2020 Advances in Inflammatory Bowel Diseases: Vision for the Next Decade

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**P001**

North-South Gradient in the Incidence of Pediatric Inflammatory Bowel Disease Along the Atlantic Coast


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**BACKGROUND:** Inflammatory bowel disease (IBD) represents a group of intestinal disorders, including Crohn’s disease (CD) and ulcerative colitis (UC), that involve chronic inflammation of the digestive tract. Pediatric IBD is defined when onset of symptoms and diagnosis occurs in patients 18 years or less. East-West and North-South gradients have been reported in Canada and the US pediatric population. We aimed to evaluate whether a similar gradient exists in the US among the pediatric population.

**METHODS:** We conducted a retrospective cohort study from January 1, 2000 to December 31, 2018 using electronic health records from one national children’s hospital that participates in the Pediatric IBDnet research network. We extracted information on patient demographics, encounters with healthcare providers, diagnoses recorded, and procedures performed during these encounters from patient’s electronic health records. The outcomes of interest include geographic location (North vs South), gender, race/ethnicity, age at diagnosis, tobacco use, socioeconomic status, and need for surgery.

**RESULTS:** A total of 2,409 patients 18 years of age or less met the eligibility criteria of the study; 3,181 (73.5%) non-Hispanic White, 320 (13.3%) non-Hispanic Black, 198 (8.2%), Hispanic, 60 (2.5%); Asian, and 13 (0.5%). There was no difference in the male predominance in all groups between the North and the South (55.3% vs 54.3%, P = 0.62). The incidence of IBD among the non-Hispanic Whites was greater in North (78.5% vs 72.2%, P = 0.0002). The incidence of IBD among the Hispanics was greater in the South (5.3% vs 11.4%, P < 0.0001). There was no difference in incidence between the North and South (68.8% vs 69%, P = 0.92); however, UC was more prevalent in the South. There was no difference in UC between the North and South (0.75% vs 27.3%, P = 0.02). Further breakdown of CD and UC with respect to ethnicity revealed the incidence of UC and UC in the Hispanic population was greater in the South (4% vs 10.3%, P < 0.0001; 6.2% vs 14%, P = 0.0011, respectively). There was no difference seen in non-Hispanic Hispanics, non-Hispanic Blacks, Asians, and “Others” with respect to CD, UC, or UCD.

**CONCLUSION:** We demonstrate a North-South gradient in the pediatric in the non-Hispanic and Hispanic population with IBD. There is a higher incidence of UC in the pediatric population in the South. Furthermore, there is a higher incidence of CD and UC in the Hispanic population in the South compared to the North. Further epidemiologic studies are needed to assess the racial/ethnic differences that contribute to this North-South gradient.

**P002**

Frequency and Causes of Prolongation of the Induction Course of Tofacitinib in Patients with Ulcerative Colitis

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**BACKGROUND:** Tofacitinib is a selective immunosuppressant, the first representative of the Janus kinase family inhibitors, which has a high selectivity against other kinases of the human genome. According to the results of the study, tofacitinib inhibits JAK-1, JAK-2 and in high concentrations-JAK-3 and tyrosine kinase-2. The drug is registered in Russia for the treatment of patients with ulcerative colitis. According to the instructions for medical use, in patients with incomplete response to the induction course of tofacitinib is possible to conduct an additional 8 weeks of therapy at an induction dose of 10 mg 2 times a day. Aim: to identify the frequency and reasons for the need to prolong the induction course of tofacitinib in patients with ulcerative colitis.

**METHODS:** 35 patients with ulcerative colitis (UC) who received tofacitinib were observed in the Department of inflammatory bowel diseases. Patients were divided into two groups. Group 1 (n = 10) of patients were bio naive. The second group of patients (n = 25) had previous experience of treatment with one or more anti-TNF-α drugs. The necessity of prolongation up to 16 weeks of induction course of tofacitinib was assessed in patients with insufficient clinical response at week 8 of therapy (reduction of partial index of Mayo less than 30%) and lack of normalization of laboratory parameters (CRP, hemoglobin, FCP).

**RESULTS:** In the follow-up period among group 1 UC patients (n = 10) who had not previously received anti-TNF-α drugs, the need for a prolonged induction course of tofacitinib was not required in any patient (0%). In the 2nd group of patients (n = 25), previously treated with anti-TNF-α drugs, a prolonged induction course of tofacitinib was required in 9 (36%) patients (x2:4.484; P = 0.028).

**CONCLUSION:** The need for prolongation up to 16 weeks of the induction course of tofacitinib in patients with ulcerative colitis B is significantly higher in patients who have previously received one or more anti-TNF-α drugs.

**P003**

Frequency of Hereditary and Acquired Thromboembolic Complications in Patients With Inflammatory Bowel Diseases in Moscow

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**BACKGROUND:** Thromboembolic complications (TC), which are one of the characteristic manifestations of inflammatory bowel diseases (IBD).

**OBJECTIVE:** To identify the frequency of hereditary and acquired hypercoagulation factors that contribute to the development of TC in patients with IBD.

**METHODS:** The clinical status of 1238 IBD patients undergoing treatment in 2019 was evaluated in the Department of IBD. 748 patients with ulcerative colitis (UC) and 490 patients with Crohn’s disease (CD) in 112 patients with UC (9.0%), clinically significant TC (venous thrombosis of the lower extremities, upper extremities and others) was detected. In patients with clinically significant feasibility studies, DNA isolated from peripheral blood lymphocytes was examined to identify molecular genetic mutations that lead to hypercoagulation.

**RESULTS:** Of 112 patients with UC, 76 (67.8%) patients had UC, and 36 (32.2%) patients had Crohn’s disease. Of 112 IBD patients with clinically significant TC, 45 (40.2%) had genetic mutations that increase affinity for fibrinogen, increase platelet aggregation, disrupt folate acid metabolism, and reduce the activity of the methylenetetrahydrofolate reductase enzyme, which may be manifested by a moderate increase in homocysteine levels. 47 patients with IBD (59.8%) did not have genetic mutations that lead to hypercoagulation. Of the 45 IBD patients with clinically significant feasibility studies due to hereditary factors, 30 (66.6%) patients had CD, 15 (33.7%) patients had UC (HR:1.038, 95% CI 0.746–1.444; x2:0.049, P = 0.8392).

**CONCLUSION:** Clinically significant feasibility studies were found in 9.0% of IBD patients. More than 40% of patients with clinically significant feasibility studies (n = 112) have inherited factors that contribute to the development of feasibility studies. About 60% of IBD patients with clinically significant feasibility studies do not have hereditary factors that lead to the development of feasibility studies.

**P004**

Combined Biological Therapy of Perianal Crohn’s Disease

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**BACKGROUND:** Perianal fistulae are common types of fistulae in Crohn’s disease (CD). Mesenchymal stromal cells (MSC), which have immunomodulatory properties and high regenerative potential, are currently also used for the treatment of fistula CD. Perianal fistulae are common types of fistulae in Crohn’s disease (CD). Mesenchymal stromal cells (MSC), which have immunomodulatory properties and high regenerative potential, are currently also used for the treatment of fistula CD. The purpose of this study was to compare the effectiveness of combined therapy (local and systemic) mesenchymal stromal cells (MSC) of bone marrow, in the effectiveness of combination therapyMSC (local administration) and infliximab (IFX), as therapy the IFX with immunomodulators on the healing of simple perianal fistulae in Crohn’s disease (CD).

**METHODS:** Seventy-five patients with CD with perianal lesions were divided into three groups depending on the method of therapy. The first group of CD patients aged 19 to 59 years (Me-29) (n = 25) received MSC systemically and locally, as well as anti-tumor necrosis factor α drugs, the need for a prolonged induction course of tofacitinib was not required in any patient. In the 2nd group of patients (n = 25), previously treated with anti-TNF-α drugs, a prolonged induction course of tofacitinib was required in 9 (36%) patients (x2:4.484; P = 0.028).

**CONCLUSION:** Combined cellular and anti-cytokine therapy of CD with perianal lesions contributes to more frequent and prolonged closure of simple fistulae, compared with MSC monotherapy and IFX monotherapy.

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