

**Title:**

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## Association of various symptoms and histological alterations in the diagnosis of pediatric ulcerative colitis

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*Dear Editor,*

Ulcerative colitis (UC) is a chronic, relapsing inflammatory bowel disease (IBD) of the colon (1). Its presentation is varied, with the main symptoms being mucosanguineous diarrhea, abdominal pain, and weight loss. However, the diagnostic utility of these symptoms in pediatric populations is controversial (2). This study evaluates the clinicopathological association of different symptoms in UC through an analytical study of patients under 15 years of age who underwent upper and lower gastrointestinal endoscopy at a pediatric hospital between 2015 and 2022 for suspected IBD (Reg. 341E/2023). The prevalence of various symptoms, such as abdominal pain, diarrhea, gastrointestinal hemorrhage, fever, and weight gain, was compared, along with their association with histopathological abnormalities, between patients with UC and those without the disease (non-UC). During this period, 502 endoscopies were performed, 80 of which were for suspected IBD, with 12 UC patients and 14 non-UC children finally included. The initial symptoms of UC can be insidious, with initially non-bloody diarrhea and weight retardation. Some children present with a more aggressive disease course, characterized by severe abdominal pain, bloody diarrhea (80%), tenesmus, fever, leukocytosis, and hypoalbuminemia (3). Acute abdominal pain was present in 50% of our UC patients (6/12), while no non-UC subjects reported this symptom ( $p = 0.003$ ). In contrast, chronic abdominal pain was more prevalent in the non-UC group (71%) compared to UC (33%), which is pathophysiologically consistent with the disease's progression and aligns with the reported by other authors (4). Regarding

gastrointestinal hemorrhage, our findings are consistent with the literature, as bloody diarrhea was present in 7 out of 12 UC cases, with 0% in the non-UC group ( $p < 0.001$ ). Systemic symptoms, such as fever, asthenia, and anorexia, are common at the onset and during UC flares. In our analysis, fever did not show statistical differences, although it was more frequent in the UC population (16%) compared to non-UC (7%). Unlike adults, children have a 5–10% risk of growth retardation (5). In our cohort, no weight retardation was documented, and BMI was similar between the groups (UC 16.6 vs. non-UC 16.5), although greater weight loss was observed among UC patients (50%) (**Table 1**). Although this study has methodological limitations due to its retrospective nature and sample size, it addresses a novel issue in pediatric IBD that could be extrapolated to adult populations or other gastrointestinal diseases. Our results suggest that chronic abdominal pain is highly prevalent in functional disorders other than UC and should prompt consideration of other differential diagnoses. In contrast, acute abdominal pain, bloody diarrhea, or mucosanguineous stools are associated with the histological diagnosis of UC, underscoring the importance of these symptoms in prioritizing diagnostic and therapeutic strategies. Therefore, patients presenting with one or more of these symptoms are at higher risk of UC and could benefit from prioritized evaluation by Gastroenterology or prompt endoscopic studies, unlike children without these symptoms, for whom less invasive testing and alternative diagnoses should be considered.

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**Table 1.** Prevalence of different symptoms in the analyzed groups.

Variable	UC (n = 12)	non-UC (n = 14)	p Value
Age (years)	9.9 ± 3.5	9.9 ± 3.5	0.999
Female n (%)	8 (66.7 %)	4 (28.6 %)	0.052
Male n (%)	4 (33.3 %)	10 (71.4 %)	
Weight (kg)	31.9 ± 10.2	32.7 ± 12.7	0.858
Height (m)	1.37 ± 0.23	1.37 ± 0.24	0.975
BMI	16.6 ± 2.5	16.5 ± 2.4	0.967
AAP n (%)	6 (50 %)	0 (0 %)	<b>0.003</b>
CAP n (%)	4 (33.3 %)	10 (71.4 %)	0.052
Occasional diarrhea n (%)	4 (33.3 %)	4 (28.6 %)	0.793
Persistent diarrhea n (%)	7 (58.3 %)	4 (28.6 %)	0.126
Fever n (%)	2 (16.7 %)	1 (7.1 %)	0.449
Weight loss n (%)	6 (50 %)	3 (21.4 %)	0.127
Rectorrhagia n (%)	1 (8.3 %)	1 (7.1 %)	0.910
Bloody diarrhea n (%)	7 (58.3 %)	0 (0 %)	<b>&lt;0.001</b>



Mucosanguineous stools n (%)	3 (25 %)	0 (0 %)	<b>0.047</b>
Stools with blood n (%)	0 (0 %)	1 (7.1 %)	0.345

**BMI:** Body Mass Index; **AAP:** Acute abdominal pain (<3 months); **CAP:** Chronic abdominal pain (≥3 months).

Accepted Article