Inflammatory Bowel Diseases and Biological Treatment in SARS-CoV-2 Era. Why Not?

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To the Editors,

In December 2019, a new β-coronavirus (SARS-CoV-2) and its related disease, COVID-19, spread first in China and then worldwide, becoming a pandemic. The patients affected by chronic diseases seem to be at a higher risk to develop severe pneumonia.[1] In this setting, the initial indication from the inflammatory bowel disease (IBD) center in Wuhan was to discontinue all biological and immunosuppressive treatments. There, among 318 IBD patients, none developed COVID-19.[2] Subsequent guidelines suggested for patients with IBD to continue all treatments to avoid relapse.[3] In an Italian observational study, among 522 IBD patients (89% adults), 16% under biological therapy, none was hospitalized for COVID-19.[4] We confirm this observation.

On April 19, 2020, Italy officially registered 178.972 SARS-Cov-2 infected people. Particularly, our province of Cremona reports the highest rate of infected people in the world: 1 of 73 inhabitants. However, the prevalence could be even higher, as these data are based on hospitalized and symptomatic patients only. Our IBD cohort includes 251 patients, 41 (16.3%) under biological treatment (median time of treatment, 23 months), 20 males (48.8%), 30 with Crohn's disease (CD), and 11 ulcerative colitis (RCU) (mean age 48.6; SD±15.2). Thirty patients are treated with antitumor necrosis factor alpha (anti-TNFα), 10 with vedolizumab, and 1 with ustekinumab. None of the patients under biological treatment reported COVID-19 symptoms.

Some IBD constitutional and therapeutic aspects could support these data. First, SARS-CoV-2 binds to the cells through angiotensin-converting enzyme 2 (ACE2). Two distinct forms—full-length and soluble ACE2—exist. The soluble form circulates in the blood, acting as a competitive interceptor of SARS-CoV-2. Interestingly, soluble ACE2 is upregulated in the blood of IBD patients. Again, the severity of COVID-19 seems to be linked to the "cytokines storm" syndrome, with massive production of interleukin (IL)-2, IL-6, TNF, and interferon-γ. In this direction, tocilizumab, a IL-6 receptor antagonist, has been included in the COVID-19 therapy trials. The suppression of the inflammatory response in IBD by biological drugs could help against both the mucosal inflammation and the COVID-19 pneumonia, sustained by the abnormal "cytokine storm."[5] On the other hand, we anecdotally report only 1 case of COVID-19 in our IBD cohort in a patient under azathioprine therapy.

Further studies are needed to investigate if IBD patients under biological treatment could be protected against the COVID-19 pneumonia, whereas those under immunosuppressive therapy (ie, thiopurines) could remain at higher risk of developing the disease due to the different mechanism of action.

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