COVID-19 in Patients With Inflammatory Bowel Disease: A Single-center Observational Study in Northern Italy

Key Words: COVID-19, SARS-CoV-2, inflammatory bowel disease, Crohn's disease, ulcerative colitis

To the Editors,

Coronavirus disease 2019 (COVID-19), an infectious disease caused by coronavirus SARS-CoV-2, has rapidly spread to a global pandemic. For patients with inflammatory bowel disease (IBD), significant concern arises from the widespread use of immunosuppressive therapies,[1] yet preliminary data do not indicate a worse clinical course.[2,3] However, limited data are available concerning the risk of acquiring COVID-19.

We conducted a retrospective cohort study among adult IBD patients followed in our center in Lombardy, aimed at defining prevalence and risk factors for acquiring the infection.

All patients were individually contacted by phone between March and April 2020. Because during the study period virologic testing was available only for inpatients or health care workers besides laboratory confirmed diagnosis, we also included probable cases according to WHO reccomendations (ie, occurrence of an acute respiratory illness AND residence in a high-prevalence area or contact with a COVID-19 case). To ensure validity of the diagnosis of probable cases, one of the following additional criteria was also required: previous influenza vaccination or close contact with a COVID-19 case.

Patients provided verbal informed consent for the inclusion in the study.

Among 704 included patients (suppl Fig 1 and suppl Table 1), 53 (7.5%) were diagnosed with COVID-19, and 9 (1.2%) had a laboratory-proven diagnosis. Demographic and clinical characteristics are listed in Table 1. At logistic regression, only severely active IBD (odds ratio [OR], 12.6; 95% CI, 1.7–92.4; $P = 0.01$) was significantly associated with COVID-19 (suppl Table 2). Diarrhea was the presenting symptom in 26 (49%) patients, and significantly more cases reported diarrhea compared with non-COVID-19 patients (OR, 29; $P < 0.0001$), independently from disease activity at multiple regression analysis (suppl Table 2).

As of May 11, 2020, 81,507 laboratory-confirmed cases have been reported in Lombardy, with a cumulative incidence rate of 0.81%; in our cohort, this was roughly similar (1.2%). Yet given the inability to test outpatients with milder symptoms, a 10-fold higher period prevalence has been hypothesized based on mortality and assumptive case-fatality rate,[4] again not dissimilar from our data.

Severely active IBD was associated with COVID-19, though this has to be considered with caution because severe flare leading to hospitalization was actually a reason for testing. No other association with any disease aspect, including immunosuppressive therapies, was found.

Accordingly, maintaining effective treatment to avoid severe flares of IBD could reduce the risk of COVID-19.

Moreover, this diarrhea-predominant picture of COVID-19 in IBD has to be taken into specific consideration to avoid erroneous attribution of newly developed symptoms and incorrect management.[5]

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TABLE 1. Demographic and Clinical Characteristics of COVID-19 IBD Patients Compared with Non COVID-19 IBD Patients

	IBD Patients With COVID-19 (n=53)	IBD Patients Without COVID-19 (n=651)	*P*
Age(years)	50 (42–62)	53 (41–65)	*P* = ns
Females	26 (49)	275 (42.2)	*P* = ns
Type of IBD			
Crohn's disease	20 (37.7)	275 (42.2)	*P* = ns
Ulcerative colitis	33 (62.3)	376 (57.7)	
CD extension			
Ileal	10 (50)	95 (34.5)	*P* = 0.02
Colonic	2 (10)	69 (25)	
Ileocolonic	8 (40)	111 (40.4)	
Upper disease	5 (25)	21 (7.6)	
Perianal disease	0 (0)	33 (12)	
UC extension			
Proctitis	11 (33)	72 (19.1	*P* = 0.004
Left-sided colitis	15 (46)	106 (28.2)	
Extensive colitis	7 (21)	198 (52.7)	
Flu vaccination	23 (43.4)	320 (49.1)	*P* = ns
Active cigarette smoking	8 (15.1)	110 (16.9)	*P* = ns
Therapy for IBD			
None	4 (7.5)	59 (9)	*P* = ns
Aminosalicylates	30 (56.6)	365 (56.1)	
Immunosuppressants (thiopurines /methotrexate)	8 (15.1)	97 (14.9)	
High dose systemic corticosteroids	2 (3.7)	9 (1.4)	
Anti-TNF	8 (15.1)	87 (13.4)	
Vedolizumab	1 (1.9)	25 (3.8)	
Ustekinumab	1 (1.9)	15 (2.3)	
Investigational drugs (within a clinical trial)	0 (0)	1 (0.1)	
Disease Activity			
Inactive	44 (83)	554 (85)	*P* = 0.01
Mild	5 (9.5)	72 (11)	
Moderate	2 (3.8)	23 (3.5)	
Severe	2 (3.8)	2 (0.3)	
Comorbidities			
Systemic hypertension	9 (16.9)	148 (22.7)	*P* = ns
Cardiac disease	5 (9.4)	31 (4.8)	
COPD	2 (3.8)	25 (3.8)	
Diabetes mellitus	0 (0)	31 (4.8)	
Chronic kidney disease	3 (5.7)	14 (2.1)	
Any comorbidity	18 (33.9)	277 (42.5)	*P* = ns
BMI	23.5 (21–27)	24.1 (21.6–26.6)	*P* = ns

Data are reported as absolute frequencies (%) and medians (IQR). Abbreviations: CD, Crohn's disease; UC, ulcerative colitis; COPD, chronic obstructive pulmonary disease; BMI, body mass index.

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