

LETTER

A fatal case of COVID-19 pneumonia occurring in a patient with severe acute ulcerative colitis

Since December 2019, a novel coronavirus referred to as SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2)¹ was identified as the causative agent of a respiratory syndrome named COVID-19.² Since February 2020, an outbreak of COVID-19 has developed in Lombardy, in northern Italy, posing serious challenges to healthcare system. As reported, COVID-19 severity directly correlates with patient's age and several comorbidities,³ but no data are currently available regarding clinical outcome in inflammatory bowel diseases (IBD). Recently, the International Organization for the Study of Inflammatory Bowel Disease (IOIBD) recommended a reduction of corticosteroid therapy in IBD patients, while maintaining thiopurines and biologics,⁴ even if Authors recognised that specific IBD research on COVID-19 is lacking.

On 12 February 2020, days before this outbreak was recognised, an 80-year-old female with a 3-year history of left-sided ulcerative colitis (UC), in maintenance with mesalamine, presented to our clinic with a 7-day history of fever and bloody diarrhoea. On admission, the patient reported four bowel movements per day with blood and fever up to 38.5°C. Laboratory tests documented severe anaemia (haemoglobin 7 g/dL) and increased C-reactive protein (CRP) (6 mg/dL). A sigmoidoscopy showed large and deep ulcers in sigmoid colon and rectum (figure 1). Stool cultures were negative, including tests for *Clostridium difficile*. The patient was therefore diagnosed



Figure 1 Endoscopic image of the sigmoid colon showing severe inflammation with large and deep ulcers.



Figure 2 On the left, a plain chest X-ray showing bilateral pulmonary infiltrates; on the right, a chest CT scan showing multiple bilateral pulmonary ground-glass opacities.

with a severe UC relapse and intravenous corticosteroid therapy (methylprednisolone 40 mg/day) was started. During the next 3 days, the frequency of bowel movements decreased, fever resolved and CRP returned into normal range. On the fourth day, fever up to 39°C developed, followed by dry cough. On the basis of the evolving knowledge regarding SARS-CoV-2 outbreak, including data relative to hospital-acquired infections, a case of COVID-19 was suspected. Chest radiography showed bilateral pneumonia, confirmed by chest CT scan (figure 2). The nasopharyngeal swab sample confirmed the presence of SARS-CoV-2 and a diagnosis of COVID-19 pneumonia was made. The patient was treated with non-invasive ventilation, and a combination of lopinavir/ritonavir and hydroxychloroquine. Intravenous corticosteroid was rapidly switched to oral prednisone, and an accelerated tapering was initiated. Despite an initial improvement, the patient's condition subsequently worsened and the patient died after 14 days of hospitalisation. Prednisone dosage at the time of patient's death was 25 mg daily.

Corticosteroids administration showed no effect on mortality but delayed lower respiratory tract clearance of the coronavirus in both SARS and Middle East respiratory syndrome.⁵ In a recent retrospective study, corticosteroids were more frequently administered in patients with poor outcome,⁶ although another study showed potential benefit for patients who develop acuterespiratory distress syndrome.⁷ Current WHO recommendations suggest that routine corticosteroids should be avoided in COVID-19, unless they are indicated for another reason.⁵ According to recent reports, >75% of patients with COVID-19 received antiviral drugs, including lopinavir/ritonavir. Lopinavir/ritonavir has shown anti-coronavirus activity in vitro and was associated with a reduced mortality in SARS,⁸ however a recent clinical trial demonstrated no benefit

in hospitalised patients with severe COVID-19.⁹ Chloroquine is a cheap and a safe drug widely used for malaria and autoimmune diseases, and has recently been reported as a potential broad-spectrum antiviral drug. A recent study revealed that chloroquine was highly effective in the control of SARS-CoV-2 in vitro.¹⁰ Finally, we hereby report the first case of a COVID-19 pneumonia in an elderly patient with severe acute UC treated with corticosteroids. Considering a COVID-19 incubation time of up to 14 days, it is possible that the patient was already harbouring SARS-CoV-2 when corticosteroids were initiated; as a consequence, it would be advisable to test for the virus before systemic steroid initiation in highly epidemic areas. Nevertheless, further evidences are required to define the best treatment strategy in IBD patients.

Stefano Mazza ,¹ Andrea Sorce,¹ Flora Peyvandi,^{2,3} Maurizio Vecchi,^{1,3} Flavio Caprioli^{1,3}

¹Gastroenterology and Endoscopy Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy

²Angelo Bianchi Bonomi Hemophilia and Thrombosis Center, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy

³Department of Pathophysiology and Transplantation, Università degli Studi di Milano, Milan, Italy

Correspondence to Prof Flavio Caprioli, Gastroenterology and Endoscopy Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy; flavio.caprioli@gmail.com

Contributors SM and FC wrote the letter; AS, FP and MV critically reviewed the letter and made adjustments to the text.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Not required.

Provenance and peer review Not commissioned; internally peer reviewed.

This article is made freely available for use in accordance with BMJ's website terms and conditions for the duration of the covid-19 pandemic or until otherwise determined by BMJ. You may use, download and print the article for any lawful, non-commercial purpose (including text and data mining) provided that all copyright notices and trade marks are retained.

© Author(s) (or their employer(s)) 2020. No commercial re-use. See rights and permissions. Published by BMJ.



To cite Mazza S, Sorce A, Peyvandi F, et al. *Gut* 2020;**69**:1148–1149.

Received 22 March 2020

Revised 31 March 2020

Accepted 31 March 2020

Published Online First 3 April 2020

Gut 2020;**69**:1148–1149. doi:10.1136/gutjnl-2020-321183

ORCID iD

Stefano Mazza <http://orcid.org/0000-0002-9068-3209>

REFERENCES

- Huang C, Wang Y, Li X, *et al*. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *Lancet* 2020;395:497–506.
- Wu F, Zhao S, Yu B, *et al*. A new coronavirus associated with human respiratory disease in China. *Nature* 2020;579:265–9.
- Guan W-jie, Ni Z-yi, Hu Y, *et al*. Clinical characteristics of coronavirus disease 2019 in China. *N Engl J Med Overseas Ed* 2020.
- IOIBD Update on COVID19 for Patients with Crohn's Disease and Ulcerative Colitis. Available: <https://www.ioibd.org/ioibd-update-on-covid19-for-patients-with-crohns-disease-and-ulcerative-colitis/> [Accessed 15 Mar 2020].
- World Health Organization. *Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected: interim guidance, 13 March 2020 (license: CC BY-NC-SA 3.0 IGO)*. World Health Organization, 2020. <https://apps.who.int/iris/handle/10665/331446>
- Zhou F, Yu T, Du R, *et al*. Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: a retrospective cohort study. *Lancet* 2020;395:1054–62.
- Wu C, Chen X, Cai Y, *et al*. Risk factors associated with acute respiratory distress syndrome and death in patients with coronavirus disease 2019 pneumonia in Wuhan, China. *JAMA Intern Med* 2020. doi:10.1001/jamainternmed.2020.0994
- Chu CM, Cheng VCC, Hung IFN, *et al*. Role of lopinavir/ritonavir in the treatment of SARS: initial virological and clinical findings. *Thorax* 2004;59:252–6.
- Cao B, Wang Y, Wen D, *et al*. A trial of Lopinavir-Ritonavir in adults hospitalized with severe Covid-19. *N Engl J Med* 2020. doi:10.1056/NEJMoa2001282
- Wang M, Cao R, Zhang L, *et al*. Remdesivir and chloroquine effectively inhibit the recently emerged novel coronavirus (2019-nCoV) in vitro. *Cell Res* 2020;30:269–71.

Correction: A fatal case of COVID-19 pneumonia occurring in a patient with severe acute ulcerative colitis

Mazza S, Sorce A, Peyvandi F, *et al.* A fatal case of COVID-19 pneumonia occurring in a patient with severe acute ulcerative colitis. *Gut* 2020;69:1148–9. doi: 10.1136/gutjnl-2020-321183

The correct name of the second author should be Andrea Sorge.

This article is made freely available for use in accordance with BMJ's website terms and conditions for the duration of the covid-19 pandemic or until otherwise determined by BMJ. You may use, download and print the article for any lawful, non-commercial purpose (including text and data mining) provided that all copyright notices and trade marks are retained.

© Author(s) (or their employer(s)) 2021. No commercial re-use. See rights and permissions. Published by BMJ.

Gut 2021;70:e5. doi:10.1136/gutjnl-2020-321183corr1

