammatory Bowel Disease
Beth Israel Deaconess Medical Center
330 Brookline Ave., Rabb 425
Boston, MA 02215-5400
USA

Prof. Dr. Willem A. Bemelman
Department of Surgery
Tytgat Institute for Liver & Intestinal Research
University van Amsterdam
Meibergdreef 9
1105 AZ Amsterdam
The Netherlands

Prof. Dr. André D’Hoore
Department of Abdominal Surgery
University Hospital Leuven
Herestraat 49
3000 Leuven
Belgium

Dr. Charles N. Bernstein
Department of Gastroenterology
University of Manitoba
804 F-175 McDermot Avenue
Winnipeg, MB R3E 3P4
Canada

Prof. Dr. Axel Dignass
Medizinische Klinik I
AGAPLESION
Markus Krankenhaus
Wilhelm-Epstein-Str. 4
60431 Frankfurt
Germany

Dr. Francisco J. Bosques Padilla
Servicio de Gastroenterología
Hospital Universitario
Dr. José Eleuterio González
Universidad Autónoma de Nuevo León
64710 Monterrey, N.L.
Mexico

Marla C. Dubinsky, M.D.
Professor of Pediatrics
The Susan & Leonard Feinstein
IBD Clinical Center
Suite 1165W
17 East 102nd Street, 5th Floor
New York, NY 10029
USA

Dr. Marjolein Duijvestein
Department of Gastroenterology and Hepatology (Room PK 2 x 140)
Amsterdam UMC
De Boelelaan 117
1081 HV Amsterdam
The Netherlands
Claudio Fiocchi, M.D.
Professor of Medicine
Department of Inflammation & Immunity
Cleveland Clinic
9500 Euclid Avenue
Cleveland, OH 44195
USA

Edward V. Loftus, M.D.
Professor of Medicine
Division of Gastroenterology
and Hepatology
Mayo Clinic
200 First Street SW
Rochester, MN 55905
USA

Prof. Dr. Subrata Ghosh
Institute of Translational Medicine
University of Birmingham
Birmingham B15 2TT
Great Britain

Javier Martín de Carpi, M.D., Ph.D.
Department of Gastroenterology,
Hepatology and Nutrition
Hospital Sant Joan de Déu Barcelona
Passeig de Sant Joan de Déu, 2
08950 Esplugues de Llobregat,
Barcelona
Spain

Prof. Dr. Fernando Gomollón
IBD Unit
Hospital Clínico Universitario
“Losano Blesa”
Facultad de Medicina
Fundación del Instituto de Investigación
Sanitaria de Aragón (IIS Aragón)
Avenida San Juan Bosco 15
50009 Zaragoza
Spain

Prof. Dr. Gilaad Kaplan
Division of Gastroenterology
and Hepatology
Inflammatory Bowel Disease Clinic
Cumming School of Medicine
University of Calgary
Teaching Research and
Wellness Building
Room 3D03-18, 3280 Hospital Drive NW
Calgary, AB T2N 4Z6
Canada

Prof. Dr. Pia Munkholm
Department of Gastroenterology
North Zealand University Hospital
Frederikssundsvej 30
3600 Frederikssund
Denmark

Prof. Dr. Remo Panaccione
Inflammatory Bowel Disease Clinic
Cumming School of Medicine
University of Calgary
Teaching Research and
Wellness Building
Room 6D30, 3280 Hospital Drive NW
Calgary, AB T2N 4Z6
Canada

Prof. Dr. Zhihua Ran
Department of Gastroenterology
Renji Hospital
Shanghai Jiaotong University
160 Pu Jian Rd., Pudong District
200001 Shanghai
China

Prof. Dr. James O. Lindsay
Consultant Gastroenterologist
The Royal London Hospital
Bart’s Health NHS Trust
Whitechapel
London E1 1BB
Great Britain

Feza Remzi, M.D.
Professor of Surgery
Inflammatory Bowel Disease Center
240 East 38th Street, 23rd Floor
New York, NY 10016
USA
Dr. Jordi Rimola  
Department of Radiology  
Hospital Clinic de Barcelona  
C/Villarroel 170  
08036 Barcelona  
Spain

Prof. Dr. Dr. Gerhard Rogler  
Klinik für Gastroenterologie & Hepatologie  
Universitätsspital Zürich  
Rämistr. 100  
8091 Zürich  
Switzerland

William J. Sandborn, M.D.  
Professor of Medicine  
Division of Gastroenterology  
University of California San Diego  
9500 Gilman Drive, MC 0956  
La Jolla, CA 92093  
USA

Bruce E. Sands, M.D.  
Professor of Medicine  
Icahn School of Medicine at Mount Sinai  
One Gustave L. Levy Place, Box 1069  
New York, NY 10029  
USA

Prof. Dr. Stefan Schreiber  
Klinik für Innere Medizin I  
Universitätsklinikum Schleswig-Holstein, Campus Kiel  
Arnold-Heller-Str. 3 (Haus 6)  
24105 Kiel  
Germany

Bo Shen, M.D.  
Professor of Medicine  
Columbia University Medical Center  
New York Presbyterian Hospital  
Herbert Irving Pavilion  
161, Fort Washington Avenue  
New York, NY 10032  
USA

Siddarth Singh, M.D., M.Sc.  
Assistant Professor of Medicine  
Division of Gastroenterology and Division of Biomedical Informatics  
University of California San Diego  
9452 Medical Center Dr., ACTRI 1W501  
La Jolla, CA 92093  
USA

A. Hillary Steinhart, M.D.  
Professor of Medicine  
Mount Sinai Hospital IBD Centre  
University of Toronto  
445-600 University Avenue  
Toronto, ON M5G 1X5  
Canada

Prof. Dr. C. Janneke van der Woude  
Afd. Gastroenterologie  
Erasmus Medical Center  
‘s-Gravendijkwal 230  
3015 CE Rotterdam  
The Netherlands

Prof. Dr. Michael Vieth  
Institut für Pathologie  
Klinikum Bayreuth  
Preuschwitzer Str. 101  
95445 Bayreuth  
Germany

Prof. Dr. Jesús K. Yamamoto-Furusho  
Clinica de Enfermedad Inflamatoria Intestinal  
Departamento de Gastroenterología  
Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán  
Segundo piso, Calle Vasco de Quiroga Colonia Belisario Domínguez Sección XVI  
Delegación Tlalpan. C.P.  
14080 Ciudad de México  
Mexico
POSTER ABSTRACTS

Poster Numbers 1 – 43

Author Index to Poster Abstracts
Hematological scales as indicators of the exacerbation in ulcerative colitis patients – A single-center experience

Halina Cichoż-Lach (Lublin, PL), Agata Michalak (Lublin, PL), Katarzyna Laskowska (Lublin, PL), Piotr Radwan (Lublin, PL), Beata Kasztelan-Szczerbińska (Lublin, PL)

Introduction: Deviations in hematological scales were proved to accompany various systemic conditions (e.g. cancer, myocardial infarction). However, they have been poorly investigated in the course of inflammatory bowel disease. The goal of our study was to determine the role of hematological parameters in ulcerative colitis (UC) patients treated with vedolizumab (VEDO).

Methods: Forty participants were included to the survey: 20 patients with active UC and 20 persons in control group. UC patients were treated with VEDO (3 doses of standard induction therapy). Red blood cell distribution width-to-lymphocyte ratio (RLR), neutrophil-to-platelet ratio (NLR), red blood cell distribution width-to-platelet ratio (RPR), platelet-to-lymphocyte ratio (PLR) and mean platelet volume-to-platelet ratio (MPR) together with their correlations were measured in the blood of UC patients at 0, 2, and 6 weeks of induction regimen and in follow-up six weeks later. Results were compared with control group.

Results: RLR, NLR and PLR levels in UC patients prior to the first dose of VEDO were higher in comparison to controls (p < 0.0001); MPR value was lower (p < 0.0001). MPR and RPR levels increased after VEDO induction regimen (p < 0.01 and p < 0.05, respectively). AUC values and proposed cut-offs for NLR, RLR and MPR in the acute phase of UC were 0.968 (= 2.08), 0.938 (= 187.58) and 0.845 (< 0.2), respectively. C-reactive protein (CRP) correlated positively with RLR, NLR and PLR (p < 0.0001) and negatively with MPR (p < 0.001) prior to the treatment with VEDO. There was a positive correlation between RLR and PLR (p < 0.0001), too.

Discussion/Conclusion: NLR, RLR and MPR seem to be potential significant indicators of the exacerbation in UC patients. According to available literature, presented study seems to be the first one on hematological scales in UC patients treated with VEDO.
Clinical value of lactulose breath test in diagnosis of small intestinal bacterial overgrowth in ulcerative colitis and irritable bowel syndrome

Yolanda Cortés Aguilar (Guadalajara, MX),
Gilberto Priego Figueroa (Guadalajara, MX),
Fernanda Ruiz Montenegro Cortés (Guadalajara, MX),
Jesús Valenzuela Pérez (Guadalajara, MX),
Héctor Alfonso Gómez Rodríguez (Guadalajara, MX),
Cristian Jaramillo Buendia (Guadalajara, MX),
Esau Rodríguez Magaña (Guadalajara, MX)

Introduction: Bloating, abdominal pain, discomfort and flatulence are common, along the disease, difficult to differentiate in IBD with mild disease activity, before to optimize conventional treatments LBT could be useful to avoid being overtreated. Small intestinal bacterial overgrowth (SIBO) is a significant and increasingly recognized syndrome. Causes IBS symptoms in IBD While the Gold Standard for diagnoses is culture of intestinal content, Breath test such as lactulose with quantification of hydrogen in breath samples remains the most inexpensive, non-invasive, and widely available test for the diagnosis of SIBO. In the absence of a universally acceptable gold-standard test and cutoffs for an increase in hydrogen concentration above baseline for a diagnosis of SIBO, exact determination of the test characteristics of breath testing is difficult to assess. In a systematic review, Chen et al. describe studies of prevalence and accuracy for testing for SIBO. Khoshini et al found sensitivity ranged from 31 to 68% and specificity ranged from 44 to 100%, between 4% and 78% of patients with IBS and 1% and 40% of controls have SIBO. The pooled prevalence of SIBO in IBS was higher in studies diagnosed by breath tests (40%, 95% CI: 33–46) compared with cultures (19%, 95% CI: 8–30). The proportion of SIBO in IBD patients was 22.3% (95% CI: 19.92–24.68). The OR for SIBO in IBD patients was 9.51 (95% CI: 3.39–26.68) compared to non-IBD controls. Aims of this study was to evaluate clinical value of LBT for abdominal symptoms in consecutive and prospective patients referred to testing SIBO in patients with UC and IBS in a tertiary center.

Methods: 217 patients with abdominal pain, bloating, diarrhea (56, UC/ 161 IBS) were investigated for SIBO, using Gastrotester, Bedfont® and lactulose 10 gr oral. Elevation in breath hydrogen of 20 ppm above basal and one peak 90 min, were diagnostic of SIBO.

Results: Ulcerative colitis (34.7%) and irritable bowel syndrome, (65.2%). UC = 56, IBS = 161. Age 55 (UC) vs. 56 (IBS) Gender UC: Female 39 (69.6%)/Male: 17 (30.3%); IBS Male 27 (16.87%)/Female 134 (83.7%). SIBO positive test: 23 (41.07% UC vs. 88 (55%) IBS, SIBO negative test: 33 (41.07%) UC vs. 73 (45.3%) IBS. Initial Mean values ppm. Mean 5.18 ppm in UC patients vs 5.70 ppm IBS (p = 0.56). Final ppm values UC (90 min) Mean 36.7 ppm (95% CI: 27.63–45.77) SD = 33.87; IBS = 25.99 ppm (95% CI: 22.20–29.78) SD = 24.35. Significant difference between groups between maximum values on ppm (p = 0.033). UC = Sensitivity 91% / Specificity 80%, ROC = 0.897, IBS = Sensitivity 83%, Specificity 82% ROC = 0.96. UC: Presence of SIBO when values
≥ values 20 ppm of basal at 90 min. LBT had sensitivity of 0.913, specificity = 0.30. The ROC was 0.897.

IBS: Sensitivity of LBT when values ≥ 20 ppm was 0.83, specificity 0.082, the ROC was 0.962.

Lactulose breath test in this study shows better sensitivity to detect SIBO in patients with ulcerative colitis compared with 0.83 in patients with IBS. Association with SIBO in ulcerative colitis and IBS was 89.7% vs. 96.2%.

**Discussion:** Our findings suggest similar pooled prevalence of SIBO in IBS (55%), was higher in studies diagnosed by breath tests (40%, 95% CI: 33–46), compared with patients with ulcerative colitis (41.07%). Patients with UC had values in ppm highest compared with 25.9 ppm in IBS. Pathogenesis of bacterial overgrowth remains poorly understood and we suggest further studies. Prevalence of SIBO in our study was similar in patients with IBS 22–67%.

**Conclusion:** Our findings suggest this test could have a value in patients with suspected SIBO. Lactulose breath test is simple, safe test to study abdominal symptoms in UC and IBS.
Faecal microbiota transplantation: An emerging treatment for ulcerative colitis

Andrew Cunningham (Swansea, GB), Matthew Hitchings (Swansea, GB), Dean Harris (Swansea, GB)

Introduction: Ulcerative colitis (UC) is an idiopathic chronic inflammatory disorder of the colon which can have a debilitating relapsing remitting pattern. The incidence is 10 per 100,000 people annually and affects approximately 14,600 patients in the UK. UC is a lifelong disease associated with significant morbidity and the potential for social and psychological sequelae particularly if poorly controlled. There is a well-documented association with the development of colorectal cancer (CRC), with the greatest risk in long-standing and extensive disease.

The exact pathophysiology is unknown, but is considered to result from an immunologically mediated aggressive T-cell response to a subset of commensal enteric bacteria in genetically susceptible hosts. Mucin depletion and dysregulated tight junctions are thought to contribute to a disrupted epithelial architecture, which allows normal commensal bacteria to be sampled by dendritic cells.

There is no current cure; management is focused on suppression of inflammation through lifelong medical therapy (aminosalicylates, corticosteroids, immune-modulators), or surgery in severe disease. Complications of medical therapy include interstitial nephritis, susceptibility to opportunistic infections and bone marrow suppression.

Faecal microbiota transplantation (FMT) maybe of therapeutic value in patients with UC by contributing to the repopulation of healthy intestinal flora. Gut dysbiosis is associated with various conditions including clostridium difficile infection, UC, irritable bowel disease, obesity and CRC.

Increasing amounts of literature suggest that FMT is an effective treatment for selected UC patients with early remission rates quoted of up-to 63%. There is a pressing need to understand the optimal administration methods and to gain better understanding of the temporal changes in the microbiota responsible for both the underlying disease and the cause of remission. This review looks at the most recent published literature and gives a valuable insight into the potential role of FMT for the management of UC and the avoidance of lifelong medical therapy.
Cerebellar large B-cell lymphoma in a patient on anti-TNFα treatment for Crohn’s disease

Oussama Daboussi (Le Coudray, FR), Jean Philippe Boucher (Le Coudray, FR), Anne Herber (Le Coudray, FR)

Introduction: Lymphoproliferative disorders, particularly non-Hodgkin’s lymphomas, are rare in patients with inflammatory bowel diseases. The use of thiopurine and biological treatment are known cofactors that can raise its prevalence. Primary central nervous system lymphoma is rare, malignant non-Hodgkin lymphoma that originates in the brain, spinal cord, leptomeninges or cranial nerves. Primary central nervous system (PCNS) lymphoma is rare, comprising 3% of all primary brain tumors. Lesions are located in the cerebellum in 9% of cases. Herein, we report an extremely rare case of PCNS B-cell lymphoma of the cerebellum in a patient with Crohn’s disease.

Results: A 55-year-old male is known since 2000 for an ileal fistulizing Crohn’s disease revealed by an abdominal abscess. He underwent an intestinal resection with ileo-ileal anastomosis. Then, he started azathioprine to prevent postsurgical recurrence. In January 2015, we suggested anti-TNFα (Infliximab) associated to azathioprine, due to a severe clinical and endoscopic recurrence. In August 2017, we stopped azathioprine. In November 2018, the patient presented to the emergency unit with headache, vomiting and dizziness. Contrast-enhanced computed tomography, revealed a mass in the cerebellar vermis and the two hemispheres compressing the fourth ventricle. T2-weighted axial, T1 weighted and gadolinium enhanced T1 weighted axial magnetic resonance imaging scans show the same mass of the posterior cranial fossa enhancing with contrast. We noticed blood spots with low signal intensity in susceptibility weighted imaging. Imaging-guide stereotactic biopsy was performed. Histology with immunohistochemistry confirmed non-Hodgkin lymphoma of diffuse large B-cell type. The patient received methotrexate and cytarabine. He benefited from autologous stem-cell transplant. He has experienced marked improvement in his symptoms with treatment. No recurrence was noticed in 6 months follow-up.

Discussion/Conclusion: We stress the importance of recognizing the occurrence of a lymphoproliferative disorder in association with anti-TNFα therapy and thiopurine. Given the case presented, close monitoring of all patients receiving these therapies with a full report of any adverse outcomes is highly recommended.
Prevalence and risk factors of malnutrition in Crohn’s disease patients

Oussama Daboussi (Le Coudray, FR), Murphy Luwawu (Le Coudray, FR), Anne Herber (Le Coudray, FR)

Introduction: Malnutrition may be associated in patients with Crohn’s disease. It is multifactorial, often associated with inflammation and malabsorption due to protein-losing enteropathy. Malnutrition may worsen disease prognosis by increasing infections and reducing mucosal healing rate.

Aim: To assess prevalence of malnutrition in Crohn’s disease patients and identify associated risk factors.

Methods: Retrospective comparative study comprising all consecutive patients diagnosed with Crohn’s disease followed in our unit. We defined malnutrition as a BMI below 18 kg/m², low albumin serum level (adjusted with C-reactive protein) or subjective global assessment grade B or C. The patients were divided into 2 groups: patients with normal BMI vs. malnourished patients.

Results: A total of 76 patients were included with a mean age of 38.6 years and a sex-ratio of 1.6. The median follow-up was 30 months. Malnutrition was found in 31.5% of patients. Prevalence of malnutrition increased with disease activity (CDAI = 150). Malnutrition was associated with ileal extension of the disease and the presence of intra-abdominal fistulas (p < 0.01).

Discussion/Conclusion: Malnutrition was found in 31% of patients in our study. Ileal localization and presence of intra-abdominal fistulas were predictor factors of malnutrition.
**CONUT score: A promising tool for nutritional assessment and severity evaluation in ulcerative colitis patients**

Jorge Luis de León Rendón (Mexico City, MX),
Noé Isaías Gracida Mancilla (Mexico City, MX),
Raquel Yazmin López Pérez (Mexico City, MX),
Ylse Gutiérrez Grobe (Mexico City, MX), Billy Jiménez Bobadilla (Mexico City, MX),
Juan Antonio Villanueva Herrero (Mexico City, MX)

**Introduction:** The Controlling Nutritional Status (CONUT) was previously shown to be useful for nutritional assessment and as a prognosis tool of several inflammatory and neoplastic diseases. In the present study we evaluate the potential use of CONUT score as a method for nutritional screening and as a predictor of severity in ulcerative colitis (UC).

**Methods:** The study was conducted including 60 patients diagnosed with UC. Demographic, clinical, and biochemical patient characteristics were collected from their clinical records, and disease severity was assessed using the Truelove and Witts-Scale (TWS). The risk of malnutrition were assessed and nutritional risk index and the CONUT score. The ROC curve was used to calculate a cutoff point in the CONUT scale to discriminate severity.

**Results:** Of the patients included, mean age was 40.6 years. Gender distribution was balanced (men = 50%; women = 50%). Proctitis was the predominant extension of the disease (61.7%), followed by pancolitis (30%) and left colitis was found in only 8.3%. In terms of the TWS severity scale, 60% of cases were classified as moderate severity. BMI was calculated for all participants. Over 80% were normal or overweight (40% and 43.3%, respectively), while a small proportion (5%) had low weight. CONUT score detected 93.3% of patients at risk of malnutrition, of whom 43.3% had moderate risk. This scale detected that only 6.3% were not at risk of malnutrition. Patients scoring high (= 6 points) in CONUT score presented moderate to severe activity in the TWS. Furthermore, higher CONUT score also correlated with higher levels of C-reactive protein (CRP) (p = 0.002) and erythrocyte sedimentation rate (ESR) (p = 0.009).

**Discussion/Conclusion:** CONUT score could be considered a useful tool for nutritional assessment in UC patients and a potential predictor of UC severity, as an association was found with TWS-measured severity, as well as with higher CRP plasma levels and higher ESR.
Neutrophil/lymphocyte ratio as a severity predictor in ulcerative colitis

Jorge Luis de León Rendón (Mexico City, MX), Noé Isaías Gracida Mancilla (Mexico City, MX), Raquel Yazmin López Pérez (Mexico City, MX), Ylse Gutiérrez Grobe (Mexico City, MX), Billy Jiménez Bobadilla (Mexico City, MX), Juan Antonio Villanueva Herrero (Mexico City, MX)

Introduction: The neutrophil/lymphocyte ratio (NLR) is a marker of subclinical inflammation originally suggested to define the prognosis in cancer patients, and it used as a marker of severity in different inflammatory and ischemic diseases. In addition, NLR has been detected is superior to leukocytosis to predict adverse outcomes in a variety of inflammatory and surgical conditions. In the present study we pretend to determine the usefulness of the INR as a predictor of severity in ulcerative colitis (UC) patients.

Methods: A retrospective study was conducted in which 39 patients with a diagnosis of UC confirmed by histopathology were included. The demographic, clinical and biochemical features of each patient were collected. Patients were grouped according to severity (mild, moderate, severe) based on the Truelove and Witts (TWS) scale, Mayo score and Riley index. NLR was calculated considering the absolute neutrophil and lymphocyte counts.

Results: Of the patients studied, 51.3% were women, with an average age of 41.3 ± 12.2 years at the time of diagnosis. The average duration of the disease was 3.9 ± 2.9 years; 56.4% of patients had proctitis, 35.9% pancolitis and the rest left colitis. 43.6% had extraintestinal manifestations and 25.6% needed surgical treatment. When comparing the NLR with the severity scores for the disease, we observe that a higher NLR (≥ 4.6) was associated with a higher severity by TWS (p = 0.04). Through an ROC curve we obtained that a NLR ≥ 4.6 discriminates between mild and moderate to severe activity of UC based on the TWS, with a of sensitivity 78% and specificity 72% (AUC 0.68, p = 0.04). We observed a relationship between a NLR ≥ 4.6 and C-reactive protein ≥ 45 (p = 0.004).

Discussion/Conclusion: NLR could represent a useful tool as a predictor of clinical/biochemical severity in UC patients. The parameters used for its calculation make it an accessible, useful and low-cost tool.
Gene expression profiling of mediators associated to the inflammatory pathways in the intestinal tissue from patients with ulcerative colitis

Gabriela Fonseca-Camarillo (Mexico City, MX), Emilio Iturriaga-Goyon (Mexico City, MX), Rafael Barreto-Zuñiga (Mexico City, MX), Lucero Adriana Salazar-Salas (Mexico City, MX), Ana Elena Peredo-Escárcega (Mexico City, MX), Jesús Kazuo Yamamoto-Furusho (Mexico City, MX)

Introduction: Multiple genes have been associated with IBD, and many of these can be linked to alterations in autophagy, UPR, ubiquitination, metabolic and immune response, pathways. The aim of this study was to analyze a transcriptomic panel of mediators associated to the inflammatory pathways in the colonic mucosa of UC patients.

Methods: We studied a total of 100 patients with definitive diagnosis of UC (50 active and 50 in remission) and control group (50 subjects) without endoscopic evidence of intestinal inflammation. Colonic mucosal biopsies were taken by colonoscopy and preserved in RNA later. Gene expression were measured by real-time polymerase chain reaction (RT-PCR).

Results: The gene expression of XBP1, AGR2, HSPA5, UBE2L3, TNFRSF14, LAMP3, FCGR2A, LSP1, CTLA4, SOD2, TDO2 and ALDOB mRNA levels were significantly higher in the colonic mucosa from UC patients (both quiescent and active) as compared to control group (p < 0.05). Conversely, IRGM, ORDML3, UBD, CUL2, CYLD, FOXC2, FOXO4, DOK3 and SNX20 mRNA levels were found to be significantly lower in patients with active disease, as compared to those with active disease (p < 0.05). Gene expression of IRGM, CTLA4, FOXO4, SLC26A3, SLC39A4, SOD2, TDO2 and ALDOB were associated with clinical outcomes, such as medical treatment response to aminosalicylates, histological remission, clinical course and evolution.

Discussion/Conclusion: Gene expression signature showed dysregulation in mediators associated with autophagy, ubiquitination, ER stress, oxidative stress, carbohydrate metabolism, solute transport and T cell regulation in colonic mucosa from patients with UC, suggesting that these genes could be involved in the pathogenesis of UC.
Intestinal expression of interleukin-27 by immune cells in patients with inflammatory bowel disease

Gabriela Fonseca-Camarillo (Mexico City, MX),
Janette Furuzawa-Carballeda (Mexico City, MX),
Jesús Kazuo Yamamoto-Furusho (Mexico City, MX)

Introduction: Interleukin-27 (IL-27) is a member of the IL-12 cytokine family. It is a heterodimeric cytokine that is composed of two distinct genes, Epstein-Barr virus-induced gene 3 (EBI3) and IL-27p28. IL-27 is expressed by antigen presenting cells and interacts with a specific cell-surface receptor complex known as IL-27 receptor (IL-27R). IL-27 induces differentiation of the diverse populations of T cells in the immune system and also upregulates IL-10, for this the biology of IL-27 reveals unique pro- and anti-inflammatory functions in immunity.

Methods: In order to determine in situ IL-27 protein expression from intestinal biopsies of UC patients, tissues were immunostained and compared with non-inflamed tissue. The detection of IL-27 protein in tissue by immune cells was performed by immunohistochemistry

Results: All tissues obtained were formalin fixed and paraffin-embedded. IL-27-expressing cells in non-inflamed control tissue were mainly CD14- and CD123-cell subsets and to a lesser extent by a small double positive CD14/IL-27 subpopulation and an even smaller CD123/IL-27 subpopulation. A similar pattern of IL-27 expression was observed in samples from Crohn’s disease patients. Nonetheless, the IL-27-producing cells were conspicuously higher in CD patients than in non-inflammatory controls. It is noteworthy that in patients with UC IL-27-expressing cells were mostly CD14+ and CD123+, and a similar proportion of CD14- and CD123- cells.

Discussion/Conclusion: These findings showed that there is a differential protein expression of IL-27 by different subpopulations of immune cells CD14+ and CD123+ in patients with active IBD.
Overexpression of metalloproteinases-10 and -23 (MMP10, MMP23B) in inflammatory bowel disease

Gabriela Fonseca-Camarillo (Mexico City, MX),
Janette Furuzawa-Carballeda (Mexico City, MX),
Jesús Kazuo Yamamoto-Furuscho (Mexico City, MX)

Introduction: Increased production of metalloproteinase (MMPs) play an important role in tissue damage in inflammatory bowel disease. The increased expression of many members of the matrix metalloproteinase (MMP) family of enzymes that occurs in colitis. MMP10 and MMP23B are collagenases can also degrade other pro-inflammatory cytokines and chemokine’s, cleave tumor necrosis factor from the cell membrane, and activate transforming growth factor.

Methods: We measured the MMP10 and MMP23B gene expression from colonic biopsies from 20 patients with Crohn's disease, 50 patients with ulcerative colitis and 30 patients as control group (without intestinal inflammation). Gene expression of MMP10 and MMP23B were measured by RT-PCR. In order to determine MMP10 and MMP23B protein expression from intestinal biopsies from IBD patients, tissues were immunostained and compared with non-inflamed tissue. The detection of MMP10 and MMP23B proteins in tissue was performed by immunohistochemistry. Statistical analysis was done using SPSS v20

Results: MMP10 expression was increased in patients with active CD compared to UC patients and the control group (p = 0.0001). The MMP23B levels were increased in active CD and UC compared to the normal control group (p = 0.0001) and inactive CD and UC. MMP10 gene expression is associated with the state of inflammation in patients with UC (p = 0.000, r² = 0.585). MMP10-producing cells were found mainly in muscularis, adventitia and perivascular inflammatory. MMP10 was synthesized largely by epithelial cells, fibroblasts, endothelial cells and lymphocytes. MMP23B-producing cells were localized mainly in mucosa, submucosa, adventitia and perivascular inflammatory. MMP23B was produced by lymphocytes, monocytes/macrophages, fibroblasts and endothelial cells.

Discussion/Conclusion: The MMP10 and MMP23B were up-regulated in patients with active IBD as compared to IBD remission and healthy control groups suggesting that it is involved in the inflammatory process.
Transcriptome of intestinal epithelial barrier genes in the colonic mucosa from patients with ulcerative colitis

Gabriela Fonseca-Camarillo (Mexico City, MX), Emilio Iturriaga-Goyón (Mexico City, MX), Jesús Kazuo Yamamoto-Furusho (Mexico City, MX)

Introduction: Defects in the intestinal epithelial barrier function have been observed in patients with ulcerative colitis (UC). It is now becoming evident that an aberrant epithelial barrier function plays a central role in the pathophysiology of UC. Truncated forms of the adherent’s junction protein E-cadherin (encoded by CDH1) are associated with Crohn’s disease. However, genes involved in the epithelial barrier function (ECM1, LAMB1, CDH1, NLRP6, PTGER4 and LRG5) has not been yet described in patients with UC. The aim of the study was to analyze transcriptome panel of genes (ECM1, LAMB1, CDH1, NLRP6, PTGER4 and LRG5) in the colonic mucosa from UC patients.

Methods: We studied a total of 100 patients with definitive diagnosis of UC (50 active and 50 remission) and non-inflamed control group (n = 50) without endoscopic evidence of intestinal inflammation. In all groups, the ECM1, LAMB1, CDH1, NLRP6, PTGER4 and LRG5 gene expression were measured by real-time polymerase chain reaction (RT-PCR). Expression of GAPDH a housekeeping gene was analyzed for normalization purposes and quality controls. Statistical analysis was performed using the SPSS 19 program by the Kruskal-Wallis One Way Analysis of Variance on Ranks. Data were expressed as the median, range and mean ± SE. A P value ≤ 0.05 was considered as significant.

Results: LAMB1 gene expression was decreased in remission UC compared to active UC patients and controls (p = 0.024 and p = 0.03, respectively). CDH1 expression was increased in colonic mucosa from patients with active UC when compared with control group (p = 0.043 and p = 0.05). Conversely, the ECM1 expression was decreased in patients with active UC compared to UC patients in remission and normal control group (p = 0.05 and p = 0.003, respectively). The ECM1 levels were decreased in UC remission compared to the normal control group (p = 0.017). NLRP6 gene expression was increased in UC patients with histological remission compared with active UC and control group (p = 0.013 y p = 0.022). PTGER4 expression was increased in patients with UC remission compared to active group and normal control group (p = 0.005). LRG5 gene expression was increased in patients with active UC compared with remission and normal control group (p = 0.043 and p = 0.028).

Discussion/Conclusion: This is the first depiction of the description of gene expression of CDH1, LAMB1, ECM1, NLRP6, PTGER4 and LRG5 genes in the colonic mucosa from patients with UC, suggesting that these genes could be involved with defects in the intestinal epithelial barrier in patients with ulcerative colitis.
Defensins alpha 5 and 6 are up-regulated in the colonic mucosa from patients with ulcerative colitis and are associated with histological activity

Gabriela Fonseca-Camarillo (Mexico City, MX), Jesús Kazuo Yamamoto-Furusho (Mexico City, MX)

Introduction: Defensins are a family of cysteine-rich cytotoxic peptides that are found on the mucosal surface of the intestine and work as antimicrobial agents against the bacterial invasion of the intestinal epithelium. Most of the alpha defensing genes are clustered on chromosome 8, the proteins encoded by these genes (DEFA5 and 6) are highly expressed in the secretory granules of Paneth cells in the ileum.

Methods: A total of 118 individuals were included and divided into 3 groups: 1) UC active (n = 43); 2) UC in remission (n = 34); and 3) Control group (n = 41). The relative expression of the DEFA5 and DEFA6 genes was determined using real time PCR.

Results: The expression of the DEFA5 gene was significantly increased in the colonic mucosa of patients with UC active compared to the control group (p = 0.002) and UC in remission group (p = 0.04). Furthermore a significant difference was found in the expression between the UC remission group and the control group (p = 0.009). On the other hand, an up-regulation of the DEFA6 gene was also observed in the UC active group compared with the control group (p = 0.0001) as well as in the remission UC group as compared to the control group (p = 0.001). Finally, a significant association was found between the high expression of DEFA6 and a favorable response to medical treatment (p = 0.05, RM = 0.20) and the presence of histological activity (p = 0.01, RM = 11.4). The DEFA5 gene was also associated with the histological activity (p = 0.01).

Discussion/Conclusion: The expression of the DEFA5 and DEFA6 genes were increased in patients with UC, this might indicate that an underlying defense mechanism that increases the production of the antimicrobial peptides (defensins) in order to decrease the bacterial invasion in the colonic mucosa.
Characterization of TOB/BTG family proteins in intestinal tissue of patients with inflammatory bowel disease and controls

Gabriela Fonseca Camarillo (Mexico City, MX), Braulio Martínez Benítez (Mexico City, MX), Janette Furuzawa Carballada (Mexico City, MX), Rafael Barreto Zuñiga (Mexico City, MX), Ángel Alexis Priego Ranero (Mexico City, MX), Jesús Kazuo Yamamoto-Furusno (Mexico City, MX)

Introduction: Recently, the role of anti-proliferative TOB proteins in the inhibition of T lymphocyte activation. The aim of the study was to characterize the gene and protein expression of the TOB/BTG family of proteins in intestinal tissue of patients with inflammatory bowel disease and controls.

Methods: A prospective study was carried out in which 69 patients diagnosed with IBD and 26 controls were included. The levels of gene expression of TOB/BTG were determined by RT-PCR and co-localization with CD16+ or KI67+ was performed by immunohistochemistry in intestinal tissue from patients with IBD.

Results: Gene expression of TOB1 and BTG1 was found to be decreased in the colonic mucosa biopsies of patients with UC in compared to the control group. The TOB2 and BTG2 genes were found to be over-expressed in the colonic mucosa of patients with UC in remission compared to the active UC group and controls. The high expression of the TOB2 gene was associated with histological remission (p = 0.01, RM = 15, CI: 1.39–16.1). TOB1+/TOB2+/CD16+/BTG1/BTG2+ and BTG4+/Ki-67+ positive cells were detected in the mucosal area in the perivascular lymphoplasmacytoid inflammatory infiltrates of colonic tissue from patients with active UC in compared with Crohn group and controls.

Discussion/Conclusion: An increased expression of the TOB/BTG family in patients with IBD in remission suggests its immunoregulatory and anti-proliferative function. This set of proteins could be used as new alternatives in the treatment of IBD.
A comprehensive, multiomic diet intervention study comparing a low fat, high fiber diet to an idealized standard American diet in ulcerative colitis patients


Introduction: There is a lack of evidence-based dietary interventions in ulcerative colitis (UC) management. A diet high in fat and animal meat has been linked to an increased risk of UC. The aim of our study was to use a multilayered, multi-omic approach to comprehensively characterize the effect of a low fat, high fiber diet or a high fat diet in UC patients.

Methods: We enrolled patients with UC who were in remission or had mild disease with a flare within the last 18 months. We used a cross-over design in which patients received two dietary interventions: a low fat diet (LFD), containing 10% total calories from fat with an omega 6 to 3 ratio of below 3:1, and an idealized standard American diet (SAD), containing 35–40% total calories from fat with an omega 6 to 3 ratio of 20–30:1. Each diet was four weeks long with a two-week wash-out in between. The diet was catered and delivered to patients’ homes. Clinical symptoms, quality of life, and biochemical data were collected. Stool was collected for microbiome and metabolomic analyses. The primary endpoint was to determine adherence to a specified diet using catered meals; the secondary endpoint was to determine the clinical and subclinical effects of a low fat, high fiber diet or high fat diet in UC.

Results: Baseline diets varied widely but were generally lower in fiber as well as fruits and vegetables and higher in saturated fat than either of the study diets. There was a high rate of adherence to catered meals (SAD = 86.68%, LFD = 84.8%) with a 96.8% and 94.33% adherence to fat for SAD and LFD respectively. Patients that started in remission remained in remission (partial Mayo and sIBDQ). Following a LFD, patients saw a 20% improvement in their quality of life as measured by sIBDQ compared to their baseline. The effect of diet intervention on microbial diversity was reflected in the beta diversity with a significant increase in Faecalibacterium prausnitzii after LFD. CRP, sIBDQ, IL-6, and IL1β had a significant effect on overall gut microbiota composition as measured by Bray Curtis beta diversity (PERMANOVA) (p < 0.007, p < 0.001, p < 0.021, p < 0.048 respectively). The top taxa that contributes the most to this microbial variation from IL-6 was Faecalibacterium prausnitzii. Patients following a SAD had an increase in lauric acid, myristic acid, and N-oleoyl-L-phenylalanine with an increase in omega-6 metabolism pathways. Patients following a LFD had higher glycine, alanine, and phenyllactic acid with omega 3 metabolism pathways increased after LFD.

Discussion/Conclusion: A low fat, high fiber diet is well tolerated and did not increase biochemical markers of inflammation. Catered meals and collection of microbiome, metabolome and biochemical data may allow early stratification of diet responders.
Concerns of patients with inflammatory bowel disease and perception of risks and benefits of medical, surgical and alternative therapies

Fernando Gomollón (Zaragoza, ES), Paula Belanche (Zaragoza, ES), Carla Gargallo Puyuelo (Zaragoza, ES), Erika Alfambra (Zaragoza, ES), María Teresa Arroyo (Zaragoza, ES), Alberto Lué (Huesca, ES)

Introduction: There is little evidence that has reported on patients’ experiences with inflammatory bowel disease (IBD) and also, little attempt has been made to systematically assess and integrate patient concerns into the clinical management of the disease. Probably, patients’ subjective sense of well-being is influenced not just by the severity of their physical symptoms, but also by the extent to which they have worries and concerns about their disease.

Aims: 1) To determine leading concerns of IBD outpatients at a tertiary care facility. 2) To evaluate patient’s perception of risks and benefits of medical, surgical and alternative therapies.

Methods: This research is a cross-sectional prospective study conducted in a public large teaching Hospital integrated into the Spanish National Health System (University Hospital “Lozano Blesa”, Zaragoza) All consecutive patients attending in the IBD Unit from February 1, 2019 to April 31, 2019 that met the inclusion criteria and no exclusion criteria were included. Inclusion criteria were diagnosis of IBD based on conventional clinical, endoscopic, radiographic and histological criteria and age being 18 years or more. The exclusion criteria were inability to adequately complete the questionnaires due to cognitive impairment, or unwillingness to participate in the study. Sample size was 114 patients. Concerns of IBD outpatients and patient perception of risks and benefits of medical, surgical and alternative therapies were evaluated by a self-reported survey. Each question was answered using a Likert scale from 0 to 5.

Results: Graphs Patient’s concerns and estimation of risks are given in three tables. Maximal concerns are surgery, complications of surgery, possibility of ostomy, inheritance to children, pain, diarrhea and fecal incontinence. Patients do perceive also as riskful not taking medication and self-medication

Discussion/Conclusion: The main concerns of patients with IBD were complications post-surgery, carrying an ostomy bag, the fact that their offspring may inherit the disease and fecal incontinence. Others aspects as a new flare-up, IBD symptoms (pain, diarrhea, fatigue) and not reaching full potential also were reported as damaging psychological well-being of IBD patients. Tobacco, lack to adherence of treatment and self-medication were considered high risk actions without benefit. Surgical resection was considered a high risk situation but with high benefit. Colonoscopy was considered a high benefit action with an intermediate risk and vaccines were considered that had a high benefit with a low risk. Appropriate attention to patients’ concerns and to provide adequate information and support could minimize their impaction and prevent the self-perpetuating cycle of concern-anxiety
Non-alcoholic fatty liver disease and non-alcoholic steatohepatitis-related fibrosis in patients with inflammatory bowel disease

Fernando Gomollón (Zaragoza, ES), Pilar Alós (Zaragoza, ES), Carla Gargallo Puyuelo (Zaragoza, ES), Erika Alfambra (Zaragoza, ES), María Teresa Arroyo (Zaragoza, ES)

Introduction: Non-alcoholic fatty liver disease (NAFLD) is defined as fat accumulation in the liver in more than 5% of hepatocytes, in the absence of any secondary cause of liver disease. Its development has been associated with factors as insulin resistance and obesity. In patients with inflammatory bowel disease (IBD), it has been observed a higher prevalence of NAFLD compared to general population, in the presence of less metabolic risk factors, what leads to raise the possibility of the implication of other factors related to IBD itself

Methods: To evaluate the prevalence of NAFLD and non-alcoholic steatohepatitis-related fibrosis in IBD patients
To evaluate metabolic and non-metabolic risk factors of NAFLD
An observational, unicentric, cross-sectional study was carried out in outpatients in the Lozano Blesa University Clinical Hospital (Zaragoza), with the diagnosis of IBD, in whom high alcohol consumption and chronic liver diseases were ruled out.
The diagnosis of NAFLD has been made using non-invasive scores: FLI (Fatty Liver Index), HSI (Hepatic Steatosis Index) and LAP (Lipid Accumulation Product). The diagnosis of NAFLD was performed if two or more score were diagnostic.
The diagnosis of fibrosis has been made using non-invasive scores: FIB-4 and NFS (Non-alcoholic fatty liver disease Fibrosis Score). The positivity of both tests or a test with a positive result associated with a test with an "undetermined" result has been considered as the presence of "advanced fibrosis.

Results: 154 patients (87 men) included, mean age 48 years. Steatosis was definite in 38%, indeterminate in 37%; NAFLD was diagnosed in 61 cases (39.6% of patients). Advanced liver fibrosis was detected in 7 patients (4.8% of total). More detailed data are available in several figures I cannot upload.

Discussion/Conclusion: The prevalence of NAFLD in Spanish patients with IBD was 39.6%, and the prevalence of liver fibrosis was 5.2%.
NAFLD was associated with male gender, age, high BMI and the presence of dyslipidemia.
No association was found with factors related to IBD or its treatment.
Risk of anxiety, depression and poor quality of life in patients with inflammatory bowel disease

Fernando Gomollón (Zaragoza, ES), Paula Belanche (Zaragoza, ES), Carla Gargallo Puyuelo (Zaragoza, ES), Erika Alfambr (Zaragoza, ES), María Teresa Arroyo (Zaragoza, ES), Alberto Lué (Huesca, ES)

Introduction: The measurement of quality of life is especially relevant in chronic diseases. Psychological factors can also influence the patient's perception of health. The presence of a chronic medical condition is often associated with a high level of anxiety and depression. To evaluate Health-related quality of life (HRQL) and risk factors of poor HRQL in patients with inflammatory bowel disease (IBD). To determine prevalence of anxiety and depression and risk factors.

Methods: This research is a cross-sectional prospective study conducted in a public large teaching Hospital integrated into the Spanish National Health System. Population study: consecutive patients attending in the IBD Unit from February 1, 2019 to April 31, 2019. Inclusion criteria: diagnosis of IBD based on conventional clinical, endoscopic, radiographic and histological criteria and age being 18 years or more. Exclusion criteria: inability to adequately complete the questionnaires due to cognitive impairment or unwillingness to participate in the study. HRQL was measured using the disease-specific Inflammatory Bowel Disease Questionnaire (IBDQ-9). Each question is answered using a Likert scale from 1 to 7, where 1 represents worst quality of life and 7 the best (total range: 9–63). The result of the IBDQ-9 is expressed by a score transformed into a percentage on a scale of 0-100, with better HRQL corresponding to a higher score. Anxiety and depression that were evaluated by the Goldberg Anxiety and Depression Scale (GADS). For the multivariate analysis, a logistic regression model was calculated to assess the variables that are independently associated with anxiety, depression and quality of life. A model calculated by steps forward was made.

Results: Detailed results will be available in some tables. Activity of the disease explains in part quality of life, but depression and anxiety remain significant determinants of quality of life even when corrected in multivariate analysis. OR (95% CI) for association of remission, depression and anxiety is respectively (all significant in multivariate) QOL is 0.222 (0.056–0.876), p = 0.032; 7.120 (2.069–24.495) p = 0.002; and 7.806 (2.242–27.181) p = 0.001 respectively.

Discussion/Conclusion: The risk of anxiety and depression in patients with IBD was significantly higher compared to the general population. Anxiety and depression disorders were associated with poor HRQL in a significant sample of consecutive IBD patients at clinic.
The relationship between undernutrition and anemia in ulcerative colitis patients: Cross-sectional study results

Sergei Ivanov (St. Petersburg, RU), Yury Uspenskiy (St. Petersburg, RU), Yulia Fominikh (St. Petersburg, RU), Igor Khoroshilov (St. Petersburg, RU)

Introduction: The anemia and the undernutrition are frequent ulcerative colitis (UC) complications, but the impact of undernutrition to anemia isn’t assessed from point of view of practical approach. Our objective is to assess relationship between of the undernutrition and the anemia in UC patients.

Methods: The cross-sectional retrospective analysis included data from medical records of 80 ulcerative colitis patients. Demographic characteristics, disease behavior, gut involvement extension, immunosuppressive therapy applying, laboratory parameters (hemoglobin and total serum protein levels) were collected. Body mass index (BMI) and fat mass were collected retrospectively from bioimpedance analysis data. Anemia was diagnosed retrospectively by WHO criteria: hemoglobin level less than 13 g/dl for male and less than 12 g/dl for female. Substantial fat mass loss was estimated by Tanita reference tables. A binary logistic regression was performed to study the relationship between nutrition status parameters and anemia occurrence adjusted for demographic and disease-associated characteristics.

Results: Prevalence of anemia in the sample was 40.0%. In adjusted binary logistic model total serum protein level below 64 g/l and substantial fat mass loss were associated with a high odds of anemia occurrence: OR = 5.1 (95% CI: 1.5–17.8) and 8.5 (95% CI: 1.1–63.6) respectively. Adjusted model includes gender, age, disease activity, extent of gut involvement, quantity of relapses from disease beginning and treatment with immunosuppressive medications as confounders.

Discussion/Conclusion: We assume undernutrition is one of the causative agents of anemia in UC patients. Findings in the present study could have significant implications for physicians caring for UC patients with anemia and undernutrition.
Anemia in patients with intestinal inflammatory disease in a reference center in Medellin-Colombia

Fabian Juliao (Medellin, CO), Mateo Arrubla (Medellin, CO), Laura Osorio (Medellin, CO), Joselyn Camargo (Medellin, CO), Juliana Londoño (Medellin, CO), Camilo Cáceres (Medellin, CO), Jhon Carvajal (Medellin, CO), Gabriel Mosquera (Medellin, CO), Jorge Donado (Medellin, CO)

Introduction: Anemia is the most frequent extraintestinal complication in inflammatory bowel disease (IBD), and negatively impacts the quality of life. The objective of this study is to determine the prevalence of anemia in IBD and describe its behavior and treatment in our center.

Methods: Data from patients with IBD from the Pablo Tobón Uribe Hospital in Medellin-Colombia, who have consulted from 2001 to February 2019, were analyzed retrospectively to determine the presence of anemia. To compare two proportions, the Chi square test of independence was used and the Odds Ratio (OR) was estimated with its respective 95% confidence interval (CI).

Results: 759 patients with IBD were documented, 544 (71.6%) presented with ulcerative colitis (UC), 200 (26.3%) Crohn's disease (CD) and 15 non-classifiable IBD (1.9%). In total 185 (24.4%) patients with IBD had anemia, being more frequent in CD (32.5%), than in UC (22.2%) (OR = 0.684, 95% CI: 0.456–0.96, p: 0.03). In 55.1% the cause of anemia is only due to iron deficiency (ADH), in 41.1% it is mixed (ADH plus anemia associated with chronic disease) and in 3.7% it is associated with vitamin B12 deficiency. 47% of patients with IBD had severe anemia. Patients with extensive UC (54.1%) have more anemia than those with non-extensive UC (46.3%) (OR = 4.4, 95% CI: 2.6–7.4, p: 0.001). Patients with severe UC (66.1%) have more anemia compared to non-severe UC (32.3%) (OR = 4.95, 95% CI: 2.87–8.51, p: 0.000). In CD, subjects with inflammatory behavior (B1) (26.2%) have less anemia than patients with non-inflammatory behavior (B2, B3) (73.9%). (OR = 0.35, 95% CI: 0.18–0.67, p: 0.000). Patients with UC and anemia have a higher frequency of hospitalization (OR = 1.95, 95% CI: 1.37–2.77, p: 0.000). 44.3% of patients with anemia received no treatment, 19.5% received oral iron, 20.0% intravenous iron and 16.2% were transfused.

Discussion/Conclusion: Anemia is a frequent complication of IBD in our environment (24.4%), and is associated with greater severity and hospitalization, both in UC and in CD. Despite international guidelines for the management of anemia in IBD, the management of this complication of IBD is sub-optimal.
Characterization of the intestinal inflammatory disease in Colombia: Results of a national registry

Fabian Julio (Medellin, CO), Fabian Puentes (Manizales, CO), Rocío López (Bogota, CO), Maria Saffon (Medellin, CO), Gustavo Reyes (Bogota, CO), Viviana Parra (Bogota, CO), Maria Galiano (Bogota, CO), Marcos Barraza (Pereira, CO), Jenny Molano (Bogota, CO), Eligio Alvarez (Monteria, CO), Ruben Corrales (Montería, CO), Luz Vargas (Barranquilla, CO), Patricia Alvarez (Bogota, CO), Luis Limas (Tunja, CO), Paola Yance (Santa Marta, CO), Hernán Ballen (Bogota, CO), Diaz Felha (Cartagena, CO), Jose Bareño (Medellin, CO)

Introduction: The incidence and prevalence of inflammatory bowel disease (IBD), both of ulcerative colitis (UC) and Crohn’s disease (CD) are increasing worldwide. The main objective of this study is to determine the clinical, sociodemographic and treatment characteristics of IBD, in a registry of the Colombian population.

Methods: This is a descriptive, analytical, multicenter, cross-sectional observational study of a national cohort, which includes all patients with IBD who have attended in 17 different centers in 9 cities in the country.

Results: 2291 patients with IBD, 1813 (79.1%) with UC, 456 (19.9%) CD, and 20 with non-classifiable IBD (0.9%) were documented. The CU / EC ratio is 3.9:1. Regarding the cumulative treatment of UC, 93.6% have received 5-ASA, 32.5% azathioprine, 52.4% steroids and 18.5% biological therapy. In CD, 60.5% have received 5-ASA, 49.4% azathioprine, 61.4% steroids and 47.3% biological therapy. 27.6% of patients with CD have required surgical management, and 6.7% with UC (OR = 5.30, 95% CI: 3.99–7.03, p = 0.000). 59.3% of patients with CD required hospitalization and 38.2% of individuals with UC, (OR = 2.36, 95% CI: 1.91–2.91, p = 0.000). 10 patients with CD (2.19%) and 13 patients with UC (0.71%) died (OR = 3.07, 95% CI: 1.34–7.05, p: 0.015). The patients with extensive UC had a greater use of biological therapy (OR = 2.78, 95% CI: 2.10–3.65, p: 0.000), higher surgery rate (OR = 5.4, 95% CI: 3.5–8.3, p: 0.000), and higher frequency of hospitalization (OR = 4.34, 95% CI: 3.47–5.44, p: 0.000). Patients with severe UC had greater use of biological therapy (OR = 5.04, 95% CI: 3.75–6.78, p: 0.000), higher surgery rate (OR = 8.64, 95% CI: 5.4–13.78, p: 0.000), and higher frequency of hospitalization (OR = 28.45, 95% CI: 19.9–40.7, p: 0.000). Patients with inflammatory CD (B1) had a lower frequency of hospitalization (OR = 0.12, 95% CI: 0.07–0.19, p: 0.000), lower surgery rate (OR = 0.08, 95% CI: 0.043–0.15, p: 0.000) and lower use of biological therapy (OR = 0.26, 95% CI: 0.17–0.41, p: 0.000).

Discussion/Conclusion: In our country there is a predominance of CU over CD (3.9:1), as in other Latin American countries. There is a high percentage of 5-ASA drug use in CD (60.5%) and almost half of the patients (47.3%) require biological therapy. Patients with extensive and severe UC, and subjects with non-inflammatory behavioral CD (B1), have a worse prognosis.
Cross-sectional study using real world data on the active detection of patients with inflammatory bowel disease in Kazakhstan

Jamilya Kaibullayeva (Almaty, KZ), Aliya Ualiyeva (Almaty, KZ), Ainash Oshibayeva (Almaty, KZ), Anar Dushpanova (Almaty, KZ), Alexander Nersesov (Almaty, KZ), Aidana Nargelova (Almaty, KZ), Dariga Kushimova (Aktobe, KZ), Yerlan Bazargaliyev (Aktobe, KZ), Asyltay Nauryzbayeva (Astana, KZ), Irina Losinskaya (Karaganda, KZ), Elena Gladysheva (Pavlodar, KZ), Ayagoz Eskozhina (Petropavlovsk, KZ), Beisenbi Kuzhakhmetov (Kostanay, KZ), Karlygash Zhylybayeva (Semey, KZ), Alexey Oleinik (Ust-Kamenogorsk, KZ), Amangul Duisenova (Almaty, KZ), Asem Kurmangaliyeva (Shymkent, KZ), Shirin Aliyeva (Shymkent, KZ), Nazerke Kuanysh (Taraz, KZ), Tatyana Tsoy (Taraz, KZ), Lyazzat Syzdykova (Shymkent, KZ), Guldana Mutaliyeva (Shymkent, KZ), Meyramkul Kalisayeva (Taraz, KZ), Saule Beisenova (Taraz, KZ), Diana Satkeyeva (Almaty, KZ), Elmira Kuantay (Almaty, KZ), Aigul Anefiyayeva (Almaty, KZ), Nazugum Ashimova (Almaty, KZ), Zukhra Sopiyeva (Almaty, KZ), Guldariya Zaurbayeva (Almaty, KZ), Moldir Khozhakhmedova (Almaty, KZ), Nurailym Abu (Almaty, KZ), Nurgul Aldabergenova (Almaty, KZ), Gulmira Boskina (Almaty, KZ), Aigerim Tolebai (Almaty, KZ), Aizat Seiltkaziyeva (Almaty, KZ), Gulsana Nuraliyeva (Almaty, KZ), Aizhan Zeinetay (Almaty, KZ), Dina Borash (Almaty, KZ), Aisulu Gainutdin (Almaty, KZ), Gulzhana Ibabayeva (Almaty, KZ), Perizat Medetova (Almaty, KZ), Gulmira Oshakbayeva (Almaty, KZ), Aigerim Tanbayeva (Almaty, KZ), Salavat Kuldeyev (Almaty, KZ), Ainash Tanabayeva (Almaty, KZ), Yermek Duisеbaev (Almaty, KZ), Elchin Tagiyev (Almaty, KZ), Gyuzel Jakupova (Shymkent, KZ), Saule Bizhigitova (Almaty, KZ), Raushan Dossanova (Kokshetau, KZ)

Introduction: Currently there is no registry of patients with inflammatory bowel disease (IBD) in Kazakhstan. According to official statistics for the year 2017, the prevalence of Crohn’s Disease (CD) was 6.3 per 100,000 and that of ulcerative colitis (UC) was 31.5 per 100,000. The purpose of this study was to actively identify the prevalence of IBD among the adult population of Kazakhstan.

Methods: This study undertook active identification of cases of IBD among the adult population of Kazakhstan using the 8-item CalproQuest questionnaire (Hasler S et al.). If positive IBD symptoms were elicited by the questionnaire, the respondent underwent fecal calprotectin (FC) testing by a semiquantitative method (PreventID® CalDetect® 50/200). If FC was elevated, further clinical assessment was carried out by an IBD specialist. Eligible subjects were men and women aged 18 and over.
**Results:** A total of 115,556 questionnaires were distributed (response rates was 86.5%, mean age 44.2 ± 15.1 years), of which 1084 (1.08%) reported symptoms concerning for IBD. Of these, 181 of them had a positive express analysis of FC, and 128 of 181 were confirmed to have IBD (36 CD and 92 UC). Among the original sample, the prevalence of IBD was 110.8 per 100,000, including CD 31.2 per 100,000 and UC 79.6 per 100,000. The prevalence of CD was 21.6 per 100,000 among males vs. females 36.6 per 100,000 and for UC 107.9 and 63.6 per 100,000, respectively. The average age of patients with CD was 39.4 ± 14.8 years, and with UC was 41.6 ± 15.7 years.

**Discussion/Conclusion:** Kazakhstan holds an intermediate position between East and West Asia, with diet and lifestyle traditions similar to other Central Asian countries. Therefore, the epidemiology of IBD in Kazakhstan can be used as a proxy for its prevalence throughout Central Asia.
Administration of biosimilar drugs to IBD patients

Michal Konecny (Olomouc, CZ)

Introduction: Biological treatment (BT) represents a major breakthrough in the treatment of inflammatory bowel disease (IBD). Besides the original molecules, copies of them have been developed, i.e. biologically similar (biosimilar) drugs. After the expiry of the patent on the original products and approval by the Regulatory Authority, the biosimilars are introduced into clinical practice. Biosimilar IFX has been approved for the treatment of IBD in the Czech Republic since 2013, and biosimilar ADA since 2017.

Methods: The aim of this study is to present the 6-year positive experience with the application of biosimilar drugs to patients naive for treatment with the anti-TNF alpha or prepared from the original IFX or ADA, or another anti-TNF alpha antibody. From the beginning of 2014, we started the BT with biosimilar IFX in 28 patients with BT naive patients, in 16 cases with Crohn's disease (CD) and 12 cases with ulcerative colitis (UC). In the observed period, 46 patients (31 CD and 15 UC) were transferred from the original to the biosimilar IFX. Since 2018, biosimilar ADA was administered in 9 patients naive for BT, with CD in 6 cases and UC in 3 cases. In this period, 29 patients, 17 CD and 12 UC, were transferred from original to biosimilar ADA.

Results: IFX and ADA biosimilars has been administered to 102 patients. In 12 cases of IFX administration, we registered side effects (allergies, headaches, paraesthesia). In two patients the treatment had to be discontinued, while in the rest of the patients, complete reconstitution occurred upon deceleration of the infusion. Although a slight local reaction in the injection site was observed in three ADA applications, we did not have to stop ADA treatment in any patient because of side effects. Most patients (88.3%) are still in clinical, laboratory and endoscopic remission.

Discussion/Conclusion: In the case of a correct indication and proper monitoring of the patients, administering IFX and ADA biosimilars to patients with IBD is an effective, safe, and cost-efficient treatment.
Deviations in platelet and red blood cell indices in ulcerative colitis patients treated with vedolizumab

Agata Michalak (Lublin, PL), Halina Cichoż-Lach (Lublin, PL), Katarzyna Laskowska (Lublin, PL), Piotr Radwan (Lublin, PL), Beata Kasztelan-Szczerbińska (Lublin, PL)

Introduction: There is a growing body of evidence that routinely obtained non-invasive blood indices could become markers of inflammation in ulcerative colitis (UC) patients. We aimed in our survey to verify relationships between hematological parameters in UC patients treated with vedolizumab (VEDO).

Methods: Forty participants were enrolled to the study: 20 patients with active UC and 20 persons in control group. UC patients were treated with VEDO (3 doses of standard induction therapy). Mean platelet volume (MPV), plateletcrit (PCT), platelet distribution width (PDW) and red blood cell distribution width (RDW) were measured in the blood of UC patients at 0, 2, and 6 weeks of induction regimen and in follow-up six weeks later. Results were compared with control group.

Results: Baseline MPV level in UC group was lower (p < 0.0001) and PCT together with RDW values – higher (p < 0.01 and p < 0.0001, respectively) in comparison to controls. MPV level was under normal range, RDW was too high, PDW and PCT values remained within the normal range. After 3 doses of VEDO, MPV level increased (p < 0.05), however it did not normalize. AUC value and proposed cut-off for MPV in the acute phase of UC were: 0.996 and < 7.3 fl, respectively. C-reactive protein (CRP) correlated positively with RDW (p < 0.01) and negatively with MPV (p < 0.0001) prior to the treatment with VEDO.

Discussion/Conclusion: Deviations in red blood cell and platelet indices seem to be closely linked to inflammatory process in UC patients and affected by VEDO therapy. Especially MPV could serve the role of a potential diagnostic tool in the monitoring of UC patients. Decrease in MPV and increase in RDW accompany the exacerbation of UC. According to available literature, it seems to be the first study on hematological indices in UC patients treated with VEDO.
Quality of life in patients with inflammatory bowel disease: About a Tunisian monocentric study

Soumaya Nsibi (La Marsa, TN), Rym Ennaifer (La Marsa, TN), Myriam Ayari (La Marsa, TN), Bochra Bouchabou (La Marsa, TN), Fatma Ben Farhat (La Marsa, TN), Houda Ben Nejma (La Marsa, TN)

Introduction: The assessment of quality of life (QOL) in patients with inflammatory bowel disease (IBD) has become essential in assessing the effects of this chronic and sometimes disabling condition. As a result, several psychometric questionnaires were proposed. The objective of our study was to evaluate the QDV of patients followed for IBD in our department.

Methods: This was a cross-sectional study involving all patients followed for IBD who presented for consultation during the last four months prior to the study (June–July to August–September 2019). We had a telephone conversation with this group of patients. We used the short inflammatory bowel disease questionnaire (S-IBDQ). It is a validated score that includes 10 questions including different items: social, emotional impact of the disease, general and digestive signs. Each item is rated from 1 (1 = severe problem) to 7 (no problem) and the total scores range from 10 to 70. The higher the score, the better the quality of life.

Results: Fifty-five patients were included with a mean age of 45.6 years [20–72] with a male predominance (sex-ratio = 1.5). Forty patients had Crohn's disease. The ileac location was noted in 15 patients or 27%; 18 patients had ileocolic involvement (33%). Ano-perineal manifestations were present in 12% of cases. Fifteen patients had ulcerative colitis (UC). Three had distal localization. Pan-colitis form was found in 6 patients. Eighteen patients were on azathioprine, 7 were on combination therapy. Salazopyrin and oral corticosteroids were prescribed in 9 and 11 patients respectively. Ten patients were in therapeutic abstention at the time of the study. Overall scores ranged from 24 to 69. The average score was 48. Twenty-five patients (45%) felt that their social circle was reduced because of the disease. Thirty (54%) patients had a depressive profile. Digestive signs were present in half of the cases: 28 patients had intermittent abdominal pain in the last 15 days before our telephone conversation. General signs were dominated by fatigue, which was present and disabling in 20 patients (36%). The significant impact of the disease on QDV, evidenced by a score (S-IBDQ) < 40, was observed in 12 patients (22%). Extensive ileac form for patients with Crohn's disease and a pan-colitis form of UC were significantly (p < 0.005) associated with a low S-IBDQ score.

Discussion/Conclusion: Quality of life assessment is a crucial pillar in the management of patients monitored for IBD. The use of this reproducible and valid questionnaire will facilitate its implementation in everyday practice.
Phenotypic analysis of patients with inflammatory bowel disease: 23-year data of a center in a South American country

Cristian Camilo Paez Cancelado (Bogota, CO),
Belen Elvira Mendoza De Molano (Bogota, CO),
Rafael Garcia Duperly (Bogota, CO),
Adriana Margarita Maria Rey Rubiano (Bogota, CO),
Rocio Del Pilar Lopez Panqueva (Bogota, CO),
Eduardo Emilio Londoño Schimmer (Bogota, CO),
Jorge Enrique Padrón Mercado (Bogota, CO),
Marcela Mejía Arango (Bogota, CO), Roberto Javier Vallejo Madroñero (Bogota, CO),
Jong Hyuk Park (Bogota, CO)

Introduction: Inflammatory bowel disease (IBD) includes ulcerative colitis (UC) and Crohn’s disease (CD). In the last decade, there have been introduced therapeutic changes that have revolutionized the pharmacologic and surgical management of patients with IBD. The incidence of UC and CD has been increasing in Latin America but the exact prevalence is unknown. Our objective is to describe the demographic characteristics, clinical and therapeutic aspects of the IBD in patients that have presented in the University Hospital Fundación Santa Fe de Bogotá (UH-FSFB), Colombia.

Methods: Retrospective Descriptive Cohort Study. Clinical histories, pathology reports, and endoscopic results from our software HI-ISIS of the UH-FSFB and specialists’ softwares between January 1996–February 2019 were recollected, stored in Excel and analyzed using IBM SPSS Statistics Visor. Patients with diagnosis of IBD were included. Patients with incomplete clinical histories were excluded.

Results: From 398 patients included in this study, 72.1% had UC, 25.6% CD and 2.3% Indeterminate Colitis. The average age of diagnosis was 43.54 years (range: 12–91). In both patients with UC and CD there were smaller proportions of men than women (0.9:1 for UC and 0.7:1 for CD).
Of the patients with UC, 46.3% had been hospitalized. 37.2% presented with proctitis, 23.8% left colitis and 39% with pancolitis. 13.5% had an asymptomatic clinical picture, 22.4% mild, 15.3% moderate, and 48.8% severe. 12.9% received biological therapy (BT). 24.3% of patients received a second line BT. 15% required surgical interventions (SI), of which there were no mortalities. 27% who were receiving BT required SI.
Of the patients with CD, 82.4% required hospitalization. 43.1% had an ileal, 9.8% colonic, 39.2% ileal-colonic, 0% isolated upper digestive and 21.6% perianal compromise. 34.3% had non-stenosing behavior, 49% stenosing and 16.7% penetrating. 44.1% of patients with CD received BT of which 40% required a second line BT. 55.9% required SI, of which 1 mortality was reported. 71.1% who were receiving BT required a SI.

Discussion/Conclusion: Our study contributes to the epidemiology and integral management required by patients with IBD in our environment. More studies are recommended that replicate our methodology in the population with IBD in both Colombia and Latin America.
Epidemiological and clinical characterization of inflammatory bowel disease (IBD) in Latin America and the Caribbean: A multicenter study (EPI-LATAM IBD) from the Pan American Crohn’s and Colitis Organization (PANCCO)

Norma N. Parra-Holguín (Mexico City, MX), Jesús K. Yamamoto-Furusho (Mexico City, MX), EII Grupo-Colombiano (Bogota, CO), Francisco Bosques-Padilla (Monterrey, MX), Guillermo R. Veitia-Velásquez (Caracas, VE), Esther A. Torres (San Juan, PR), Felipe N. Piñol-Jiménez (Habana, CU), Sócrates Bautista (Santo Domingo, DO), Aleydi M. Frías-Santana (Santo Domingo, DO), Keyla C. Villa-Ovalles (Santo Domingo, DO), Guillermo Otoya-Moreno (Lima, PE), Beatriz Iadé Vergara (Montevideo, UY), Study-Group EPILATAM (Mexico City, MX)

Introduction: Inflammatory bowel disease (IBD) is currently recognized as a global health problem, since its incidence and prevalence have increased significantly over the years. There are no studies that report the demographic and clinical characteristics of IBD in Latin American and Caribbean countries. Our aim is to report the clinical and epidemiological characteristics in Latin American and Caribbean.

Methods: This is a multicenter cohort study in which 8 Latin American and Caribbean countries were included with 4096 patients: Colombia, Cuba, Mexico, Peru, Puerto Rico, Dominican Republic, Uruguay and Venezuela during the period from August 2017 to September 2019, all patients have a confirmed diagnosis of IBD.

Results: CD was more frequent than UC in the following countries: Puerto Rico with 68.6%, Dominican Republic 55.9% and Peru with 53.1%, while in the rest of the countries the frequency of UC predominated, in Colombia by 79.2%, Venezuela in 78.4%, Cuba in 69.9% and Mexico in 76.1%. The Caribbean countries had a significantly higher frequency in the fistulizing phenotype in CD with 64.4% (p = 0.0001), steroid dependence in 11.31% (p = 0.002), steroid resistance in 26.56% (p = 0.0001), thiopurine intolerance in 1.29% (p = 0.0002), extraintestinal manifestations in 53.84% (p = 0.0001), IBD surgeries in 30.54% (p = 0.0001) and family history of IBD reported a frequency of 13.57% (p = 0.0001). For Latin America, the frequency of pancolitis was more frequent in 46.33% (p = 0001) in patients with UC. The factors associated with the use of biological therapy were: fistulizing phenotype in CD, steroid resistance, thiopurine intolerance, presence of extraintestinal manifestations and IBD related surgeries.

Discussion/Conclusion: This is the first multicenter study conducted in Latin America that showed the clinical heterogeneity of the disease among Latin America and the Caribbean countries.
Experience on the use of methotrexate in Crohn's disease from a third care level hospital

Norma N. Parra-Holguín (Mexico City, MX)

Introduction: Crohn's disease (CD) is an autoimmune disease characterized by chronic inflammation of the gastrointestinal tract with periods of relapse and remission. The use of methotrexate (MTX) is recommended for patients with CD who are intolerant or refractory to thiopurines (azathioprine and 6-mercaptopurine) or steroid dependent with a reported remission induction of up to 39% of patients and maintenance of remission in 65% of them. Our aim is to describe the clinical experience of the use of methotrexate in Mexican patients with CD in relation to its efficacy and presence of adverse effects.

Methods: This is a retrospective cohort study in which 88 patients with CD were reviewed and only 35 patients with current or previous MTX use during the period of January 2014 to May 2019. Induction of clinical remission was defined at week 16 and in the maintenance phase at week 24.

Results: We analyzed 35 patients with current or previous MTX use, 18 patients (51.4%) were women and 17 (48.6%) men, with an average current age of 42 years (21–75). The most frequent phenotype was strictureing in 15 (42.9%) The indications for starting with MTX were thiopurine refractoriness in 25 (71.4%); thiopurine intolerance 8 (22.9%) and aggressive clinical course in 2 (5.7%). Only 26 of 35 patients with CD (74.2%) start to be treated with MTX and 9 (25.7%) discontinued treatment. In relation to its efficacy, 19 of 26 (73%) had clinical activity, of which only 16 of 19 (84%) induced clinical remission. On the other hand, the remaining 7 of 26 patients (26.9%) maintained remission with MTX. Regarding safety, the main adverse effects were gastrointestinal symptoms in 4 patients (11.4%); general malaise in 1 (2.85%) and repeated infections in 1 (2.85%).

Discussion/Conclusion: MTX treatment was effective in 84% and adverse effects occurred in 14.2%.
High frequency of primary hypothyroidism in Mexican patients with inflammatory bowel disease

Norma N. Parra-Holguín (Mexico City, MX), Jesús K. Yamamoto-Furusho (Mexico City, MX)

Introduction: Inflammatory Bowel Disease (IBD) is characterized by chronic inflammation, several studies have shown a higher frequency of hyperthyroidism in IBD, but not in primary hypothyroidism which prevalence ranges from 0.53% to 3.8%. The prevalence in Mexico of primary hypothyroidism in the general population is 1%. Our aim is to evaluate the frequency of primary hypothyroidism in Mexican patients with IBD and its associated factors.

Methods: This is a retrospective study that included 429 patients with IBD. All patients with thyroidectomy, exposure to radioactive iodine 131, papillary thyroid carcinoma and autoimmune thyroiditis based on the presence of anti-thyroid antibodies were excluded.

Results: Of a total of 429 patients with IBD, primary hypothyroidism was found in 63 of 429 patients (14.6%), of which 43 of 63 (68.3%) with a diagnosis of ulcerative colitis (UC) and 20 of 63 (31.7%) with Crohn’s disease (CD). We excluded 3 patients with papillary thyroid carcinoma, 2 with thyroidectomy, 4 with exposure to radioactive iodine and 3 with autoimmune thyroiditis. In 47 patients (74.6%) were women and 16 (25.4%) men, with a current age of 59 years (22–82) and an average age at diagnosis of 36 years (8-78). In UC, the main extension was pancolitis in 33 patients (76.7%); left colitis in 2 (4.7%); proctosigmoiditis in 5 (11.6%) and proctitis in 3 (7%). The most frequent location in CD was colonic ileum in 14 (70%); terminal ileum in 5 (25%) and colonic in 1 (5%). No associated factors were found in the development of primary hypothyroidism in patients with IBD.

Discussion/Conclusion: There is a high frequency of 14.6% in primary non-autoimmune hypothyroidism in Mexican patients with IBD.
Impact of fatigue on the quality of life and sleep in Mexican patients with inflammatory bowel disease

Norma N. Parra-Holguín (Mexico City, MX), Jesús K. Yamamoto-Furusho (Mexico City, MX), Ana Fresán-Orellana (Mexico City, MX)

Introduction: Inflammatory bowel disease (IBD) refers to ulcerative colitis (UC) and Crohn's disease (CD). It has been reported in IBD patients that up to 44% of patients have changes in sleep quality and up to 72% have symptoms of fatigue. Patients with IBD have a significantly lower quality of life related to health than the general population. The objective of the present study is the validation of the Fatigue Scale in IBD (IBD-F) in Mexican patients and to evaluate the quality of sleep and fatigue in IBD patients according to their quality of life.

Methods: This is a cross-sectional study which included 98 patients aged of 18 to 65 years with diagnosis of IBD during the period from March to June 2019, to whom 3 evaluation instruments were applied: IBD-F, Pittsburgh Sleep Quality Index (PSQI) and Quality of life in patients with IBD (IBDQ-32).

Results: Of the 98 patients included in the study, 58.2% (n = 57 were women), with an average age of 44.9 ± 12.1 years. IBD was found in clinical remission in 79.6%. It was determined that the IBD-F instrument and an adequate internal consistency (as a measure of reliability) with Cronbach's alpha values of 0.87 for Factor 1: Fatigue and 0.95 for Factor 2: Impact, with a total alpha of the instrument of 0.95. Patients with severe fatigue showed major alterations in the quality of life in the dimensions of digestive (p < 0.001), systemic (p < 0.05) and emotional symptoms (p < 0.05). In comparison with sleep quality alterations that affected four dimensions in the quality of life.

Discussion/Conclusion: This is the first fatigue scale validated in Spanish language exclusively for Mexican patients with IBD. The present study demonstrated the impact of fatigue and sleep quality on the decrease in the quality of life in IBD.
Effect of vedolizumab on extraintestinal manifestations of inflammatory bowel diseases


Introduction: Given its targeted mechanism of action, the effect of vedolizumab (VDZ) on extra-intestinal manifestations (EIM) of Crohn’s disease (CD) or ulcerative colitis (UC) remains unclear. We aimed to determine the clinical benefit of VDZ on the treatment of EIM in patients with inflammatory bowel diseases (IBD).

Methods: Retrospective review of all IBD patients treated with VDZ with a history of EIM evaluated at single tertiary care center between January 2008–2018. Primary outcome included worsening of EIM, defined by new flare or need for corticosteroid use.

Results: A total of 76 patients (78% CD, 21% UC, 1% indeterminate colitis) were included in the study. Ninety six percent of patients had been diagnosed with EIM prior to starting VDZ. The most common EIM were: peripheral arthritis (54%), oral stomatitis (22%), sacroiliitis (13%), uveitis/episcleritis (11%), skin EIM (11%) and ankylosing spondylitis (5%). Ten patients (13%) presented with more than one EIM, concurrently.

One third of patients (37%) described worsening of their EIM symptoms following initiation of VDZ. This was more common among the patients with spondyloarthritis and sacroiliitis when compared to the non-arthritis group (49% vs. 15%, p < 0.003). Most patients described worsening in severity (81%) or recurrent flares (19%) of EIM, with steroids being the most common treatment option (78%). History of perianal disease at the start of VDZ was associated with less worsening of EIM (29% vs. 53%, p < 0.01). No difference was seen in the group that had worsening of EIM with regards to age, gender, BMI, type of IBD, VDZ dosing, use of combination therapy, disease location or prior therapies.

Discussion/Conclusion: The use of VDZ appears to be associated with worsening of EIM in patients with IBD. Arthritis-related EIM commonly worsened after VDZ initiation. Worsening of EIM was less common in patients with perianal disease at the start of VDZ.
Ulcerative colitis with sudden exacerbation and the relationship with Clostridioides difficile infection: An observational study

Susanna Scharrer-Cabello (Monterrey, MX), Daniel Benavides-Salgado (Monterrey, MX), José Guerrero-Tamez (Monterrey, MX), Christian Alfaro-Rivera (Monterrey, MX), Estefany Yin-Bañuelos (Baja California, MX), Berenice González-Gómez (Monterrey, MX), Joel Jáquez-Quintana (Monterrey, MX), Francisco Bosques-Padilla (Monterrey, MX)

Introduction: Inflammatory bowel disease (IBD) has increased in Mexico in recent years as shown by a nationwide cohort study over 15 years (2000–2017) which reported an incidence of 0.16 per 100,000 person-years and prevalence of 1.45 per 100,000 person-years for ulcerative colitis (UC), with a steady increase over that time period of 5.3-fold. Clostridioides difficile infection (CDI), is increasing in prevalence and severity in the last decade and IBD is a risk factor for CDI, with a stronger association for UC than Crohn’s disease. Previous studies have shown that about 20% of patients admitted for relapsing IBD can have positive tests for CDI. Our primary objective was to describe the clinical characteristics of UC patients at our center. Furthermore, as a secondary objective assess the frequency of CDI in acute episodes of activity in UC cases.

Methods: This is an observational study which included a total of 71 consecutive incident cases seen from 2001 to 2019 with UC that were admitted to the hospital with sudden exacerbation. All patients were screened for CDI by means of GDH testing, followed by toxins A and B immunoassay.

Results: The median age was 35 years with a slight predominance of the female gender (53.5%). Most of the patients initially presented with pancolitis (50.7%), 35.2% left-sided, and 14.1% proctitis. Approximately half of the patients (49.3%) had a history of steroid use. 90.1% and 28.2% of patients were treated with mesalazine and Azathioprine, respectively. Colectomy was performed in a total of 8 patients (11.3%). Only 4 patients (5.6%) were diagnosed with DCI and flare of UC, none of those required proctocolectomy.

Discussion/Conclusion: During a time period of almost 20 years, most of our UC cohort had pancolitis. CDI was reported in only 5.6% of our patients, which is lower compared to previous studies with reported rates of up to 20% positive CDI testing.
The relationship between the duration of the diagnosis of IBD and clinical features of the illness

Maria Skalinskaya (St. Petersburg, RU), Ekaterina Skazyvaeva (St. Petersburg, RU), Igor Bakulin (St. Petersburg, RU), Armen Vardanyan (Moscow, RU), Kristina Ivanova (St. Petersburg, RU), Irina Rasmagina (St. Petersburg, RU), Diana Komarova (St. Petersburg, RU)

Introduction: Inflammatory bowel disease (IBD) - ulcerative colitis (UC) and Crohn’s disease (CD) are at the peak of discussion by gastroenterologists and coloproctologists in the past few decades. Late diagnosis leads to an increase in the number of severe forms of the disease, which entails the development of life-threatening complications and extraintestinal manifestations of IBD.

Methods: Retrospectively studied the data of 1130 patients included in the North-West Register of IBD, with an established diagnosis of UC or CD. We evaluated the dynamics of the diagnosis of IBD, the nature of the disease, the incidence of intestinal complications and extraintestinal manifestations.

Results: According to the register of IBD, the number of patients with UC was 58.7%, with CD – 41.3%, i.e. the ratio of UC/CD was 1.42. According to the Register, the duration of symptoms before diagnosis in patients with UC in 81.8% of cases was no more than 4 years, in 10.9% of patients this interval was 4–9 years, in 3.6% – 9–13 years, 1.9% - 13-18 years old, and another 1.8% of patients - more than 20 years. And in patients with CD: 36.9% – 1–2 years, 22.6% – 2–3 years, 16.7% – 3–5 years, 10.7% – 5–10 years, 7% – 10–15 years, and 6% – more than 15 years.

At the same time, the average duration from the onset of symptoms to establishing a diagnosis is 2.3 years (27.4 months) for CD, 1.1 years for UC (12.1 months).

By the nature of the course of the disease, 52% of patients had a mild course, 43% had a moderate course, and 5% had a severe course.

Intestinal complications among patients with CD were noted in 41.5%. Their structure includes: abdominal infiltrates (16.6%), fistulas (13.1%), abdominal abscesses (4.9%), intestinal strictures (50.8%).

Among the patients of the Register extraintestinal manifestations were observed in 43.4% of patients, while 25% of them revealed more than one extraintestinal manifestation. The most common extraintestinal manifestations are signs of musculoskeletal system involvement. Joint manifestations according to the results of the Register analysis were noted by 17.5% of all included patients.

In 62% of patients with CD, complications developed in the first 4 years of the course of the disease, later than 4 years in 38% of patients. For UC, the data were as follows: in 58.9% of patients, complications developed up to 4 years from the onset of the disease, and in 41.1% after 4 years.

In patients with complications, the diagnostic period was about 2.9 years; on the contrary, in patients who did not suffer from any complications, this period was 2.4 years.
Among the patients of the Register, 69.3% of patients during their illness needed one or more hospitalizations associated with IBD, and 15.8% of patients underwent surgery for the disease. According to the Register, 74% of patients who underwent surgery had a diagnosis period of up to 1 year. Surgery performed on average 2.2 years after the onset of the disease.

**Discussion/Conclusion:** Based on the data obtained, it can be concluded that the main part of complications occurs in the first few years after the onset of the disease. With late diagnosis the likelihood of developing not only intestinal complications, but also extraintestinal manifestations is significantly increased. That is reflected a more severe course of the disease. The shorter terms for diagnosing IBD in patients with a need for surgical treatment is explained by more pronounced symptoms requiring urgent medical attention.
The frequency of joint manifestations of inflammatory bowel disease in the practice of a rheumatologist

Olena Sulima (Dnipro, UA), Volodymyr Sulyma (Dnipro, UA)

Introduction: Joint manifestations of inflammatory bowel diseases (IBD) are observed in 30% of cases. Their largest share is in total forms of ulcerative colitis (UC) 85–90% and Crohn’s disease (CD) involving the colon 30–35% or large and small intestines 60%. The pathogenesis of articular manifestations remains unclear. The importance of increased permeability of the intestinal wall, which is noted in patients with UC and CD, is discussed, as a result of which the components of the membrane wall of bacteria enter the bloodstream. These components act as peptide antigens that can lead to the development of arthritis. Contacting the molecules of histocompatibility complexes and further activating T-lymphocytes, peptides lead to joint inflammation. From the point of view of a rheumatologist, the articular manifestations of IBD are classified as seronegative spondyloarthropathies.

Methods: During 2013–2018, we studied the frequency of treatment of patients with IBD with extraintestinal articular manifestations for examination to a rheumatologist. We analyzed the ratio of the number of patients with IBD having joint manifestations, which were confirmed and diagnosed by a rheumatologist or consulted in the areas of a gastroenterologist and a surgeon-proctologist.

Results: All patients who turned to a rheumatologist with joint manifestations over the years were referred by a gastroenterologist (38%), surgeon-proctologist (14%) and these extraintestinal manifestations of IBD were suspected and confirmed by a rheumatologist (48%).

Discussion/Conclusion: The need for a differentiated approach to the treatment of peripheral arthritis and any axial skeletal lesions is noted, the role of 5-aminosalicylic acid (5-ASA) drugs, steroidal and non-steroidal anti-inflammatory drugs (NSAIDs), immunosuppressant and biological drugs in the treatment of articular syndrome in IBD is evaluated. It is indicated that patients with IBD having of joint manifestations should be observed jointly by a rheumatologist, gastroenterologist and a proctologist.
The results of complex treatment of patients with inflammatory bowel diseases using 5-aminosalicylic acid (5-ASA) drugs, corticosteroids, immunosuppressants and biological therapy

Volodymyr Sulyma (Dnipro, UA), Yakiv Bereznytskyj (Dnipro, UA), Volodymyr Gaponov (Dnipro, UA), Sergij Malinovskyj (Dnipro, UA), Igor Yuschenko (Dnipro, UA), Olena Sulima (Dnipro, UA)

Introduction: In the absence of a positive response during treatment with 5-ASA drugs and hormones, reserve drugs - immunosuppressant’s are prescribed, which in some cases does not solve the problem of treating refractory forms of Ulcerative colitis (UC) and Crohn’s disease (CD). In addition, the use of immunosuppressant’s in certain least limited to a wide range of side effects characteristic of cytostatic. The development of refractoriness to treatment is observed on average in 35–40% of patients and leads to severe complications, surgical interventions and disability of young people working age. Currently, in the complex treatment of this category of patients using "biological" drugs. The biological method is based on concept of the leading role of pro-inflammatory cytokines in the pathogenesis of intestinal inflammation and the possible blockade of their biological effects by anti-inflammatory cytokines. Quite effective and safe with refractory clinical inflammatory bowel disease, is infliximab.

Methods: We study used infliximab for treatment of patients with inflammatory bowel diseases in complex therapy with 5-ASA drugs, corticosteroids and immunosuppressants: 15 patients with UC and 5 patients with CD.
In group patients with UC application for treatment mesalazine (Salofalk®) with steroidal drugs, immunosuppressant’s and initial dose of infliximab (Remicade®).
In group patients with CD application for treatment budesonide (Budenofalk®) with immunosuppressant’s and initial dose of infliximab (Remicade®).

Results: In all patients prolonged remission, clinical improvement, endoscopic, histological and laboratory indicators. In 2 patients (1 patients with UC and 1 patients with CD), a positive dynamics of the state was noted, but a recurrent course remained diseases due to lack of opportunity receiving a full course of treatment.

Discussion/Conclusion: The experience of our use of infliximab (Remicade®) in combination with 5-ASA, corticosteroids and immunosuppressant testifies to its effectiveness in refractory forms of inflammatory bowel diseases with development persistent remission in patients with UC and CD.
The presence of pancolitis was associated with the development of any type of neoplasia in patients with ulcerative colitis

Joel Toledo (Mexico City, MX)

Introduction: Ulcerative Colitis (UC) is characterized by a pattern of continuous affection in colonic mucosa and submucosa with variable extension from rectum to the proximal colonic segment. In previous studies it was determined that having UC was related with a risk at least 5 times higher than normal of presenting colorectal cancer. The aim of the present study was to determine the frequency of any cancer in Mexican patients with UC and the factors associated to its development.

Methods: Retrospective study that included 190 patients with a definitive diagnosis of UC. Sociodemographic, clinical and disease related variables were registered from clinical charts.

Results: A total of 190 patients with UC were evaluated with an average age of 42.12 ± 14.51 years. 45.8% were and 54.2% men. The frequency of any cancer was 3% distributed as follows: 1% colorectal, 0.5% breast, 0.5% prostate, 0.5% thyroid papilar carcinoma and 0.5% neurofibroma. Pancolitis was associated with the presentation of any kind of neoplasia (RM = 17.43, 95% CI: 1.98–153.49, p < 0.001). The age at UC diagnosis was 33.06 ± 12.68 years. Extention according to Montreal’s classification was 18.52% were E1, 16.06% E2, 65.41% E3. 51.6%, A 32.6% presented with at least one extraintestinal manifestations. Medical treatment was distributed based on 42.1% 5-aminosalicylates (5-ASA); 1.1% steroid only 15.3% 5-ASA and steroid; 16.3% 5-ASA, steroid and thiopurines; 1.1% thiopurine only; 7.4% 5-ASA and thiopurine and 12.2% were colectomized.

Discussion/Conclusion: The frequency of any kind of malignant neoplasia was 3% in Mexican patients with UC. The presence of pancolitis was associated with the development of any kind of cancer.
Frequency of pharmacologic intolerance in Mexican patients with ulcerative colitis

Joel Toledo (Mexico City, MX)

Introduction: Ulcerative Colitis (UC) treatment is based on aminosalicylates, steroids, immunomodulators and biological therapy. In a European population, the prevalence of pharmacologic intolerance was 3%. The aim of the present study was to determine the frequency of pharmacologic intolerance in Mexican patients affected by Ulcerative Colitis.

Methods: Transversal type study in which 170 patients with definitive diagnosis of Ulcerative Colitis were evaluated. Demographic and clinical variables were reviewed from clinical charts.

Results: The median age of included patients was 40.5 years (18–73 years). 45.3% were women and 54.7% men. The average age at diagnosis of UC was 32.46 ± 12.23 years. The frequency of pharmacologic intolerance was 1% and it was distributed as follows: 0.5% intolerance to 5-aminosalicylates and 0.5% to steroids. The current age average was 8.23 ± 7.69 years of evolution. The extent of UC was distributed according to Montreal classification in 46.6% E1; 18.2% E2 and 62.2% E3. The 51.2% presented initially active then inactive course, 34.7% intermittent (< 2 relapses per year) and 3.5% continuous (= 2 relapses per year). The medical treatment was based on 41.2% had only 5-aminosalicylates (5-ASA); 13.5% 5-ASA and steroids; 16.5% 5-ASA, steroid and thiopurines; 8.2% 5-ASA and thiopurines and anti-TNF therapy in 0.6%.

Discussion/Conclusion: The frequency of pharmacologic intolerance was 1% in Mexican patients with UC.
Socioeconomic characteristics are associated with clinical course in Mexican patients with ulcerative colitis

Joel Toledo (Mexico City, MX)

Introduction: Ulcerative Colitis (UC) is a chronic and incurable condition of the colon. In Europe and the United States, it has been described that this disease is present with higher frequency in White collar workers, and high socioeconomic status, however, no information from Latin America exists. The aim of the present study was to evaluate the impact of socioeconomic status in the clinical outcomes in Mexican patients with UC.

Methods: A total of 236 patients from the Inflammatory Bowel Disease Clinic of Instituto Nacional de Ciencias Medicas y Nutricion were included. Socioeconomic, professional and clinical data were obtained from medical charts.

Results: A total of 168 with active UC and 68 in remission UC were included. The 47.5% (n = 112) were female and 52.4% (n = 124) male. Patients had a median of 3 as socioeconomic level assigned by our Institution, distributed as: 10.3% Level 1; 20.2% Level 2; 47.3% Level 3; 12.3% Level 4; 5.9% Level 5; 4% Level 6. The most frequent schooling level was Bachelor’s degree (24.2%), followed by completed high school (18.6%) and complete junior high school (13.1%). Most frequent occupations were house-wife (22.5%), professional (14.6%), student (10.6%) and informal merchant (3.8%). The only association found was professional with significantly higher risk of requiring colectomy (OR = 4.75, 95% CI: 1.01–22.40, p = 0.032). Patients on socioeconomic levels 1 to 3 had significantly lower risk of developing osteoporosis in comparison to groups 4 to 6 (OR = 0.314, 95% CI: 0.137–0.722, p = 0.005). Patients of both socioeconomic levels 3 and 4 had a higher frequency of a clinical course characterized by initial activity with posterior inactivity (OR = 2.15, 95% CI: 1.28–3.63, p = 0.004) and an intermittent clinical course characterized by two or less relapses per year (OR = 0.534, 95% CI: 0.313–0.910, p = 0.20) compared to remaining 4 levels.

Discussion/Conclusion: Both socioeconomic level and professional status were associated with differences in the clinical course of Mexican patients with UC.
TRPV4 protein expression is low in Mexican patients with severe ulcerative colitis

Joel Toledo (Mexico City, MX)

**Introduction:** Ulcerative Colitis (UC) is an emerging disease in Mexico characterized by finding blood in feces as a product from ulceration of colonic mucosa. TRPV4 (Receptor of Transitory Potential activated by Vanilloids 4) is a receptor whose specific agonist is 4α-phorbol 12,13-didecanoate that is also activated by stimulus such as changes of temperature, osmolarity and pH. The intention of the present study was to evaluate gene and protein expression of TRPV4 in Mexican patients with UC.

**Methods:** Comparative transversal type study that evaluated genic expression of TRPV4 using real-time polymerase chain reaction (RT-PCR) and protein expression with indirect immunohistochemistry.

**Results:** The gene of expression of TRPV4 was higher in remission UC patients compared to active UC and normal controls, but not statistical difference was found. The protein expression was higher among all intestinal layers in normal controls compared to active UC patients with severe activity (mucosa p = 0.008, submucosa p < 0.001, muscular p = 0.018 and serosa p < 0.001). Predominant cell sources in the protein expression of TRPV4 were lymphoid origin cells (macrophages, lymphocytes and plasmatic cells). Average age of included patients was 47.36 ± 12.97 years. 55.3% were women and 44.7% men. The age at diagnosis of UC was 34.48 ± 15.56 years. Average years of evolution were 8.65 ± 7.67. 20% had at least one extraintestinal manifestation.

**Discussion/Conclusion:** Protein expression of TRPV4 was low in patients with severe UC refractory to conventional treatment in comparison with normal controls without inflammation that suggests that TRPV4 could have an important role in the ethiopathogenesis of UC.
The multidrug resistant proteins (MRPs) in ulcerative colitis (UC)

Marco A. Villeda-Ramírez (Mexico City, MX),
Gabriela Fonseca-Camarillo (Mexico City, MX),
Jesús K. Yamamoto-Furusho (Mexico City, MX)

Introduction: The multidrug resistant proteins (MRPs) belong to a super family of transmembranal proteins which are characterized for transporting a wide range of molecules such as xenobiotics, antioxidants, ions and proinflammatory mediators. Similar structural and functional genes to the MRPs had been associated with pharmacological response and active clinical course to the ulcerative colitis (UC).

Methods: We analyzed 37 biopsies of UC patients (19 active UC and 18 quiescent UC patients) and 20 patients were considered as a control group, both conditions were confirmed by histopathology. The gene expression of MRP1, MRP4 and MRP5 and Interleukin 6 (IL6) was evaluated by real-time polymerase chain reaction.

Results: The average age of UC patients was 42.43 ± 11.49 years and the control was 48.74 ± 14.74. The 51% were females, 65% presented extraintestinal manifestations and the 70% had a diagnosis major for 3 years. The 14% showed a clinical course initially active and later inactive and the 80% presented pancolitis. In the pharmacological treatment, the 67% was in therapy with 5-ASA combined with steroids, immunomodulators and biologic therapy and the 67% showed a favorable response to the medical treatment. We only identify a significant increase in MRP4 gene expression in active UC compared with quiescent and control group (p = 0.05 y p = 0.04, respectively). Also found a statistical trend of the MRP5 gene expression levels with pancolitis development (p = 0.07, OR = 3.38, 95% CI: 0.6–18.14).

Discussion/Conclusion: The MRP4 was observed to increase in active UC group compared with quiescent UC and control group. The major expression of MRP5 gene was associated with pancolitis development in UC patients.
Global hospitalization trends for Crohn’s disease and ulcerative colitis: Systematic review with temporal analyses

Joseph W. Windsor (Calgary, CA), Michael Buie (Calgary, CA), Stephanie Coward (Calgary, CA), Richard Garry (Christchurch, NZ), Tawnya Hansen (Calgary, CA), James A. King (Calgary, CA), Paulo Kotze (Curitiba, BR), Christopher Ma (Calgary, CA), Siew C. Ng (Sha Tin, HK), Nicola Panaccione (Calgary, CA), Remo Panaccione (Calgary, CA), Joshua Quan (Calgary, CA), Fox E. Underwood (Calgary, CA), Gilaad G. Kaplan (Calgary, CA)

Introduction: As compared to highly industrialized countries, the incidence of inflammatory bowel disease (IBD) is rapidly rising in newly industrialized countries. With the epidemiologic evolution of IBD in the 21st century, hospitalization rates are changing throughout the world.

Methods: We systematically reviewed Medline and Embase for population-based studies reporting hospitalization rates for IBD, Crohn’s disease (CD), or ulcerative colitis (UC) since 2000. Log-linear models were used to calculate average annual percentage changes (AAPC) with associated 95% confidence intervals (CI) on studies with 5+ years of data. Data (stratified by IBD/CD/UC, primary/any-listed diagnosis, and region) were plotted onto an online, interactive map to show global trends (link provided).

Results: Data were extracted from 67 studies comprising 41 countries. Analyses were performed on IBD in 34 countries; CD in 13 countries; and, UC in 12 countries. In some highly industrialized regions, e.g. the United States, rates of hospitalization for CD (3.77%; 95% CI: 2.41–5.15) and UC (3.73%; 95% CI: 2.17–5.32) show significant increases, while in Canada, CD rates (-2.32%; 95% CI: -2.84 to -1.79) are significantly decreasing, but UC rates are stable (-0.66%; 95% CI: -1.36–0.05). Similarly diverse results are found for Europe: significantly decreasing rates for both CD and UC in Italy; significantly increasing rates in Portugal; but, stable rates in Spain. In contrast, hospitalization rates in newly industrialized countries like Chile, Bahrain, and Hong Kong are rapidly increasing along with the dramatic increase in incidence and prevalence.

Discussion/Conclusion: Despite advances in IBD management since 2000, hospitalization rates for persons with IBD are divergent throughout the Western world with over half of countries reporting increases. Newly industrialized countries in South America, the Middle East, and Asia are experiencing rapidly rising hospitalization rates, which is contributing to an increasing burden on global healthcare systems.
The penetrance of IBD through a population: Comparison of the relative global incidence and prevalence of ulcerative colitis and Crohn’s disease

Joseph W. Windsor (Calgary, CA), Michael Buie (Calgary, CA), Stephanie Coward (Calgary, CA), Richard Gearry (Christchurch, NZ), Tawnya Hansen (Calgary, CA), James A. King (Calgary, CA), Paulo Kotze (Curitiba, BR), Christopher Ma (Calgary, CA), Siew C. Ng (Sha Tin, HK), Nicola Panaccione (Calgary, CA), Remo Panaccione (Calgary, CA), Joshua Quan (Calgary, CA), Fox E. Underwood (Calgary, CA), Gilaad G. Kaplan (Calgary, CA)

Introduction: When inflammatory bowel disease (IBD) is first identified in a population, it is typically cases of ulcerative colitis (UC), eventually followed by instances of Crohn’s disease (CD). The ratio of UC:CD can be used as a proxy of disease penetrance within a population as the once high ratio approximates 1 over time.

Methods: We systematically reviewed Medline and Embase for studies reporting the incidence or prevalence of UC and CD. Log-linear regression (stratified by region and incidence/prevalence), was used to calculate average annual percent changes (AAPC) and associated 95% confidence intervals (CI). Data were plotted onto an online, interactive map to show global trends (link provided).

Results: We extracted data from 218 studies comprising population-level data from 69 countries. Regressions showed a negative AAPC as the prevalence ratio of UC:CD significantly decreased over time in Eastern Asia, Western Asia, Northern Europe, and Southern Europe. Data on the incidence ratio of UC:CD were more robust: Six of 12 global regions displayed significantly decreasing ratios (other AAPCs were stable). No AAPCs for incidence or prevalence ratios were found to be significantly increasing.

Discussion/Conclusion: In some highly industrialized countries, like Canada, the incidence ratio of UC:CD was already < 1 in the earliest available data (1966), explaining why the AAPC is stable in North America (-0.24%; 95% CI: -1.12, 0.65). However, in newly industrialized regions, like those in Southern Asia, the AAPC is rapidly decreasing (-24.68%; 95% CI: -37.85, -8.71) as areas like Sri Lanka rapidly fall from an incidence ratio of 7.5 in 2007–2008 to 2.8 in 2012–2013, mimicking trends in the epidemiology of IBD found in highly industrialized countries in the previous century.
Diagnostic utility of the neutrophil-platelet ratio (NeuPla ratio) as a marker of activity in patients with ulcerative colitis

Jesús K. Yamamoto-Furusho (Mexico City, MX), Erick A. Mendieta-Escalante (Mexico City, MX)

Introduction: Ulcerative colitis (UC) is a chronic disease characterized by periods of activity and remission. There are biomarkers such as C-reactive protein (CRP), erythrocyte sedimentation rate (ESR) and fecal calprotectin that are elevated in patients with active UC. The platelet, one of the main activators of neutrophils, contains IL-8, a potent neutrophil chemo-attractant and P-selectin that induces excretion of superoxide in the neutrophils, forming platelet-neutrophil aggregates that are increased in individuals with UC activity. No previous studies have evaluated the neutrophil-platelet (NeuPla) ratio as a tool for evaluating disease activity. Our aim to evaluate the clinical utility of NeuPla ratio in patients with UC.

Methods: A total of 158 patients with definitive diagnosis of UC were included and NeuPla index was calculated on the ratio between neutrophil differential count and platelets from complete blood count (CBC) at least one day after the colonoscopy and colon biopsies. The activity was classified according Mayo endoscopic sub-score, Riley score, Truelove-Witts, Montreal, full Mayo, and Yamamoto-Furusho indexes.

Results: The correlation of the NeuPla index with all activity indexes was statistical significant (p < 0.001) as well as fecal calprotectin (rho: 0.532, p = 0.0001). The ROC curve was used to determine the cut off level of NeuPla according to moderate activity (optimal cut off 14.63 with a sensibility of 79.5% and specificity of 51.3% with an area under the curve (AUC) of 0.635 and severe activity (optimal cut off 18.7 with a sensibility of 80% and specificity of 81.8% AUC of 0.749) considering as a gold standard the endoscopy findings.

Discussion/Conclusion: The NeuPla index has a good diagnostic utility in order to distinguish patients with clinical and endoscopic activity without the need to perform invasive studies such as colonoscopy. This index is a cheap and easy access monitoring tool and a better diagnostic performance in comparison with other serum biomarkers CPR, ESR and serum albumin.
High correlation between fecal calprotectin and a Novel Integral Index for evaluating disease activity in ulcerative colitis patients

Jesús K. Yamamoto-Furusho (Mexico City, MX), Erick A. Mendieta-Escalante (Mexico City, MX)

Introduction: Ulcerative colitis (UC) is a chronic and incurable disease characterized by periods of activity and remission. There are several indexes that evaluate the UC activity from clinical, biochemical and endoscopic parameters. The fecal calprotectin is a non-invasive marker for detecting intestinal inflammation in UC patients. A new novel integral disease index (Yamamoto-Furusho index) includes clinical, biochemical, endoscopic and histological findings that evaluate the full spectrum of activity in UC patients. Our aim is to correlate the Novel Index Activity index (Yamamoto-Furusho Index) with fecal calprotectin levels in UC patients and compare with other indexes.

Methods: A total of 158 patients with confirmed diagnosis of UC from the IBD Clinic were recruited in the period between July 2017 and June 2019. All demographic and clinical characteristics were collected from clinical charts. The fecal calprotectin was measured at least one week before the colonoscopy and biopsies. The Spearman’s rho was used for the correlation. A p value < 0.05 was considered as significant.

Results: We analyzed 185 patients with UC, 85 patients (51.8%) were women and 73 (44.5%) men, with an average current age of 43.53 years (+ 14.35), an age at diagnosis of 36.6 + 15.1 years and disease duration of 11.27 ± 8.1 years. The extension was distributed on proctitis (E1) in 13.3%, left colitis (E2) in 19.6% and pancolitis (E3) in 31.6%. The treatment was based on mesalazine in 93.9%, steroids in 26.2% and azathioprine in 15.9%. The correlation between fecal calprotectin and the Yamamoto-Furusho index was high (rho = 0.730, p < 0.0001) compared with other indexes such as endoscopic Mayo sub-score (rho = 0.705, p = < 0.001); Truelove-Witts (rho = 0.644, p = < 0.001), Full Mayo score (rho = 0.708, p = < 0.001) and Montreal (rho = 0.551, p = < 0.001).

Discussion/Conclusion: The novel integral index showed a high correlation with fecal calprotectin compared to other UC indexes for evaluating disease activity in UC patients.
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Current Challenges of Inflammatory Bowel Disease

March 6–7, 2020
Hyatt Regency Hotel
Mexico City, Mexico

Where medicine and pharmaceuticals meet – a tried and trusted link

Abstracts
Poster Abstracts