Management of Immune-Related Colitis During the COVID-19 Pandemic

To the Editors,

The coronavirus disease 2019 (COVID-19) pandemic continues to plague the world since it was first detected in December 2019. Immunocompromised patients, including those with cancer, are at increased risk of severe illness and mortality from infection.[1] Immune checkpoint inhibitors have revolutionized cancer management but can also trigger an immune response leading to immune-related adverse events affecting multiple organ systems, including the gastrointestinal tract. Treatment with immunosuppressive therapies is usually required for a prolonged period of time.[2] Inflammatory bowel disease is characterized by immune-mediated chronic inflammation of the gastrointestinal tract and bears a significant similarity to immune-mediated diarrhea and colitis (IMDC) in presentation and management. It remains unanswered as to whether gut inflammation and therapeutic immunosuppression for IMDC can increase the risk for COVID-19 infection and its related complications.

We report a retrospective review of all patients with cancer evaluated by gastroenterologists at our institution for IMDC from December 1, 2019, to April 30, 2020. Medical records were reviewed and telephone surveys were conducted among 69 patients who met the criteria; 43 patients completed the survey. Table 1 summarizes the survey results, focusing on the risk factors and protective measures related to COVID-19 infection. We found that 86% of patients always wore a mask when leaving home, 74% washed their hands more than 10 times daily, and 84% had less than 4 close contacts with nonhousehold individuals on weekly basis. Of note, 36 patients had confirmed negative COVID-19 tests. Among the patients without testing, there was no concern for COVID-19 to prompt testing during the study period.

We identified several factors that may have contributed to the low infection rate of COVID-19 among our patients with IMDC. First, we observed high levels of compliance with effective preventive measures[3] of social distancing and wearing masks in this population. Second, most of our cohort resided in Texas, which was not the hot-spot of COVID-19 during the study window. Finally, immunosuppression may mitigate the cytokine release syndrome associated with severe COVID-19 infection based on recent evidence.[4] We speculate that this factor may have contributed to the lack of overt clinical manifestations of infection among asymptomatic patients who were not tested for COVID-19. This study was limited by patient self-recall relating to adherence to preventive measures.

Based on our overall findings, we do not believe that the concern for COVID-19 should negatively affect optimal management of IMDC with immunosuppressive therapy as long as protective measures such as social distancing and wearing masks are emphasized and adequately implemented.

Rajan Amin, MD,[*,a]
Anusha S. Thomas, MD,[†,a]
Shruti Khurana, MD,[*]
Kavea Panneerselvam, MD,[‡]
Fangwen Zou, MD,[†]
Weijie Ma, MD,[†]
Suresh T. Chari, MD,[†] and
Yinghong Wang, MD, PhD[†]

From the *Department of Internal Medicine, The University of Texas, Health Science Center, Houston, Texas, USA; †Department of Gastroenterology, Hepatology and Nutrition, The University of MD Anderson Cancer Center, Houston, Texas, USA; ‡Department of Internal Medicine, Baylor College of Medicine, Houston, Texas, USA

aThese authors contributed equally.

Conflicts of interest: Yinghong Wang serves as a consultant for Tillotts Pharma. The other authors declare no conflict of interest related to the study findings.

Address correspondence to: Yinghong Wang, MD, PhD, Department of Gastroenterology, Hepatology and Nutrition, Unit 1466, The University of Texas MD Anderson Cancer Center, 1515 Holcombe Blvd, Houston, TX 77030 (ywang59@mdanderson.org).

REFERENCES

1. Dai M, Liu D, Liu M, et al. Patients with cancer appear more vulnerable to SARS-COV-2: a multi-center study during the COVID-19 outbreak. *Cancer Discov.* 2020;10:783–791.
2. Brahmer JR, Lacchetti C, Schneider BJ, et al.; National Comprehensive Cancer Network. Management of immune-related adverse events in patients treated with immune checkpoint inhibitor therapy: American Society of Clinical Oncology Clinical Practice Guideline. *J Clin Oncol.* 2018;36:1714–1768.
3. Matrajt L, Leung T. Evaluating the effectiveness of social distancing interventions to delay or flatten the epidemic curve of coronavirus disease. *Emerg Infect Dis.* 2020;26:1740–1748.
4. Veronese N, Demurtas J, Yang L, et al. Use of corticosteroids in coronavirus disease 2019 pneumonia: a systematic review of the literature. *Front Med (Lausanne).* 2020;7:170.

TABLE 1. Variables Related to COVID-19 Between December 1, 2019, and April 30, 2020 (N = 69)

Variables	Number of Patients (%)
Telephone survey completed (%)	43 (62)
Underlying lung disorders (%)	
COPD	10 (14)
Asthma	1 (1)
Lung cancer	11 (16)
Lung metastasis	19 (28)
Cancer type (%)	
Melanoma	19 (28)
Genitourinary	20 (29)
Lung	11 (16)
Gastrointestinal	2 (3)
Head and neck	7 (10)
Hematological	5 (7)
Other	5 (7)
Cancer stage IV (%)	53 (77)
Checkpoint inhibitor type (%)	
CTLA-4	6 (9)
PD-1/L1	42 (61)
Combination	21 (30)
Patients with ANC <1500 cells/μL (%)	10 (14)
Peak CTCAE grade of diarrhea, 2-4 (%)	60 (87)
Peak CTCAE grade of colitis, 2-4 (%)	59 (87)
Treatment of ICI colitis (%)	
Supportive care only	5 (7)

TABLE 1. Continued

Variables	Number of Patients (%)
Mesalamine	27 (39)
Immunosuppressive therapy,* n = 54 (%)	
Steroids	45 (65)
Vedolizumab	24 (35)
Infliximab	6 (9)
Primary residence, n = 69 (%)	
Resides in hot spot*	
Louisiana	8 (12)
Illinois	1 (1)
Does not reside in hot spot	
Texas	54 (78)
Other states†	6 (9)
Nursing home or other facility resident,‡ n = 43 (%)	1 (2)
International travel‡ (n = 43), no. (%)	1 (2)
Number of times leaving home during past 5 months,‡ n = 43 (%)	
<4	19 (44)
5-10	9 (21)
>10	15 (35)
Wearing mask when leaving home during past 5 months,‡ n = 43 (%)	
Always	37 (86)
Never	2 (5)
Sometimes	4 (9)
Number of times washing hands daily,‡ n = 43 (%)	
<4	1 (2)

TABLE 1. Continued

Variables	Number of Patients (%)
5-10	10 (23)
>10	32 (74)
Weekly close contacts other than household members,‡ n = 43 (%)	
<4	36 (84)
5-10	3 (7)
>10	4 (9)
Tested for COVID-19 via nasal swab, n = 69 (%)	
Yes	38 (55)
No	31 (45)
COVID-19 test result, n = 69 (%)	
Positive	0 (0)
Negative	38 (55)
Not available, no COVID-19 concern on the most recent visit	31 (45)
Deaths, n = 11 (%)	
Cancer-related	11 (100)
COVID-19-related	0 (0)

ANC, absolute neutrophil count; COPD, chronic obstructive pulmonary disease; CTCAE, Common Terminology Criteria for Adverse Events; CTLA-4, cytotoxic T lymphocyte antigen-4; PD-1/L1, programmed death-1/programmed death-1 ligand; ICI, immune checkpoint inhibitor.

[a]Information regarding hot spots obtained from Johns Hopkins University Center for Systems Science and Engineering for time period December 1, 2019, to April 30, 2020.

[b]Other states include Mississippi, Arkansas, Florida, and Alabama.

‡Self-reported data from patient surveys.