

## **Summary:**

With the development of the Industrial Revolution and the associated lifestyle changes, the incidence of idiopathic bowel disease (IBD) is gradually increasing. Chronic intestinal inflammation is thus becoming an important group of autoimmune diseases whose incidence and prevalence are increasing significantly worldwide. Monitoring the incidence of pediatric IBD may contribute to the identification of clinically relevant risk factors.

The exact etiology and pathophysiology of IBD is unknown; it is a complex interplay of intestinal dysbiosis, epithelial dysfunction, activation of the immune system and environmental influences in a genetically susceptible individual. Epidemiological data point to a very significant influence of environmental factors. The development of IBD is mainly associated with factors that affect the microbiome and the immune system of the individual. Among the most significant risk factors is diet, which exerts its immunomodulating properties from the newborn period to adulthood.

The primary aim of this study is to prospectively monitor the incidence of pediatric IBD in the Pilsen Region (PLK), to analyze the data and compare them with available data from the Czech Republic and worldwide. To minimize the risk of incomplete data, an application was created to prospectively retrieve data from an internal computerized clinical database using a data form. Standard descriptive statistics were used to summarize the characteristics of the entire population. Data were analyzed for each time period and stratified by age, sex, and region. We proposed a prediction model from the obtained incidence data, which we subsequently validated in practice.

By analyzing the epidemiological data, we reached several important conclusions: The incidence of IBD in PLK is among the highest reported in the Czech Republic to date, the incidence of Crohn's disease (CD) is more than double that of ulcerative colitis (UC), the group of patients with CD is male-dominated, the incidence of IBD (especially CD) is increasing significantly over time, the incidence is gradually increasing with patient age, the significantly increased incidence of IBD is in cities with 5-10 thousand inhabitants, the low incidence of IBD is in villages with less than 2 thousand inhabitants, we compared the incidence of IBD in PLK with historical Czech data and we put the data into the context of the global incidence of IBD in pediatric patients. The Czech Republic now ranks among countries with a high incidence of IBD, and the incidence continues to rise.