Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Gastroenterology 2020;159:781–783

Characteristics and Prognosis of Patients With Inflammatory Bowel Disease During the SARS-CoV-2 Pandemic in the Basque Country (Spain)

Iago Rodríguez-Lago,[1] Patricia Ramírez de la Piscina,[2] Ainara Elorza,[1] Olga Merino,[3] Jone Ortiz de Zárate,[4] and José Luis Cabriada[1]

[1]Gastroenterology Department, Hospital de Galdakao and Biocruces Bizkaia Health Research Institute, Galdakao, Spain; [2]Hospital Universitario Araba, Vitoria, Spain; [3]Gastroenterology Department, Hospital Universitario de Cruces, Barakaldo, Spain; and [4]Gastroenterology Department, Hospital Universitario de Basurto, Bilbao, Spain

Keywords: COVID-19; Immunosuppression; Inflammatory Bowel Disease; SARS-CoV-2.

Since the first description of the new severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the infection produced by this microorganism (COVID-19) has been confirmed in 1,469,544 individuals around the world (www.healthmap.org/covid-19/). In Spain, the first case of COVID-19 was reported on the January 31, 2020, and currently there are 146,690 confirmed cases and 14,555 deaths secondary to this infection (Ministry of Health, Consumer Affairs and Social Welfare, April 7, 2020). In the Basque Country (Spain), 9452 subjects have a positive test for SARS-CoV-2 (April 7, 2020). Patients with inflammatory bowel disease (IBD) are of special interest during this outbreak because of the high proportion of them taking immunomodulators or biologics. There is also a possible increased risk of viral infections, especially in those receiving thiopurines.[1,2] Our aim was to describe the characteristics of patients with IBD with a positive test for SARS-CoV-2, including the course of the infection in terms of medical therapy, hospital or intensive care unit (ICU) admission, and death.

Methods

All patients with IBD and a positive test for SARS-CoV-2 from 5 sites on April 8, 2020, were included in the study. We compiled all the information in an online database using REDCap[3] electronic data capture tools including IBD characteristics and current medical therapy. Data related to the infection included date of diagnosis, considered as the first positive polymerase chain reaction test, history of any previous contact with SARS-CoV-2 cases, clinical manifestations, and radiological and laboratory findings at diagnosis. The course of the infection was assessed by including all drugs prescribed for COVID-19, need for hospital or ICU admission, or death during follow-up.

The medical treatment was prescribed according to local guidelines as follows. Pneumonia severity was stratified according to CURB-65 score and oxygen saturation. Hydroxychloroquine was prescribed in mild infections starting at 400 mg twice a day (bid) the first day, followed by 200 mg bid until day 5. Lopinavir/ritonavir 200/50 mg bid was initially indicated in patients with moderate to severe infection and relevant comorbidities or in those older than 60 years; however, more recent data led to its withdrawal from the guidelines. Treatment with systemic steroids and/or biologics (tocilizumab or anakinra) was started in case of worsening of respiratory symptoms or acute respiratory distress syndrome. Descriptive statistics were applied in all variables.

Results

Forty patients had a positive test for SARS-CoV-2 between February 27 and April 8, 2020. The main characteristics and outcomes are summarized in Table 1. Notably, 28% and 18% of cases were under immunomodulator of biologic monotherapy, respectively. The most frequent symptoms of COVID-19 were fever (77%) and cough (67%), with 21% reporting diarrhea. After the detection of SARS-CoV-2, most patients stopped immunomodulator (82%) or biologic (43%) maintenance therapy. No patient was admitted to the ICU. Treatment-related adverse events were reported in 2 patients (7.6%). Both cases experienced gastrointestinal intolerance secondary to lopinavir/ritonavir, which resolved after its withdrawal.

A 54-year-old woman with mild COVID-19 infection and a recent IBD diagnosis was admitted due to severe ulcerative colitis (UC) and received 2 doses of infliximab 10 mg/kg (week 6 and 7) during the course of the infection. She achieved clinical remission and recovered without sequelae. Two deaths were reported (5%). One in an 86-year-old man with prior diagnosis of diabetes, prostate adenocarcinoma, and ulcerative proctitis on mesalamine. The second occurred in a 77-year-old man with dementia and left-sided UC under mesalamine and methotrexate. In both cases, the main cause of the death

Abbreviations used in this paper: **bid, twice a day; IBD, inflammatory bowel disease; ICU, intensive care unit; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2; UC, ulcerative colitis.**

Most current article

0016-5085/$36.00
https://doi.org/10.1053/j.gastro.2020.04.043

Table 1. Patient Characteristics

Clinical characteristics	Frequency N = 40
Age, *y*	59 (48–68) Range 18–90
Gender, male	24 (60)
Disease type and extent	
Crohn's disease	13 (32)
L1 / L2 / L3	9 / 2 / 2
Perianal disease	1 (8)
UC	23 (58)
E1 / E2 / E3	4 / 16 / 7
IBD unclassified	4 (10)
Comorbidities[a]	25 (63)
Disease duration, *mo*	145 (51–195)
Clinical disease activity	
Harvey-Bradshaw	3 (1–5)
Partial Mayo	0 (0–1)
Previous treatments	
Systemic steroids	15 (38)
Thiopurines	11 (28)
Anti-TNF	11 (28)
Ustekinumab	4 (10)
Vedolizumab	1 (3)
IBD-related therapy at SARS-CoV-2 diagnosis	
Mesalamine	26 (65)
Systemic steroids	4 (10)
Thiopurines	8 (20)
Methotrexate	3 (8)
Infliximab	2 (5)
Adalimumab	1 (3)
Vedolizumab	1 (3)
Ustekinumab	3 (8)
Thiopurine plus anti-TNF	1 (3)
Thiopurine plus ustekinumab	1 (3)
Laboratory findings	
CRP, *mg/L*	27 (10–111)
Creatinine, *mg/dL*	0.84 (0.75–1.02)
Ferritin, *ng/mL*	469 (182–504)
D-dimer, *μg/mL*	694 (315–1,425)
Hemoglobin, *g/dL*	14.4 (11.7–15.6)
Total leucocytes, 10^9 *per L*	5.5 (4.6–6.8)
Neutrophils, 10^9 *per L*	3.7 (2.7–5.4)
Lymphocytes, 10^9 *per L*	0.82 (0.6–1.4)
Radiological findings	
Uni / bilateral	10 (40) / 15 (60)
Bilateral infiltrate	14 (56)
Consolidation	10 (40)
Ground-glass	1 (4)
Treatment of COVID-19	
None	14 (35)
Hydroxychloroquine	25 (63)
Lopinavir/ritonavir	15 (38)
Antibiotics	9 (23)
Steroids	5 (13)
Oseltamivir	1 (3)
Tocilizumab	1 (3)
Anakinra	1 (3)
Hospital admission	21 (53)

NOTE. All data are displayed as median (interquartile range) and n (%).
CRP, C-reactive protein; TNF, tumor necrosis factor.
[a]Chronic kidney disease, chronic pulmonary disease, congestive heart failure, coronary artery disease, diabetes, cerebrovascular disease, arterial hypertension, dementia, neoplasia.

was COVID-19 complicated with acute respiratory distress syndrome.

Discussion

Here, we observed that patients with IBD and a positive test for SARS-CoV-2 have a good overall prognosis. A relevant aspect is that approximately one-third of patients were under immunomodulator therapy, whereas 18% were on biologics. Moreover, although half of them required hospital admission, none were admitted to the ICU or needed mechanical ventilation.

Information regarding the characteristics and prognosis of this infection in patients with IBD is lacking,[4] but the impact of the outbreak and the current restrictions implemented in daily life and health care facilities may be crucial for this subset of patients.[5] Data from recent case series have reported no increased risk for COVID-19 in patients with a previous diagnosis of IBD in China and Italy.[6,7] Therefore, previous data did not support that medical therapy with immunomodulators or biologics increases the risk of this infection.

There are multiple aspects that should be considered regarding the relationship between SARS-CoV-2 and the gastrointestinal tract, as it can be detected in fecal samples in 55% of patients with COVID-19.[8] Several questions still remain open about this observation, like the potential infectious risk of fecal samples and the need for routine assessment of viral clearance in the stool. Moreover, the management of patients with IBD can be complex because of the presence of gastrointestinal manifestations of COVID-19 and the potential risk of reactivation of Crohn's disease or UC during or after the infection. As for today, the current recommendations from the main medical societies include maintaining the same medical therapy in all patients. Although this is correct for the whole IBD population, it is encouraged to perform an individualized strategy, as the withdrawal of some drugs can significantly reduce the risk of infection.[2]

We acknowledge that this is a quickly evolving field, with new data arising almost every day. Although our study has some important limitations, we hope that these data can bring some practical insights for thousands of colleagues and patients with IBD who are fighting against this pandemic.

References

1. Kirchgesner J, et al. Gastroenterology 2018;155:337–346.e10.
2. Zabana Y, et al. J Crohns Colitis 2019;13:828–837.
3. Harris PA, et al. J Biomed Inform 2009;42:377–381.
4. Monteleone G, et al. J Crohns Colitis 2020 Mar 26:jjaa061.
5. Fiorino G, et al. J Crohns Colitis 2020 Mar 24:jjaa058.
6. Norsa L, et al. Gastroenterology 2020 Apr 2:S0016-5085(20)30445-30455.
7. Mao R, et al. Lancet Gastroenterol Hepatol 2020;5:425–427.
8. Wu Y, et al. Lancet Gastroenterol Hepatol 2020;5:434–435.

Received April 9, 2020. Accepted April 16, 2020.

Correspondence
Address correspondence to Iago Rodríguez-Lago, MD PhD, Gastroenterology Department, Hospital de Galdakao Barrio Labeaga, 48960 Galdakao, Basque Country, Spain. e-mail: iago.r.lago@gmail.com.

Acknowledgments
We thank Horacio Alonso for his kind collaboration in this study.

CRediT Authorship Contributions
Iago Rodríguez-Lago, MD PhD (Conceptualization: Lead; Formal analysis: Lead; Investigation: Lead; Project administration: Lead; Supervision: Lead; Writing – original draft: Lead). Patricia Ramírez de la Piscina, MD (Data curation: Lead; Investigation: Lead). Ainara Elorza, MD (Data curation: Lead; Investigation: Equal; Writing – original draft: Equal). Olga Merino, MD (Data curation: Lead; Investigation: Lead). Jone Ortiz de Zárate, MD (Data curation: Equal; Investigation: Supporting). José Luis Cabriada, MD (Conceptualization: Equal; Supervision: Lead; Writing – review & editing: Lead).

Conflicts of interest
These authors disclose the following: Iago Rodríguez-Lago has received financial support for travelling and educational activities from or has served as an advisory board member for MSD, Pfizer, AbbVie, Takeda, Janssen, Roche, Tillotts Pharma, Shire Pharmaceuticals, Ferring, Dr. Falk Pharma, Adacyte, and Otsuka Pharmaceutical. José Luis Cabriada has received financial support for travelling and educational activities from or has served as an advisory board member for Adacyte, AbbVie, MSD, Janssen, Takeda, and Pfizer. The remaining authors disclose no conflicts.

Funding
Iago Rodríguez-Lago is supported by a grant from Biocruces Bizkaia Health Research Institute (Grant No. INT-BC-2018-007).