LETTER TO THE EDITOR

New insights into the use of biomarkers in patients undergoing surgery for ulcerative colitis

Nuevas perspectivas sobre el uso de biomarcadores en pacientes con colitis ulcerosa que se someten a cirugía

*Gabino Cervantes-Guevara[1,2], Gabino Cervantes-Pérez[3,4], Miguel Robledo-Valdez[4], Guillermo A. Cervantes-Cardona[5], Sol Ramírez-Ochoa[3,4], Carlos M. González-Valencia[6], Janet C. Vázquez-Beltrán[7], Eduardo Gómez-Sánchez[8], and Enrique Cervantes-Pérez[3,4]**

[1]Department of Gastroenterology, Hospital Civil de Guadalajara "Fray Antonio Alcalde", Guadalajara, Jalisco; [2]Department of Welfare and Sustainable Development, Centro Universitario del Norte, Universidad de Guadalajara, Colotlán, Jalisco; [3]Department of Internal Medicine, Hospital Civil de Guadalajara "Fray Antonio Alcalde", Guadalajara, Jalisco; [4]Health Sciences University Center, Universidad de Guadalajara, Guadalajara, Jalisco; [5]Department of Philosophical, Methodological and Instrumental Disciplines, Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara, Guadalajara, Jalisco; [6]Research Ethics Committee, Hospital Hispano, Guadalajara, Jalisco; [7]Department of Pharmacological Sciences, School of Medicine, National Polytechnic Institute, Ciudad de Mexico; [8]Division of Basic Health Disciplines, Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara, Guadalajara, Jalisco. Mexico

To the Editor:

Ulcerative colitis (UC) is an idiopathic, chronic, relapsing-remitting inflammatory disease that usually affects the rectum and colon at the same time. Emergency department visits, hospitalization, and short-term surgery have all decreased as a result of major advancements in medical care, particularly the introduction of biologics in the previous 20 years. Extensive trials of medical therapy are thought to minimize the need for urgent or emergent colectomy, which has poorer outcomes than elective surgery[1,2].

Several biomarkers have been demonstrated to predict the course of disease. Their ability to perform this role has sparked speculation about whether they are likewise linked to the necessity for surgical intervention and has led to their inclusion in prediction algorithms. The capacity to correctly predict which patients will eventually undergo colectomy would be extremely beneficial in patient counseling. Although no one test will likely become the gold standard for determining who needs surgery, there are a few tests that may be useful in minimizing the length of ineffective medical treatment, especially when used in combination[3].

Certain biomarkers such as C-reactive protein (CRP), hypoalbuminemia, and peripheral eosinophilia have been associated with surgical decision-making and have the potential to predict treatment failure. However, the precise significance of biomarkers in predicting which patients will require surgery and when they should undergo surgery is still being determined.

For decades, CRP has been regarded as an important component of UC evaluation. CRP elevation is highly associated with the absence of a functional gastrointestinal disorder, but it has limited sensitivity and is not specific for UC. Besides, the CRP response in UC is quite variable. Due to the short half-life of CRP, serial measurements can be utilized to evaluate treatment response. In hospitalized patients with acute illness, persistently and significantly increased CRP levels have been linked to steroid-resistant disease and the need for surgery[4].

On the other hand, eosinophilia was assumed to be linked to active disease at the time. Recent research has found that peripheral blood eosinophilia (PBE) can be used as a biomarker for disease activity.

***Correspondence:**
Enrique Cervantes-Pérez
E-mail: enrique.cervantes@academico.udg.mx

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Click et al. conducted a registry analysis of 2066 IBD patients in which they found a link between peripheral eosinophilia and a severe disease phenotype. PBE was linked to severe disease, active disease, primary sclerosing cholangitis, aggressive medical treatment, increased health-care utilization, hospitalization, and the requirement for surgery in people with UC. PBE was linked to hospitalization and surgery in UC, with adjusted odds ratios of 2.35 and 1.76, respectively, according to multivariate analysis. Furthermore, UC patients with PBE had a considerably shorter time to colectomy, according to time-to-event analysis. Additional research verifying the predictive capacity of PBE regarding surgical intervention will be necessary before this tool can be used in decision-making[5]. Multiple biomarkers have been combined to increase the accuracy of predicting which patients would need surgery to treat their disease. To develop best practices, more research is needed on the best usage and combination of biomarkers, as well as the effects of earlier surgical intervention as required by such a predictive model.

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Conflicts of interest

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References

1. Huh G, Yoon H, Choi YJ, Shin CM, Park YS, Kim N, et al. Trends in emergency department visits and hospitalization rates for inflammatory bowel disease in the era of biologics. PLoS One. 2019;14:e0210703.
2. Roberts SE, Williams JG, Yeates D, Goldacre MJ. Mortality in patients with and without colectomy admitted to hospital for ulcerative colitis and Crohn's disease: record linkage studies. BMJ. 2007;335:1033.
3. Jean L, Audrey M, Beauchemin C, On Behalf of the iGenoMed Consortium. Economic evaluations of treatments for inflammatory bowel diseases: a literature review. Can J Gastroenterol Hepatol. 2018;2018:7439730.
4. Lewis JD. The utility of biomarkers in the diagnosis and therapy of inflammatory bowel disease. Gastroenterology. 2011;140:1817-26.e2.
5. Click B, Anderson A, Koutroubakis IE, Rivers CR, Babichenko D, Machicado JD, et al. Peripheral eosinophilia in patients with inflammatory bowel disease defines an aggressive disease phenotype. Am J Gastroenterol 2017;112:1849-58.