Epidemiology and the Impact of Therapies on the Outcome of COVID-19 in Patients With Inflammatory Bowel Disease

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INTRODUCTION: It has been hypothesized that people suffering from inflammatory bowel disease (IBD) have an increased risk of coronavirus disease (COVID-19). However, it is not known whether immunosuppressive therapies exacerbate the COVID-19 outcome.

METHODS: We reviewed data on the prevalence and clinical outcomes of COVID-19 in patients with IBD.

RESULTS: COVID-19 prevalence in patients with IBD was comparable with that in the general population. Therapies using antitumor necrosis factor-α agents have been associated with better clinical outcomes.

DISCUSSION: Management and treatments provided by gastroenterologists were effective in reducing COVID-19 risk. Antitumor necrosis factor-α agents seem to mitigate the course of COVID-19.
Table 1. Outcomes of COVID-19 in patients with IBD according to treatment with anti-TNF-α antibodies or steroids

| Database/study/case report (country)/ref | Total pts. with COVID-19 (CD/UC/IBDU) | Total inpatients | Total pts with severe outcomes (ICU/VU/death) | Patients in treatment with anti-TNF-α (%) | Severe outcomes (ICU/VU/death) in pts in treatment with anti-TNF-α (%) | Patients in treatment with steroids (%) | Severe outcomes (ICU/VU/death) in pts in treatment with steroids (%) |
|----------------------------------------|--------------------------------------|------------------|-----------------------------------------------|----------------------------------------|--------------------------------------------------------------------------------|----------------------------------------|----------------------------------------------------------------------------|
| SECURE-IBD database (worldwide) (3)    | 1,069 (604/465)                      | 352 (33%)        | 96 (9%)                                       | 60 (19%)                               | 8 (3%)                                                                          | 56 (66%)                               | 22 (26%)                                                                     |
| Bezzio et al. (Italy) (4)              | 79 (32/47)                           | 22 (28%)         | 6 (8%)                                        | NA                                     | NA                                                                              | 2 (3.4%)                               | 2 (22.2%)                                                                    |
| Rodriguez-Lago et al. (Spain) (5)      | 40 (13/23/4)                         | 21 (53%)         | 2 (5%)                                        | 3 (8%)                                 | 0                                                                              | 4 (10%)                                | 0                                                                           |
| Allocca et al. (Italy—France) (6)      | 15 (9/6)                             | 5 (33%)          | 0                                             | 1 (6%)                                 | 0                                                                              | 2 (13%)                                | 0                                                                           |
| Taxonera et al. (Spain) (7)            | 12 (7/5)                             | 8 (67%)          | 1 (8%)                                        | 2 (67%)*                               | 0                                                                              | 0                                      | 0                                                                           |
| Gubatan et al. (USA) (8)               | 5 (3/2)                              | NA               | NA                                            | NA                                     | NA                                                                              | NA                                     | NA                                                                          |
| Khan et al. (USA) (9)                  | 36                                   | NA               | NA                                            | 3 (8.3%)                               | NA                                                                              | NA                                     | NA                                                                          |
| Mazza et al. (Italy) (10)              | 1 UC                                 | 1                | 1                                             | 0                                      | 0                                                                              | 1                                      | 1                                                                           |
| Tursi et al. (Italy) (11)              | 1 CD                                 | 1                | 0                                             | 0                                      | 0                                                                              | 0                                      | 0                                                                           |

CD, Crohn’s disease; COVID-19, coronavirus disease; IBDU, inflammatory bowel disease unclassified; ICU, intensive care unit; NA, not available; pts, patients; SECURE, Surveillance Epidemiology of Coronavirus Under Research Exclusion; TNF, tumor necrosis factor; UC, ulcerative colitis; VA, ventilator use.

*Three patients affected by COVID-19 were under treatment with anti-TNF-α: one pt with adalimumab, one pt with golimumab plus methotrexate, and one pt with adalimumab plus methotrexate; the first 2 patients were admitted to hospital.

CONCLUSIONS

Although significant uncertainty remains, the data accumulated thus far have demonstrated that the clinical course of COVID-19 is milder and less severe in patients with IBD compared to those in the general population. The recommendations for managing COVID-19 in patients with IBD remain under study, and further research is needed to provide definitive guidelines.

The literature shows that the therapy effect on COVID-19 outcomes varies across patients (Table 1). In the case of patients treated with anti-TNF-α and in those not treated, the risk of developing COVID-19 is lower. The rate of hospitalization among patients treated with anti-TNF-α and those not treated is significantly lower. However, further studies are needed to confirm these findings.

The use of immunosuppressants and biologics in patients with IBD should be considered carefully, as the risk of opportunistic infections and increased risk of COVID-19 should be balanced against the benefits of disease control. Further research is needed to determine the optimal timing and duration of immunosuppression in patients with IBD who are at high risk for COVID-19.
interpreting the current presented data, and further properly designed epidemiological studies should be conducted.

CONFLICTS OF INTEREST
Guarantor of the article: Antonio Tursi, MD.
Specific author contributions: Alfredo Papa, MD, PhD, and Antonio Tursi, MD, contributed equally to the manuscript. A.P., A.G., and A.T. planned and conducted the study; A.P. and A.T. collected and interpreted data; A.T. and A.P. drafted the manuscript; A.T., A.G. and A.P. approved the final draft submitted.
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