

Management of COVID-19 Pandemic in Spanish Inflammatory Bowel Disease Units: Results From a National Survey

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Background: The outbreak of COVID-19 has rapidly evolved into a pandemic that has represented a challenge to health systems worldwide. Inflammatory bowel disease (IBD) units have been forced to change their practices to address the disease and to ensure the quality of care.

Methods: We conducted a national survey among IBD gastroenterologist members of the Spanish Working Group on Crohn's Disease and Colitis regarding changes of practice, IBD treatments, and diagnosis and treatment of COVID-19.

Results: We received 54 answers from Spanish hospitals. One hundred percent of the IBD units rescheduled onsite visits to telematic consultation, and elective endoscopic and surgical procedures were delayed. Protective measures were also taken in the infusion units (100% of health centers) and hospital pharmacies, with 40.7% sending subcutaneous medications to patients. No switching between intravenous and subcutaneous anti-tumor necrosis factor drugs were made. We also found that 96.1% of IBD units advised their patients to maintain treatment if they were asymptomatic for COVID-19. For patients with COVID-19 symptoms, 92.6% of IBD units referred them to primary care or the emergency department. In addition, 7.5% of IBD units made a COVID-19 diagnosis through polymerase chain reaction and/or chest x-ray.

Modifications in IBD treatment and treatment recommended for COVID-19 are also discussed.

Conclusions: We report a representative national survey of changes made in the structure, diagnosis of COVID-19, and modifications in IBD treatments within IBD units.

Key Words: COVID-19, inflammatory bowel disease, coronavirus, quality of care

INTRODUCTION

In December 2019, an alert was issued from the Chinese population of Wuhan warning about a severe acute respiratory syndrome caused by a new coronavirus type 2 (SARS-CoV-2). This disease, which has been named coronavirus disease 2019 (COVID-19), exponentially spread across all continents in just a few weeks. On March 11, 2020, when approximately 300,000

people around the world were affected by COVID-19, the World Health Organization officially declared the disease a pandemic. This pandemic has affected more than 2.5 million people and caused more than 180,000 deaths as of April 23, 2020.¹

In Spain, the first imported case of COVID-19 was detected on January 31, 2020, the first official death was

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registered on February 13, and 2 months later, approximately 205,000 cases and 22,000 deaths have been documented. On March 14, when the pandemic reached 5723 confirmed cases in the country, the government of Spain declared a state of alarm with lockdown and social distancing measures.

Clinical manifestations of COVID-19 range from asymptomatic carriers or mild respiratory symptoms to cases of SARS and death.² Several risk factors have been linked to COVID-19 mortality,³ but predictors of pneumonia or severe complications of the disease are yet to be determined.

The course of COVID-19 in patients with immune-mediated diseases such as inflammatory bowel disease (IBD), and especially in patients undergoing immunosuppressant or biologic therapies, is still unknown. IBD units with a high COVID-19 burden have been forced to rapidly adapt to this new situation.⁴ Progressively national and international recommendations have been issued,⁵⁻⁸ including changing in-person appointments to telematic consultation, either by phone or e-mail; cancellation of all elective endoscopic procedures and management of immunosuppressants and biologics; and postponement of elective surgery if possible.

The goal of this survey was to compile information about organizational changes and protocols created for COVID-19 management among the different units and sites treating IBD in Spain.

METHODS

We designed a survey for IBD-specialized gastroenterologists, members of the Spanish Working Group on Crohn's Disease and Ulcerative Colitis (GETECCU) working in different IBD units in Spain.

The survey included items in 5 sections asking about the structure of IBD units, structural changes adopted because of the current pandemic, recommendations regarding immunosuppressive and biologic treatments during the SARS-CoV-2 pandemic, adopted measures regarding suspected COVID-19 in patients with IBD, and management of patients with IBD with confirmed COVID-19.

The survey was scientifically approved by GETECCU and sent on its behalf via e-mail to all of its members. Answers were collected using Google Forms LLC (Mountain View, CA). Google Forms allows survey organizers to draw results from a survey and export them directly to spreadsheets. Answers were obtained from March 26 to April 9, 2020. The deadline for submission was April 20.

Statistical Analysis

Results from the survey are presented through descriptive analysis. Continuous variables are displayed as medians and interquartile range. Categorical variables are reported as percentages (%) with 95% confidence intervals. Comparison between variables with normal distribution was done using the Student

t test for quantitative variables and the χ^2 test was used for qualitative variables. Normal distribution was confirmed using the Shapiro-Wilk test. If nonnormal distribution was detected, we used the corresponding nonparametric test.

Statistical analysis was done using Stata for Mac OS (Stata 15.1; November 2017, Stata Corp LLC). We considered statistical significance to be a *P* value of <0.05.

RESULTS

We received 54 answered surveys from GETECCU members across different hospitals in Spain (Fig. 1). Most of the respondents (36 doctors, 66.7%) are part of an IBD unit of which 24 have received the GETECCU's quality of care certification for comprehensive care IBD units. Thirteen doctors (24%) attend patients in monographic IBD clinics, and the rest of the surveyed doctors (5, 9.3%) usually attend IBD patients but only in general consultation (Fig. 2). The mean of IBD-dedicated gastroenterologists was 3.6 per hospital, attending IBD consultation an average 3.7 days per week (SD = 2.05). In addition, 75% of sites (40) have a specialized IBD nurse.

General Measures and Structural Changes in IBD Units During the SARS-CoV-2 Pandemic

During the COVID-19 crisis, 100% of hospitals surveyed have cancelled elective onsite consultation and changed to phone assistance, 40% have also attended patients via e-mail, and 13% have used social media to inform patients about the latest updates regarding IBD and SARS-CoV-2. The median date that hospitals applied these measures was March 13 (March 4-March 23). We found that 52% (28 hospitals) canceled outpatient clinics before the state of alarm was declared, and 37% (20 sites) suspended them on the first working day after the state of alarm was declared (Fig. 3). Forty-seven percent of hospitals canceled elective endoscopic procedures on March 16 (March 5-March 24), and 51% also suspended nonemergent surgeries on March 16 (March 5-March 23).

Self-isolation recommendations for nonimmunosuppressed IBD patients were the same as those that the Spanish Ministry of Health issued for the general population in 87% of the doctors surveyed. In 2 cases (3.7%), patients were also advised to wear a face mask when leaving their homes, 2 hospitals (3.7%) recommended teleworking and/or sick leave, and 3 respondents (5.6%) applied all mentioned measures to their patients.

Regarding immunosuppressed IBD patients, only 22.2% of the surveyed doctors (12 respondents) did not apply additional measures in addition to general recommendations for their patients. We found that 24 hospitals (44.3%) recommended teleworking and/or sick leave, in 2 cases (3.7%) patients were advised to wear a mask in public spaces, and the remaining 15 participants (27.8%) recommended all aforementioned measures.

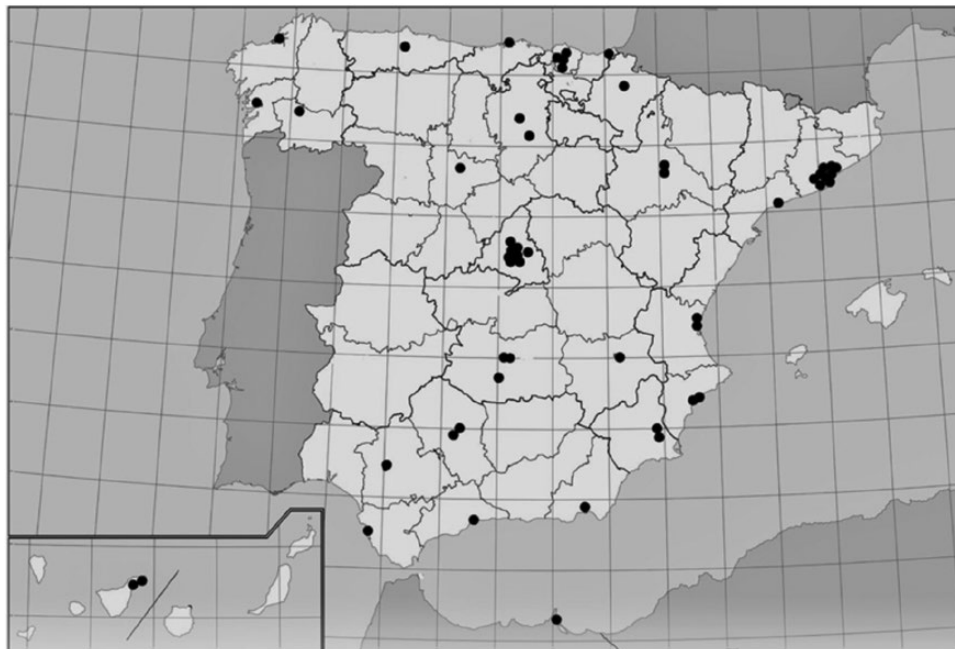


FIGURE 1. Location of participating sites in Spain. Modified from: MapANE 2015-2017 CC-BY 4.0 ign.es.

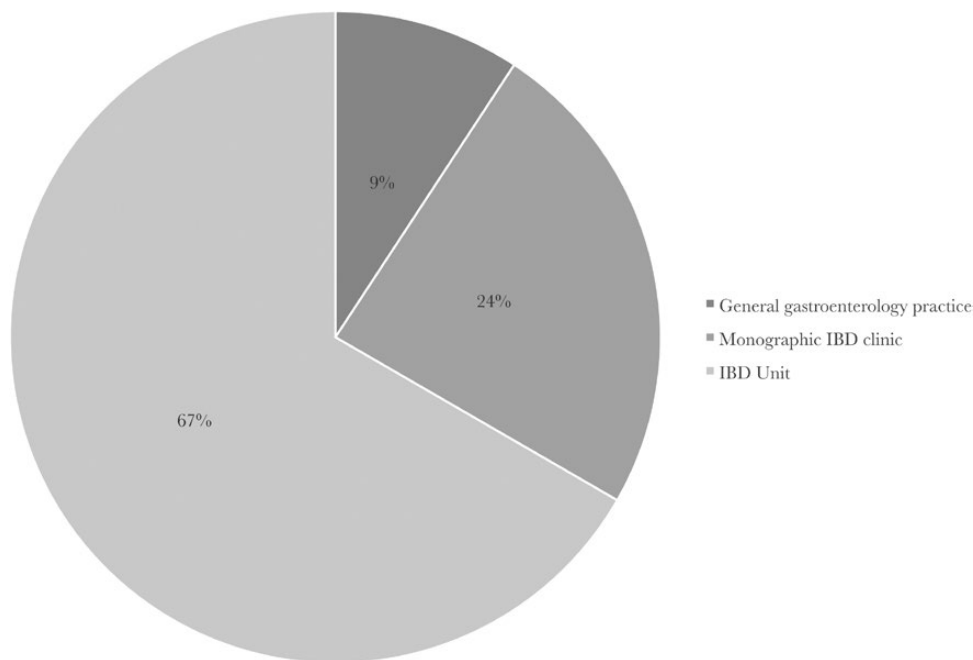


FIGURE 2. IBD care facility type.

Recommendations Regarding Immunosuppressive and Biologic Treatments During the SARS-CoV-2 Crisis

We found that 96.1% of sites recommended that asymptomatic patients remain on immunosuppressants to continue with the same regime, and 3.9% (2 sites) lowered the

immunosuppressant dose. All surveyed doctors (100%) advised patients on biologic therapies without suspected COVID-19 to continue treatment.

All (100%) respondents also applied protective measures in the day-care unit facility for intravenous biologics: 98% increased the distance between seats and supplied

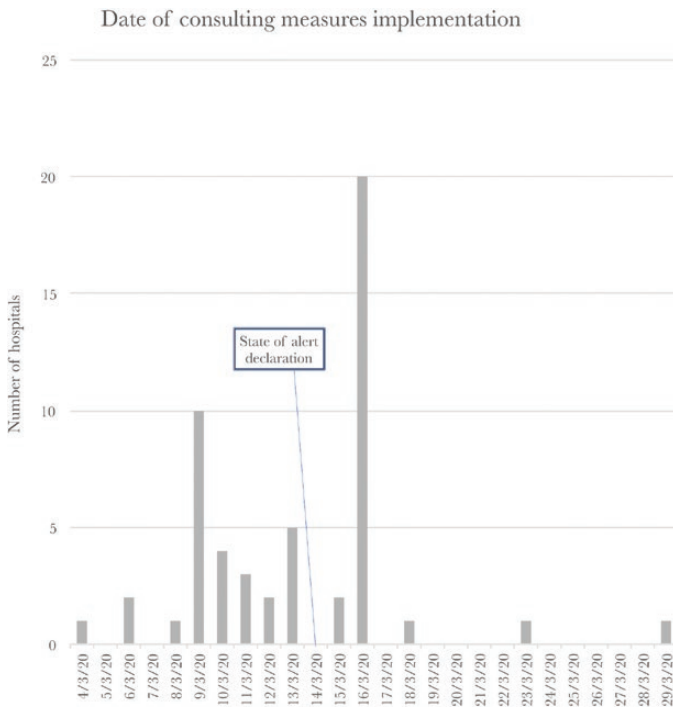


FIGURE 3. Date of outpatient clinic measures implementation.

surgical masks and 60% also provided a checklist regarding COVID-19 symptoms to be filled out by patients before treatment administration. One site (1.9%) used the checklist as the only preventive measure. None of the respondents recommended changing intravenous biologic treatment to equivalent subcutaneous biologic treatment. When asked about patients on subcutaneous biologics, doctors working at 87% of the sites noted that they had changed their usual practice with 1 or more measures. For example, 42.6% of respondents (23 doctors) advised patients to send someone else to collect treatment if possible, 48.1% of respondents (26) recommended gloves and a surgical mask if patients had to go to the hospital pharmacy, and at 40.7% of sites (22) treatment was delivered to a patient's home by the hospital pharmacy for some or all patients. Thirteen percent of sites continued their usual practice.

Adopted Measures Regarding Suspected COVID-19 in IBD Patients

Regarding the management of IBD patients contacting their physicians with mild symptoms suggesting COVID-19, 92.6% of surveyed IBD units referred patients to their primary care physician or the emergency department; of these, 28% (14 sites) referred all immunosuppressed patients to the emergency department and 10% (5 sites) referred all IBD patients regardless of their current treatment. At 4 sites (7.5%), the diagnosis of COVID-19 was made directly at the IBD unit via reverse transcription polymerase chain reaction and/or chest x-ray:

3 sites performed these tests only in immunocompromised IBD patients, and 1 hospital performed these tests in all IBD patients with suspected SARS-CoV-2 infection.

No significant differences were found regarding the management of IBD patients with suspected COVID-19 between sites with monographic IBD consultation or an IBD unit and those attending IBD patients in general consultation. Differences were also nonsignificant regarding the number of IBD-dedicated gastroenterologists per site (3.4 vs 4.7; $P = 0.16$) and the presence of an IBD nurse ($P = 0.9$).

Management of Patients With IBD With Confirmed COVID-19

Regarding IBD patients diagnosed with COVID-19 who did not need hospitalization, 68.6% of respondents referred patients to the local emergency department or infectious diseases unit for the prescription of experimental COVID-19 treatments. We found that 9.8% also referred patients to their primary care physician. Only 7.9% of respondents prescribed specific COVID-19 treatment without referral.

Preferred treatments for mild cases of COVID-19 in nonhospitalized IBD patients are summarized in Fig. 4. These regimes have likely changed over time as more information regarding COVID-19 and its experimental treatments has become available during these past weeks. Answers from respondents related to the management of IBD therapies in patients with suspected or confirmed SARS-CoV-2 infection are shown in Table 1. No statistically significant differences were found between respondent sites in any of the proposed clinical situations regarding COVID-19 and IBD.

DISCUSSION

The COVID-19 pandemic has severely affected Spain, with 205,905 cases confirmed by polymerase chain reaction and 22,902 deaths registered up to April 24, 2020, and has forced all hospitals to change their clinical practice, suspending all ambulatory procedures to minimize the risk of infection and relocating doctors and nurses to attend COVID-19 patients.

Evidence about the clinical course and prognosis of COVID-19 in IBD patients is lacking. Though preliminary data⁹⁻¹¹ suggest that COVID-19 has the same course as in the general population, strict surveillance of IBD patients is advised because of the high proportion of immunosuppressive therapies and increased risk of opportunistic infections. In addition, COVID-19 can also cause gastrointestinal symptoms mimicking an IBD flare, such as diarrhea, nausea, or vomiting.¹²

Because of these considerations, specialized IBD units have been required to make changes beyond general population measures. Some IBD units have published their experience during this pandemic,^{10, 11, 13} and national and international

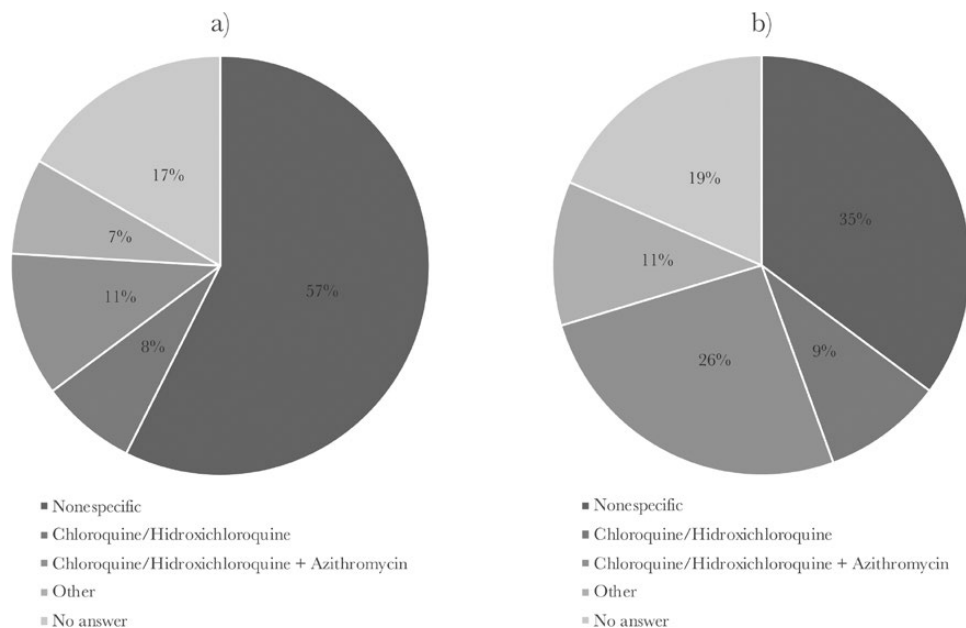


FIGURE 4. Recommended experimental treatments for COVID-19. A, Nonimmunocompromised patients. B, Immunocompromised patients.

TABLE 1. Management of IBD Therapies in Different Clinical Scenarios

Clinical Scenario Management	Inactive IBD With Suspected COVID-19	Active IBD With Suspected COVID-19	Inactive IBD With Confirmed Mild COVID-19	Active IBD With Confirmed Mild COVID-19	Inactive IBD in COVID-19, Hospitalized	Active IBD With Severe COVID-19, Hospitalized
Continue immunosuppressants and biologics	44.2% ^a	65.3%	26.5%	40%	6%	18%
Plus fast tapering of corticosteroids		25.5%		12%		8%
Withdraw immunosuppressants and biologics	46.2%	14.3%	58.5%	38%	84%	58%
Plus fast tapering of corticosteroids		2%		8%		26%
Withdraw immunosuppressants/continue biologics	5.8%	4%	9.4%	20%	6%	18%
Withdraw biologics/continue immunosuppressants	3.8%	16.3%	5.6%	2%	4%	6%

^aPercentages represent the number of respondents.

associations have issued recommendations regarding SARS-CoV-2 and IBD.⁵⁻⁸

This survey reflects the early adjustment of Spanish IBD units to this exceptional situation. In most cases, changes were adopted before official recommendations were published. The main measures adopted were the fast change to telematic assistance, cancelling ambulatory elective endoscopic and surgical procedures, and making structural changes in outpatient facilities and hospital pharmacies regarding administration and delivery of biologics. Differences in adoption dates for these measures can be explained because of geographic variability in the arrival of the epidemic. Even if the peak of the epidemic is contained, many of these changes will have to

remain active to minimize the risk of infection among patients during the following months.

Regarding the diagnosis of COVID-19 in IBD, most IBD units referred patients to other departments, such as primary care, emergency, or infectious diseases departments. Only 4 hospitals carried out diagnostic procedures directly at the IBD consultation; all of these have daily onsite IBD assistance.

There is also great variability concerning the management of IBD therapies depending on the clinical scenario, probably because of the lack of scientific evidence, the variation in local protocols, and the different official recommendations published during the pandemic.

The main strength of this study is the large number of respondents, with more than 50 IBD units from most regions in Spain, so the sample provides very good representativeness of the situation in Spanish IBD units during the epidemic.

This survey has some limitations. First, most of the answers come from IBD units in tertiary hospitals; this may constitute a potential bias regarding available resources for patient management. The epidemiological variability between regions can also affect answers, as the different incidences of COVID-19 also imply different burdens on the health care system. Finally, experimental options to treat SARS-CoV-2 infection have continuously changed during the pandemic, so items on the survey regarding treatment would have different answers depending on the reply date.

CONCLUSIONS

The worldwide pandemic caused by COVID-19 has forced IBD units across Spain to abruptly change their daily clinical practice, mainly by adopting telematic assistance as their routine form of consultation during these weeks. Spanish IBD centers have developed a fast, widespread, uniform response to this pandemic.

There is variability regarding the management of treatments in IBD patients affected by COVID-19. More evidence is needed to define protocols for this matter.

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