Management of Inflammatory Bowel Disease and COVID-19 in New York City 2020: The Epicenter of IBD in the First Epicenter of the Global Pandemic

Asher Kornbluth, MD,* Michele Kissous-Hunt, RPA-C,* James George, MD,* and Peter Legnani, MD*

Key Words: COVID-19, New York City, biologic drugs, clinical outcomes, practice management

ur clinical practice is located in New York City (NYC), New York, the global epicenter of coronavirus 2019 (COVID-19). At the time of this writing in early July 2020, there have been over 222,000 cases and nearly 23,000 deaths in NYC in the 3 months ending in June 2020. As of early June 2020 we have managed 65 patients with IBD and confirmed SARS-CoV-2 diagnosed by PCR-RNA for the virus (48 patients), by positive IgG antibodies (17 patients), and by classic COVID-19 presentations. As of June 2020, the number of cases from this practice exceeds the number of cases reported from of any state outside of New York in the United States and exceeds the number of cases in 43 of the 47 countries reporting to the international SECURE-IBD registry of patients with IBD and SARS-CoV-2infection.¹ In this article, we share our real-world experience in the care of this large cohort of patients, describe our practice's approach, and offer suggestions to the practical care of the patient with IBD and COVID-19. We also hope to describe the sense of life in NYC at this uniquely tragic time. Through the month of June, NYC had successfully passed through "Phase 1 of reopening," allowing most businesses to

Address correspondence to: Asher Kornbluth, MD, 1150 Fifth Avenue, Suite 1B, New York City, NY 10128, USA. E-mail: asher.kornbluth@gmail.com.

© 2020 Crohn's & Colitis Foundation. Published by Oxford University Press. All rights reserved. For permissions, please e-mail: journals.permissions@oup.com. doi: 10.1093/ibd/izaa212

Published online 3 September 2020

open with appropriate "social distance" and wearing of masks both indoors and outdoors. This followed a 3-month period of onerous and suffocating but effective shutdown of NYC. But by early July, some plans to further reopen NYC were abruptly halted by the recognition of major new outbreaks in states such as Arizona, Texas, and Florida, where statewide closings came too late and reopening occurred too early. This has led, almost predictably, to a foreboding spike in cases, hospitalizations, ICU admissions and deaths into August 2020, in a pattern resembling the onset of the most ominous weeks in NYC in March, April and May. As the number of cases is now growing alarmingly throughout other areas of this country and around the world, we hope that sharing the lessons that we have learned to date will be of value to others.

Our extensive experience in caring for IBD patients with COVID-19 stems from our practice in which we have a very large IBD patient population of Ashkenazi Orthodox and Hasidic Jews that comprises nearly 75% of our cohort. Our observations and those of others have been that these groups most likely have the world's largest incidence of multiplex IBD families (Dubinsky, personal communication, May 30, 2020), and outside of Israel, they are located in greatest prevalence by far in New York City. Many of these families have large numbers of children (more than 8 is not uncommon), and many live in crowded apartments or homes. Socially, they tend to be insular and very tight-knit communities, and there are several areas in New York City (Williamsburg, Borough Park, New Square, Monsey, and Kiryas Joel) and in New Jersey (Lakewood) where several thousand families can live within walking distance of each other. Families attend weekly Sabbath and holiday services in often crowded synagogues and share attendance at many large communal holiday gatherings, weddings, and funerals. Large clusters of cases arose at some of these events. The close contact source of infection in these communities is suggested by the finding that over 80%of these patients in our cohort can identify household members with SARS-CoV-2 (with anywhere between 1 to 8 family

Received for publications July 9, 2020; Editorial Decision July 9, 2020.

From the *The Icahn School of Medicine at Mount Sinai, New York City, NY, USA

Conflicts of Interest: AK has received research support from and been on the advisory boards and speaker's bureaus for Abbvie, Takeda, Janssen, and Pfizer; he has also received research support from Celgene and Igenix and is on the advisory board and speaker's bureau for Merk. MKH has received research support from and is on the speaker's bureaus for Janssen and Abbvie; she has received research support from Celgene, Takeda, and Ingenix. JG has received research support from and is on the speaker's bureaus for Janssen and Takeda; he has also received research support from Celgene and Ingenix.

PL has received research support from Janssen, Takeda, Pfizer, Celgene, and Ingenix.

members affected), whereas patients in our cohort from outside these communities have known household contacts of only approximately 30%. The stunningly abrupt, chronologic tipping point in these communities was clearly on March 10, 2020, on the Jewish Holiday of Purim. The holiday is marked by a great deal of celebratory dancing, communal meals, and near universal delivering and sharing of gifts and delivery of food between families. Within 1 week of this holiday, the onslaught of cases, severe illness, and death began in these communities.

Because we advised our patients to stay at home isolation if they had typical symptoms, the great majority of our patients who tested positive for PCR of SARS-CoV-2 either had another physician order the test or tey had obtained it on their own. We had only selectively ordered PCR testing in the very first weeks of the pandemic when the disease course and presentation was less well described. More recently, most patients who were tested for SARS-COv-2 antibodies were being tested if they were otherwise going to have labs drawn. In some of these communities, both the Mayo Clinic and the Mount Sinai Medical Center put out calls for volunteers, and over 2000 subjects presented to be tested for the SARS-CoV-2 antibody in the hope of being able to donate plasma for potential use for convalescent serum as treatment for patients infected with SARS-CoV-2. In this report, we share our experiences and suggestions in the management of patients with IBD, in addition to SARS-CoV-2 and COVID-19 patients in a clinical outpatient practice.

The Scene in NYC in March, April, and May 2020

On March 1, 2020, a woman recently returned from Iran, where the disease was already widespread and was diagnosed with the first case of SARS-CoV-2 in NYC. The following day, a 51-year-old attorney living in New Rochelle (a suburb 5 miles north of NYC) who traveled daily by train to his office in Manhattan was diagnosed without any known exposure. Within a single week that index case led to a cluster of over 120 in his home community of New Rochelle, which then became the first community in the United States to become an enforced "containment area"; the National Guard briefly patrolled the streets, not to quell civil unrest but to assist in food deliveries and to provide the personnel to disinfect public areas. The first death in NY was reported on March 5, and then began an unfathomable, exponential explosion of cases, hospitalizations, and death that shook and devastated NYC. In the 4 months since the first case, NYC has become the global epicenter of COVID-19, with over 222,000 reported cases leaving nearly 23,000 dead.³ To put this into context, this number represents greater than 7 times the number killed on September 11, 2001 in the World Trade Center attacks.

The unrelenting, massive torrent of patients overwhelmed NYC hospitals, intensive care units, and staff. Overall, 1 in 37 individuals tested in NYC were positive, *and 1 in 360 residents of NYC died.*² East New York, an urban area with an almost entirely black and Latino population, with a median annual

household income of \$27,000, had the highest death rate in the city: 1 in 23 residents were infected and 1 in 141 residents of that area died of COVID-19. Citywide, the death rate of blacks and Latinos was twice that of white residents. Major medical centers in NYC such as Mount Sinai and New York University would be managing over 1000 COVID-19 patients at once, and lobbies were converted into patient's rooms, and operating rooms and postop recovery areas into intensive care units. Massive refrigerated trucks serving as overflow morgues were parked outside some of NYC's municipal hospitals that serve the city's most impoverished patients. Samaritan's Purse, a charitable rescue-mission organization, arrived on a Saturday night, March 28, and by that Tuesday had set up 6 cavernous medical tents equipped to handle 300 overflow inpatients on the pastoral lawn of Central Park directly across the street from Mount Sinai (see Figs. 1 and 2). Inside Mount Sinai, "platoons" of medical teams were deployed in sequential waves of attendings, fellows, and residents. Early on, there were variable appalling shortages of personal protective equipment (PPE),



FIGURE 1. In foreground, Mount Sinai Annenberg Basic Science Building and Icahn School of Medicine (taller building) and The Guggenheim Pavilion of the Mount Sinai Hospital. On right, fully equipped and staffed Samaritan Purse hospital tents for 300 overflow patients on Central Park lawn. For the hospital, note white paneled wood windows with open carved-out "portholes" for negative ventilation to outdoor air (photograph courtesy of the author, April 7, 2020).



FIGURE 2. Nighttime view of Mount Sinai Hospital, Samaritan Purse hospital tents, and views of the iconic Central Park Reservoir and Central Park skyline (April 13, 2020, photograph courtesy of the author).

further heightening risk to the staff. In some of the most deprived municipal hospitals, staff with direct patient care were told to wear rain ponchos in lieu of proper gowns. A number of hospitals imposed gag orders on their staff from speaking to the press about ongoing PPE shortages.

Each of our gastrointestinal (GI) fellows served on the COVID-19 floors for multiple rotations at Mount Sinai and thus denying them of months of training. Early on, we each volunteered to be on call for inpatients with GI bleeding to relieve the fellows physically and emotionally, reduce additional COVID-19 exposure risk for them, and save on PPE in that only the attending would be present during a procedure. Frankly, we were relieved when our nights and weekends of being on call passed without any patients requiring emergency hospital procedures. In NYC, a number of physicians, nurses, and residents contracted the virus and were hospitalized, and a few among them died.

Outside the hospitals, the 5 boroughs of NYC, home to 8.2 million residents, were put on "lockdown" on March 22. The boisterous, rambunctious, often ornery, and cantankerous city overwhelmingly observed all designated social prohibitions. The city became eerily silent overnight, with all nonessential businesses shut down, with many likely never to reopen. Unemployment soared and 900,000 NYC residents became unemployed within a space of 2.5 months. At its worst, at midday one could drive down entire ghostly avenues and streets devoid

of any people outdoors. Nonetheless, the prevailing mood was of mutual camaraderie, support, and empathy. Many local restaurants delivered daily free meals to the hospital's entire medical staff. The sacrifices of the health care workers and first responders did not go unnoticed. They were loudly lauded and appreciated throughout the city on the (nearly empty) streets and in the media. At 7:00 pm nightly, many New Yorkers stepped out onto their stoops, their sidewalks, and their balconies and applauded all the first responders of NYC.

Office Practice Management of an IBD Practice in NYC

Though the physicians in our practice all hold academic faculty positions at the Icahn School of Medicine at Mount Sinai, our clinical practice is run independently of the Medical Center, and thus we are faced with all of the management, financial, and personnel issues of any "private practice." With the loss of income from a decline in office visits, greatly reduced procedural volume, and loss of income from a partial ownership in an ambulatory surgery center (ASC), we benefitted greatly from receipt of a Paycheck Protection Plan (PPP) loan, and all provisions were made to fulfill all stipulations to ensure loan forgiveness in the future. Frankly, absent this grant, the financial strain on the practice would have been prohibitive, given our commitment to the staff and the typically very high costs of maintaining a practice in Manhattan (monthly rents can approach \$100 per square foot). Nevertheless, the loan is designed to cover only 8 weeks of expenses, and we are already well beyond that period. Office infusions of biologics (infliximab, vedolizumab, and ustekinumab) became the main source of revenue for the practice during that time.

Upon declaration of the NYC shutdown, we immediately made a commitment to our entire staff that they would remain fully employed for the duration of the crisis, in recognition of their devotion to the practice for anywhere from 3 months to 28 years. No more than half of the staff were present in the office on any given day, while the remainder worked from home, and the staff area is situated in a fashion that all staff, wearing masks, are at least 6 feet apart. We made (variably successful) efforts to avoid having all staff present in the office on any given day in case there were an office-wide exposure to SARS-CoV-2.

As with all other gastroenterology practices, "telemedicine" has replaced the vast numbers of office IBD consultations and follow-up visits. We have termed these as Video Office Visits or Telephone Office Visits for our patients. We wanted to avoid the term "virtual," which could give the connotation that these visits were virtual rather than real, and we avoided the generic term of "telemedicine" because this term has been used to describe a variety of forms of remote care. The volume of consultation and follow-up visits was approximately 70% of our usual number, as would be expected in a practice caring for a large number of chronic patients with IBD. We have found that nearly all of our patients found these visits worthwhile and would opt for remote visits in the future for some or many of their routine follow-up visits. On the other hand, the welldescribed "Zoom fatigue" set in rapidly and largely negated the hoped for "leisure" of working from home several days a week.

As with most other GI practices, we performed a very small number (ie, about 5%) of our usual number of procedures in an ambulatory endoscopy setting. These were done for disease assessment in patients with severe disease for whom a change in therapy was being planned or for patients who required stricture dilation. Meticulous care and great efforts were taken to secure adequate PPE, and all cases were done fully gowned, with N95 masks (one per day), eye protection, and full face shields. Rooms were equipped with air filtration devices, and 30 minutes were spent between cases disinfecting the endoscopy rooms.

A Clinical Visit

The video visits, as in real life, consist of a dialogue with our patients, and we have largely avoided sending patients out for labs of any type. However, we have increasingly relied on commercial labs to send an overnight home stool collection kit for calprotectin that can then be picked up by one of the express mail services eliminating the patients' need to leave home. Imaging studies have likewise been largely deferred except for the patient with a bowel obstruction or concern for abscess. The patient with a perianal abscess may be a tough call to make. An on-screen demonstration of a perineum is often less than optimal, and we have some of these patients go straight to a colorectal surgeon for a video visit and examination under anesthesia if an intervention is thought to be necessary. We deferred all routine screening and surveillance colonoscopy, any planned follow-up procedures to assess for routine response to therapy, and the 6-month postoperative ileocolonoscopy to assess for Crohn's disease (CD) recurrence. Refreshingly, we have relearned what our beloved mentor, Dan Present, would say in his inimitable Brooklyn accent, "If you wanna know how a patient is doin' all you need to do is say, 'how you doin'?" Depending on old-fashioned clinical judgment has never seemed as reliable as it is now.

A significant portion of each visit at this time is spent describing what we know on that given day about COVID-19 and the interface of COVID-19 and IBD. We preface these remarks by informing patients that this information is accurate as of the day and hour of our discussion because frequently our knowledge has changed by that afternoon or evening.

We have communicated with our patients in a variety ways. Our electronic medical record allowed us to generate email blasts to our entire practice. The first of these, in late March, described the general symptoms of COVID-19 and the importance of adhering to all the risk mitigation programs at that time, which have since then been further expanded. We described the possible GI manifestations, chiefly nonbloody diarrhea, and asked patients to contact us with these or any other GI symptoms. We discussed that in general, our IBD patients should not discontinue their medications but should contact us for individual recommendations. Also, our email informed them that they should contact us to discuss whether any routine follow-up labs should be deferred, which we most always advised. A second email in late May reviewed the emerging nature of our knowledge of the disease course, and the role of both repeated PCR and antibody testing-topics which are now evolving on a weekly or even daily basis. A technique that we have found helpful is to place relevant educational information in an "away vacation" message that is generated with every routine patient email to us, which they would see along with our email reply. The chief source of information to which we directed the patients were the websites of the Crohn's & Colitis Foundation and the Center for Disease Control (CDC).

Medical Management of the IBD Patient With SARS-CoV-2, Confirmed or Suspected

A number of the major GI societies, the Crohn's & Colitis Foundation,³ British Society of Gastroenterology,⁴ European Crohn's and Colitis Organization,⁵ The American Gastroenterology Association,⁶ and the International Organization for the Study of Inflammatory Bowel Disease (IOIBD)⁷ have published guidelines regarding treating the IBD patient with SARS-CoV-2 and COVID-19. They are largely very similar, and they are concisely compared in a recent correspondence.⁸ The key features are that the patient without proven or suspected SARS-CoV-2 should continue on their current medications with aggressive attempts to reduce steroid usage because this is the only single agent that has been associated with increased poor outcomes with COVID-19, defined in the SECURE registry as a composite score of hospitalization, intubation, or death.¹

Patients are informed that the underlying diagnosis of IBD does not increase the risk of acquiring SARS-CoV-2 (although this, as with most published recommendations at this time, has not yet been borne out by rigorous data). In patients with proven or suspected SARS, it is recommended that all of the biologic drugs, thiopurines, and methotrexate be held and aggressive efforts made to wean steroids. However, accumulating data in the SECURE database suggest that patients on antitumor necrosis factor (TNF) drugs, vedolizumab, and ustekinumab do not have a higher incidence of a poor outcome, and in fact, patients on theses agents may have a numerically lower incidence of poor outcomes. On the other hand, the use of combination therapy with a thiopurine and an anti-TNF drug may slightly increase the likelihood of a poor outcome. In a multivariate analysis, steroids were associated with a significant increase in poor outcomes, as were older age and the presence of multiple comorbidities.9 What has been a consistently surprising finding in the registry is that the use of mesalamine drugs, even when controlled for disease activity, may be associated with a worse outcome. Thus far, this has not led us to discontinue these drugs, unless the patient is already in remission on an anti-TNF drug and the discontinuation of mesalamine has not been associated with a disease exacerbation.¹⁰

For patients receiving in-office infusions of biologics, we follow the precautions well outlined in the IOIBD guidance.⁸ Patients are contacted in advance of their infusion to ascertain that they have no symptoms suggestive of COVID-19. They are screened again at arrival to the office, including a temperature check. The patient must be wearing a mask before entering the office and must enter the office unaccompanied. Each patient is given their own wrapped, unopened hand sanitizer to keep and is brought directly into an infusion room. Unless there is a specific indication for an examination, we remain masked and conduct our office visit at least 6 feet away from the patient. All furniture and equipment are washed copiously with bleach between patients. We aim to use so much bleach that the following patient is struck by its odor and confident that we have spared no cleansing agent.

We participate in a number of pharmaceutical industry– sponsored, double-blinded, randomized controlled drug trials. Variable allowances were made by the sponsors to defer in-person visits, allow remote visits, and lengthen intervals between procedures. In no case was an elective study procedure mandated during the height of the pandemic between late March and early June. In any case, the patients and we, on their behalf, would have refused to do so.

Clinical Outcomes in This Cohort

In our cohort, with 65 IBD patients with a SARS-CoV-2confirmed infection, our experience has been of a slightly lower incidence of poor outcomes than in the reported SECURE database as a whole (4.6% vs 8% respectively), despite a similar median age of 39 (see Table 1). This may be due to having only 1 (2%) patient on more than 10 mg of daily prednisone compared with 8% of patients in the SECURE registry. The percentage of our patients on anti-TNF drugs is similar to the most recent report of the SECURE database (34% vs 29%, respectively).¹ We had 3 patients, with PCR-documented SARS-CoV-2 who were hospitalized for COVID-19-related complications: a 35-yearold man with ulcerative colitis (UC) on vedolizumab who developed bilateral pneumonias was intubated and recovered; a 61-year-old man with UC on sulfasalazine and budesonide who developed adult respiratory distress syndrome was intubated for 3 weeks, and recovered; and a 65-year-old man with UC and pneumonia was treated with high flow oxygen and recovered. No patients died.

Notably, 2 patients with active Crohn's ileitis, who initially refused hospital admission because of concerns of being in a hospital with a very high prevalence of COVID-19, developed acute ileal perforation, and both had surgery (one with a temporary diverting ileostomy) and had uncomplicated

TABLE 1. Patient Demographics and Medications

Median Age: 39 (range 17-71)

Crohn's Disease Severity of CD at Time of COVID-19 Diagnosis (n): n = 41
Remission: 46% (19)
Mild: 39% (16)
Moderate: 10% (4)
Severe: 5% (2)
Ulcerative Colitis Severity of CD at Time of COVID-19 Diagnosis
(n = 24)
Remission: 42% (10)
Mild: 50% (12)
Moderate: 0% (0)
Severe: 8% (2)
Medications (n):
Adalimumab: 11
Infliximab: 10
Golimumab: 1
Anti-TNF and thiopurine: 1
Vedolizumab: 5
Ustekinumab: 9
Mesalamine/Sulfasalazine: 5
Antibiotics (levofloxacin, amoxicillin/clavulinic acid): 2
Prednisone 20 mg/d and methotrexate: 1
Prednisone 10 mg/d: 1
Upadacitinib (open label in RCT for CD): 1
No medications: 5

postoperative courses and no COVID-19-related complications. Another patient on no IBD medications developed severe UC while infected with SARS-CoV-2, was admitted to the hospital, treated with infliximab and intravenous hydrocortisone, improved, was discharged, and sustained no COVID-related complications. Two pregnant patients with Crohn's disease in remission contracted SAR-CoV-2. The first developed symptoms from weeks 32 to 38 and had an uncomplicated vaginal delivery at week 40; she recovered uneventfully. Another patient developed mild COVID-19 symptoms from week 16 into her third trimester currently and had no adverse outcome during her ongoing pregnancy now at 27 weeks (Table 2).

Our concern has been in holding biologic therapy in the patient with active IBD and SARS-CoV-2 infection. In these patients with resolving symptoms of COVID-19 or with minor symptoms without fever or dyspnea, we generally continue to treat or restart early their anti-TNF drug, vedolizumab, or ustekinumab, as long as they are afebrile without antipyretics for at least 72 hours. The now well-recognized symptoms of loss of sense of smell or taste can persist for weeks after all other symptoms have resolved, and we therefore do not consider those patients as persistently infected if they are otherwise asymptomatic. As a rule, we did not attempt to alter combination

TABLE 2. Outcomes of Interest (Described in Text)

Hospitalizations for COVID-19 related disease: 3 Intubation for ventilation support: 2 Deaths: 0 Pregnancy: 2, uncomplicated 1. Full term uncomplicated delivery at week 40; symptomatic from COVID-19 for 6 days at week 36

2. Pregnancy ongoing week 24, symptomatic from COVID-19 at 16 weeks for 6 days

Hospitalization related to IBD: 3 (2 CD resections, 1 severe UC treated medically), all discharged home without developing COVID-19 related complications in hospital

therapy if we were not otherwise intending to do so. In those patients with prolonged interruptions in their biologics, we consider using a full reinduction regimen, as our greater concern has been loss of response and the subsequent possible need for prednisone (as occurred in a single patient); and our greatest fear, now abating, was that patients would need hospitalization during this crisis when Mount Sinai Hospital had over 1000 COVID-19 inpatients.

We have not typically relied on documenting viral clearance with testing for a negative PCR or positive SARS-CoV-2 antibody. The ability to document clearance of active viral infection has been severely limited by problems with availability of PCR testing (now easing) and the finding of some patients with persistently positive viral PCR, which in many patients may represent nonreplicating, noninfectious RNA debris.¹¹ The advent of more widely available SARS-CoV-2 antibody testing is likewise not without interpretive flaws. One can easily be misled by accepting results from unknown labs, and we have been very cautious in accepting results of antibody testing without knowledge of the lab used. Over 130 antibody tests have been brought to the market, many with absolutely no FDA oversight of accuracy, and as of May 22, 2020, the FDA had only issued Emergency Use Authorization for 15 of these assays; 13 of 15 had sensitivity and specificities of >90%, respectively.¹² Many other assays have been found to be entirely unreliable and have been withdrawn from the market by FDA edict. Even with reliable antibody assays with high sensitivity and specificity, there is insufficient data at present to know whether the presence of antibodies are in fact neutralizing, and at what titer-if and for how long-they may confer immunity.¹³ In the absence of either negative PCRs or positive antibodies, we have relied on clinical resolution of symptoms of COVID-19 for at least for 72 hours as a guide as to when to restart therapies that we may have held.

A recent IOIBD guidance statement highlights the importance of considering the relative severity of both the underlying IBD and the COVID-19 course in informing the decision regarding the timing of restarting biologics.¹⁴ We are now

participating in the development of a database that will follow patients after clearance of the SARS-CoV-2 virus to determine the courses and outcomes of the IBD and of any sequelae or recurrence of COVID-19 after any drug therapy has been suspended.

What We Have Learned and Personal Perspectives

Perhaps never in the history of medicine has the advancement of knowledge about a given disease proceeded with such disconcerting and often terrifying speed. We spend countless hours devouring the news and ceaseless new published data. We have found the around-the-clock New York Times online coronavirus coverage, offered free of charge,¹⁵ to be a superb resource-not just for ongoing news coverage and multiple updates throughout the day on demographics of new cases and fatalities but more importantly for its very deep reporting of any breaking scientific news in this era when reading a manuscript from a month ago feels like reading a journal article from the 1950s. The Times and the Washington Post to a lesser extent¹⁶ have many useful links to articles in press, in the journals, and sites we are the most familiar with (eg, New England Journal of Medicine, Lancet, Science, Nature, Johns Hopkins Coronavirus Resource, CDC, FDA, WHO etc., all also offering COVID-19 information free of charge), in addition to online symposia and journals with very relevant, up-to-the-minute breaking news in clinical trials, microbiology, vaccine development, epidemiology, public health, and yes, even aerosol particle physics. MedRxIv is a source of pre-peer reviewed manuscripts jointly established by Cold Spring Harbor Laboratory, BMJ, Yale. Many important subsequently published papers have appeared there first, but many manuscripts posted there are never published or subjected to peer review and so caveat emptor.17

With the lockdown of NYC in March, the severely limited ability for all to travel, our greatly reduced in-office staff, and the near closure of our outpatient endoscopy center, we initially anticipated that our workdays would be shorter. We were mistaken. Our patients continued to call, many with heightened anxiety regarding coronavirus and concerns regarding potential interruption in their familiar medical routines of follow-up care, monitoring, and continued medication treatment. The patients with ongoing active disease were terrified at the prospect of an emergency room visit or hospitalization. Patients were particularly grateful for the unsolicited emails we sent and educational materials we shared with them via the Crohn's & Colitis Foundation website, which is always accessible and constantly updated.

We are certain that video office visits will become a staple of ongoing care for routine follow-up visits and for some patients with mild-moderate flares. Most patients came to appreciate the avoidance of time and money spent on travel. How and when the payers rescind their reasonable and enlightened approach to appropriately compensate us for these visits remains to be seen.

On a personal level, the severely reduced income, the confinement of our kids and families at home for nearly 3 months, and the constant heightened vigilance we had to maintain for our staff and ourselves to prevent infection while at work in NYC amounted to a degree of stress to which we thought we would be immune. We look back to the outset of all of this, when some of us naively hoped we could contract the infection, quickly recover and just be done with it. Watching some colleagues fall quite ill and hearing of deaths of others disabused us of this notion.

Here in NYC, we are hopefully, and perhaps wistfully thinking, that we are permanently emerging from the era of 3 months that have felt like so many long and very dark years. It has been a time of unimaginable and unmitigated devastation to our city, with the poorest blacks and latino individuals in our city, as always, being vastly disproportionately affected and dying. We have been humbled by our overwhelming limitations in overcoming what we had anticipated would be just another viral epidemic passing us by and affecting others less fortunate than us. We hope that while we await the arrival of the "new abnormal" that the race for effective therapies and the dreamed-of vaccines will arrive soon enough, that we can learn enough, and be wise enough, to somehow do better for our patients and for ourselves for now, and for the next tie around.

ACKNOWLEDGMENTS

Authors would like to acknowledge the commitment and bravery of all of our Mount Sinai GI fellows who took 3 months away from their training to rotate on all of the various COVID-19 ward and intensive care units. They want to thank all of the Mount Sinai hospital staff that have gone largely unrecognized: the housekeeping porters washing every bed, the transporters who take the patients to and from the ICUs and too frequently to the morgues, and the respiratory therapists who are perhaps the ones who put themselves at the greatest risk of all. Our patients, their families, and we all owe them a huge debt of gratitude for their courageous and tireless service.

REFERENCES

- Brenner EJ, Ungaro RC, Colombel JF, et al. SECURE-IBD Database Public Data Update. Accessed June 2, 2020. COVID Ibd.org.
- New York Times Corona Virus Map and Cases Count. Accessed July 6, 2020. https://www.nytimes.com/interactive/2020/nyregion/new-york-city-coronaviruscases.html#zipcode.
- Crohn's and Colitis Foundation. COVID-19 (Coronavirus): What IBD Patients Should Know. Accessed July 6, 2020. https://www.crohnscolitisfoundation.org/ coronavirus/what-ibd-patients-should-know.
- British Society of Gastroenterology (BSG) advice for management of inflammatory bowel diseases during the COVID-19 pandemic. Accessed July 6, 2020. https:// www.bsg.org.uk/wp-content/uploads/2020/03/BSG-plan-for-IBD-patientsduring-COVID19-pandemic-v1.5.pdf.
- COVID ECCO Task Force. 2nd Interview. Accessed June 3, 2020. https://academic.oup.com/ecco-jcc/advance-article/doi/10.1093/ecco-jcc/jjaa160/5877458.
- Rubin DT, Feuerstein J, Wang A, et al. AGA clinical practice update on management of inflammatory bowel disease during the COVID-19 pandemic: expert commentary. *Gastroenterology* 2020 Apr 10:S0016-5085(20)30482-0. doi: 10.1053/j.gastro.2020.04.012. In press.
- IOIBD COVID-19 Webinars and Guidelines. Accessed June 4, 2020. https:// ioibd.org/covid-19-and-ibd-webinars-and-guidelines/.
- Hanzel J, Ma C, Marshal J, et al. Management of inflammatory bowel disease during COVID-19. Summary of recommendations from gastrointestinal societies. *Clin Gastro Hepatol* 2020. In press.
- Brenner EJ, Ungaro RC, Gearry B, et al. Corticosteroids, but not TNF antagonists, are associated with adverse COVID-19 outcomes in patients with inflammatory bowel diseases: results from an international registry. *Gastroenterology*. 2020 May 18 doi: 10.1053/j.gastro.2020.05.032. In press.
- Ungaro RC, Limketkai BN, Jensen CB, et al. stopping mesalamine therapy in patients with crohn's disease starting biologic therapy does not increase risk of adverse outcomes. *Clin Gastroenterol Hepatol.* 2020;18:1152–1160.e1.
- Kirkcaldy R, King BA, Brooks J. COVID-19 and post infectious immunity: limited evidence, many questions. JAMA doi:10.1001/JAMA 2020.7869.
- FDA EUA Authority for Serology Test Performance. Accessed June 2, 2020. https://www.fda.gov/medical-devices/emergency-situations-medical-devices/ eua-authorized-serology-test-performance.
- Krammer F, Simon V. Serology Assay to Manage COVID. Science 2020, epub ahead of print 10.11126/. abc 1227. doi:10.1126/science.abc1227.
- 14. Siegel CA, Christensen B, Kornbluth A, et al, for the International Organization for the Study of Inflammatory Bowel Diseases (IOIBD). Guidance for when to restart inflammatory bowel disease therapy in patients who held immunosuppressant medications during COVID-19. *Journal Crohn's Colitis* 2020. In press.
- The New York Times Corona Virus Coverage. Accessed July 6, 2020. https:// www.nytimes.com/news-event/coronavirus.
- The Washington Post The Corona virus coverage. Accessed July 6, 2020. https:// www.washingtonpost.com/coronavirus/.
- COVID-19 SARS-CoV-2 preprints from medRxiv and bioRxiv. Accessed July 6, 2020. https://connect.medrxiv.org/relate/content/18.