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 Europe. 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 PEIISnet 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; 318 (13.3%) non-Hispanic White, 320 (13.3%) non-Hispanic Black, 198 (8.2%), Hispanic, 60 (2.5%), Asian, and 13 (0.5%) “other.” 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 of IBD among the non-Hispanic Black, Asian, or “other” group. There was no difference in incidence of CD between the North and South (68.8% vs 69%, P = 0.92); however, UC was more prevalent in the South (23.2% vs 27.3%, P = 0.02). Further breakdown of CD and UC with respect to ethnicity revealed the incidence of CD and UC in the Hispanic population is greater in the South (5% vs 10.3%, P < 0.0001; 6.2% vs 14%, P = 0.001). There was no difference seen in non-Hispanic Whites, non-Hispanic Blacks, Asians, and “other” patients 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, it is possible to conduct an additional 8 weeks of therapy at an induction dose of 10 mg twice 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). The comparative analysis was carried out by the method of four-field tables using non-parametric statistical criteria.

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 = 4.481; P = 0.032).

CONCLUSION: The need for prolongation up to 16 weeks of the induction course of tofacitinib in patients with ulcerative colitis 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), increase the risk of mortality and morbidity of patients with IBD. The objective of the study was to identify the causes of hereditary and acquired thrombosis and determine the frequency of thromboembolic complications in IBD patients. The main goal of the study was to identify the frequency of thromboembolic complications in IBD patients. The main goal of the study was to identify the frequency of thromboembolic complications in IBD patients.

METHODS: The clinical status of 1283 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 (9.9%) collected genetic data. In patients with clinically significant feasibility studies, DNA isolated from peripheral blood lymphocytes was identified by molecular biological methods, including direct sequencing of the major thrombophilic genes: factor V Leiden, prothrombin G20210A, MTHFR C677T, and factor II G20210A. The frequency of thromboembolic complications and the occurrence of hereditary and acquired hypercoagulation factors that contribute to the development of TC in patients with IBD was determined.

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CONCLUSION: The frequency of thromboembolic complications in IBD patients is significantly higher than in the general population. The main cause of TC is hereditary 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 fistulas are common types of fistulas in Crohn’s disease (CD). Mesenchymal stromal cell (MSC), which have immunomodulatory properties and high regenerative properties, can be currently used for the treatment of fistula CD. Perianal fistulas are common types of fistulas in Crohn’s disease (CD). Mesenchymal stromal cell (MSC), which have immunomodulatory properties and high regenerative properties, can be currently 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 therapy MSC (local administration) and infliximab (IFX), as therapy the IFX with immunomodulators on the healing of simple perianal fistulas 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-cytokine therapy with IFX. The second group of patients with CD (n = 25) aged 20 to 62 years (Me-30) received anti-cytokine therapy with IFX and immunomodulators. The third group of patients with CD (n = 25) aged 20 to 62 years (Me-30) received anti-cytokine therapy with IFX.

RESULTS: After 2 months in the first group of patients, healing of simple fistulas was observed in 15/25 (60.0%), in the third group-22/25 patients (88.0%) (HR 1.467; 95% CI - 1.032–2.084; x2 = 3.742; P = 0.03948). After 2 months in the second group, healing of simple fistulas was observed in 16/25 (64.0%) (HR 1.37; 95% CI - 0.698–2.017; x2 = 4.091; P = 0.04186). After 12 months in the first group of patients, healing of simple fistulas was observed in 17/25 (68.0%), in the third group-24/25 (96.0%) patients (HR 1.412; 95% CI 1.066–1.869; x2 = 7.399; P = 0.00214). After 12 months in the second group, healing of simple fistulas occurred in 18/25 (72%) (HR = 0.750; 95% CI 0.580–0.970; x2 = 4.414; P = 0.0358).

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