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A Step Forward in the Understanding of Structural and Functional Bowel Damage in Patients with Ulcerative Colitis

Catarina Gouveia Joana Torres

Serviço de Gastrenterologia, Hospital Beatriz Ângelo, Loures, Portugal

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Ulcerative colitis · Bowel damage · Complications of IBD

Lesão Estrutural e Funcional em Doentes com Colite Ulcerosa: Um Passo em Frente para Uma Melhor Compreensão do Problema

Palavras Chave
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The concept that chronically undertreated inflammation can progress to irreversible bowel damage (strictures and fistulae leading to surgery) is currently well accepted in Crohn disease (CD) and has resulted in a therapeutic paradigm shift towards earlier and more aggressive therapies in order to prevent disease progression [1]. It is, however, unknown whether ulcerative colitis (UC) presents the same tendency to progress to irreversible bowel damage or which factors could be associated with this progression. Being a "solely" mucosal disease, UC is not typically accompanied by the stricturing and fistulizing complications seen in CD, and there is an intuitive tendency among physicians to consider it a less aggressive or destructive disease as compared to CD [2]. Need for hospitalization and surgery, or development of dysplasia, are the usual complications of UC. However, long-lasting UC, where recurrent bouts of inflammation are allowed to progress, can potentially have devastating consequences in colonic and rectal physiology, as supported by some evidence [3]. For example, it is well known that chronic UC can be complicated by benign strictures and colon shortening and narrowing, with nefarious consequences on colonic motility [4]. Additionally, fibrosis has also been reported to exist in UC, and benign strictures, although less common than in CD, are also a possible complication of the disease [5]. Additional complications of the disease that could be considered as progression are disease-proximal extension (disease progressing from proctitis or left-sided colitis to more extensive forms of inflammation) and pseudopolyps [3]. Finally, one of the largely unexplored consequences of chronic UC relates to its potential to affect anorectal and colonic function. Severe rectal inflammation, not adequately and timely treated, can result in rectal narrowing and presacral space widening, with impairment in rectal compliance, resulting in distressful complaints of fecal incontinence, urgency, and tenesmus [6]. Likewise, many studies, mostly performed in the past, have shown that UC is characterized by decreased contractility and a reduction in the pressure or amplitude of segmental contractions, which has been hypothesized to be a consequence of wall stiffness [7]. The

KARGER

E-Mail karger@karger.com
www.karger.com/pjg

Dr. Catarina Gouveia
Gastroenterology Department, Hospital Beatriz Ângelo
Rua Melvin Jones, nº6, 2ºB
PT–1600-867 Loures (Portugal)
E-Mail catarinagouveia228@gmail.com

functional consequences of these manometric changes are not well clarified and could partly explain the fact that even patients with mucosal healing may maintain symptoms of altered stool frequency and consistency [8].

Despite the growing interest in this topic, there are still few studies that have systematically assessed such potential complications of UC and have tried to correlate them with functional consequences. In this issue of *GE – Portuguese Journal of Gastroenterology*, Massinha et al. [9] presented a retrospective study including 104 patients with UC, currently living in a tertiary referral hospital area, in whom they evaluated the presence of structural and functional bowel damage.

They included patients with UC diagnosed between January 1, 2000, and December 31, 2004, living in the direct referral area of the hospital. In their sample, 47% of the patients were female, and the mean age at diagnosis was 38 ± 17 years. Disease distribution was well established (24% proctitis, 57% left colitis, and 19% pancolitis). Regarding the therapeutic agents used, 56% of the patients needed corticotherapy, 38% immunosuppressants, and 16% anti-TNF. The mean follow-up time was 13 ± 2 years. For the purposes of this study, structural damage was defined as the presence of "lead pipe" colon, stenosis, pseudopolyps, and fibrous bridges. To evaluate the functional consequences of disease, anorectal dysfunction was evaluated using 2 questionnaires – the Cleveland Clinic Incontinence Score (CCIS) and the Fecal Incontinence Quality of Life (FIQL). The CCIS is a clinical score that evaluates incontinence, classifying patients with severe, moderate, and mild incontinence by analyzing the type of incontinence (solids, liquids, and gas), frequency (never, rarely, occasionally, often, or always), and alterations in lifestyle (never, rarely, occasionally, often, or always). FIQL is a score that evaluates quality of life regarding fecal incontinence, composed of 29 questions, with 4 different domains (lifestyle, behavior, depression, and embarrassment).

In the population presented by Massinha et al. [9], proximal disease extension was found in 12% of the patients, strictures in 3%, pseudopolyposis in 16%, and bridging fibrosis in 3%, and 15% of the patients presented a "lead pipe" colon on colonoscopy. Interestingly, anorectal dysfunction was reported in 49% of the patients, as evaluated by the CCIS score, 10% of which had persistent symptoms of incontinence. The authors went on to evaluate which clinical factors were associated with both structural damage and anorectal dysfunction. They found that those patients who needed corticosteroids (p = 0.001), immunosuppressants ($p < 0.001$), and anti-TNF ($p = 0.002$) had an increased incidence of structural damage and anorectal dysfunction. Although not a direct proof, these findings suggest that those who present a more severe disease, with a possibly higher inflammatory burden, are those at greater risk of developing complications. They also found a correlation between structural damage and anorectal dysfunction ($p < 0.05$), again suggesting that there is some support to incorporate the concept of bowel damage into UC. No correlation between age and anorectal dysfunction was observed.

The authors are to be congratulated for expanding our knowledge on this particular area, where a lack of studies clearly exists. By evaluating the presence of structural and functional consequences in their population, they were able to provide additional evidence regarding chronic colonic complications in patients with UC, placing us one step closer to understanding progressive bowel damage in these patients.

However, this study has some limitations. The follow-up time was relatively short, given that complications associated with bowel damage can theoretically increase with cumulative mucosal inflammation. Besides, patients with longstanding disease are more likely to accumulate structural and functional damage, and, therefore, it would have been of value to evaluate disease duration contribution to cumulative bowel damage. Additionally, no adjustment for gender, parity, or other comorbidities known to be associated with a higher risk for incontinence was made. Although the authors state that the scores were applied prospectively and during inactive disease, there is always the possibility of recall bias from patients. Indeed, the authors report that references to functional anorectal disorders were identified in 49%, which were, however, mostly previous episodes of self-limited incontinence. Patients with clinically active disease present a reduction in rectal compliance, and rectal hypersensitivity, and, therefore, may experience symptoms of urgency, tenesmus, and incontinence, which could be misinterpreted as anorectal dysfunction, leading to a much higher rate of complications. Nevertheless, 10% of the patients presented persistent incontinence, which, in our opinion, is a high figure that well reflects this unacknowledged complication of UC. Despite potential limitations, and being a relatively small-sampled study, performed in a tertiary center, the authors evaluated the prevalence of structural and functional complications in their population of patients with UC; therefore, this study is very valuable since it raises attention and awareness for the potential of UC to cause bowel damage.

In conclusion, there is growing evidence that UC may progress to chronic bowel damage. The present study adds another piece of evidence to this field and reinforces the need for further prospective studies of at-risk subjects, with a more precise functional evaluation of anorectal dysfunction, using manometric studies and eventually MRI.

Disclosure Statement

The authors have no conflicts of interest to declare.

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