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NEW!! DEADLINE:
JUNE 15, 2020 11:59pm Eastern

ACG and the Crohn's & Colitis Foundation IBD Circle
May 12th, 2020 Webinar
IBD in the COVID-19 Era: Update for the Busy Clinician

• Review knowledge on risk of COVID-19 in IBD patients and how COVID-19 affects medical management of immunomodulators and biologics in IBD
• Discuss data gathered from a large research registry: SECURE-IBD
• Review the real-life clinical experience with COVID-19 from a highly impacted area (NYC)
Foundation Peer-Reviewed Journals

- *Inflammatory Bowel Diseases* publishes high-quality, original papers and is a top-rated GI journal.
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*Crohn's & Colitis 360* - an online-only, open access journal - publishes content that engages, informs, and catalyzes dialogue on state-of-the-art comprehensive care for patients with IBD. Readers can access full articles for all content.

Foundation professional members receive discounted author processing fees. Learn more at: [www.crohnscolitis360.org](http://www.crohnscolitis360.org)

Publications Include Current Articles on the Novel Coronavirus

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ASK US ABOUT EDUCATION AND SUPPORT MATERIALS FOR YOUR PATIENTS

- Print on Demand Resources
- Educational Brochures
- New Patient Packets
- Support Groups
- COVID-19 Patient Resources
Member-Only Online Community

A member-only online resource, the IBD Circle is a trusted source for professional advice, collaboration, support, and practice resources to help you deliver quality patient care. Join as a professional member to access.

Community Sponsored By: CCCC

Agenda

• 8:00-8:05 pm  Welcome and Overview of IBD-COVID resources. Dr Samir A. Shah
• 8:05-8:25 pm  Management of the IBD patient in the COVID-19 era. Dr. David Rubin
• 8:25-8:40 pm  What are we learning from the SECURE-IBD registry? Drs. Ryan Ungaro and Erica Brenner
• 8:40-8:50 pm  What have we learned from the NYC experience? Dr. David Hudesman
• 8:50-9:30 pm  Panel discussion with faculty: Drs Sunanda Kane, David Rubin, Ryan Ungaro, Erica Brenner, and David Hudesman

Moderators: Dr. Samir A. Shah and Jean-Paul Achkar
Disclosures:

Moderators:
Samir A. Shah, MD, FACG
Dr. Shah has indicated no relevant financial disclosures.

Jean-Paul Achkar, MD, FACG
Dr. Achkar has indicated no relevant financial disclosures.

Faculty:
David T. Rubin, MD, FACG
Advisory Committee/Board Member: CCFA, Janssen
Consultant: AbbVie Pharmaceuticals, Algenonics, Allergan, Biomeva, Boehringer Ingelheim, Bristol-Myers Squib, Celgene, Check-cap, Dizal Pharmaceuticals, Genin Pharma/Atlantic, Genzyme, Gilead Sciences, Genus Sciences S.A. (formerly Glenmark Pharmaceuticals), GSK, Janssen, Lilly, Narrow River Mgmt., Pfizer, Prometheus, Shire, Takeda, Teclab, Inc.
Employer: Connexions Health Inc. (non-profit medical education company), GoDuRn LLC (non-profit medical education company)
Grant Support: AbbVie Pharmaceuticals, Genzyme, Janssen, Prometheus Laboratories, Shire, Takeda
Co-Founder: Connexions Health Inc. (non-profit medical education company), GoDuRn LLC (non-profit medical education company)
Royalties: Slack Publications

Erica Brenner, MD
Dr. Brenner has indicated no relevant financial disclosures.

Ryan C. Ungaro, MD
Grant Support: NIH K23 Career Development Award (K23KD11995-01A1). Advisory board member as consultant for Eli Lilly, Janssen, Pfizer, and Takeda; research support from AbbVie, Boehringer Ingelheim, and Pfizer.

David P. Hudesman, MD
Research support - Pfizer
Consulting - AbbVie, Janssen, Lilly, Prometheus, Shire, Takeda

Sunanda V. Kane, MD, MSPH, FACG
Consultant: Gilead, Samsung Biologics

Friendly Reminders

• Your audio will be muted.

• We will be taking questions during the webinar via the “question” functionality of our webinar tool – which is located in the right-side panel of Go-to-Webinar. If you would like to ask a question via the “question” feature, type your question directly in to the space provided.

• Please contact technical support (855) 352-9002 during this event if you have any questions or need assistance with the webinar tool.

• This call is being recorded and will be available on the IBD Circle. All IBD Circle members will receive a link to access the recording in an upcoming IBD Circle digest.
Resources

- IBD Circle: [https://ibd-circle.within3.com/public/sign_in](https://ibd-circle.within3.com/public/sign_in)
  - Posts of previous questions and answers
  - Can post your questions for the faculty
- ACG website: [gi.org](http://gi.org)
  - [https://gi.org/media/covid-19-and-gi/](https://gi.org/media/covid-19-and-gi/)
- Crohn’s & Colitis Foundation
  - [https://www.crohnscolitisfoundation.org/coronavirus/professional-resources](https://www.crohnscolitisfoundation.org/coronavirus/professional-resources)
  - [https://www.crohnscolitisfoundation.org/coronavirus/what-ibd-patients-should-know](https://www.crohnscolitisfoundation.org/coronavirus/what-ibd-patients-should-know)

Resources

- [https://covidibd.org](https://covidibd.org)
  - Open access data
  - Can report your patients easily
- International Organization of IBD: [https://www.ioibd.org](https://www.ioibd.org)
  - [https://www.gastrojournal.org/article/S0016-5085(20)30465-0/fulltext](https://www.gastrojournal.org/article/S0016-5085(20)30465-0/fulltext)
  - IOIBD Recommendations (dd 17 April 2020) Infusion Center guidance (PDF)
  - IOIBD Recommendations (dd 19 April 2020) endoscopy (PDF)
- PDFs to be sent to all registrants
Accreditation, CME & MOC Information

The American College of Gastroenterology is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The American College of Gastroenterology designates this live activity for a maximum of 1.5 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Successful completion of this CME activity, which includes participation in the evaluation component, enables the participant to earn up to 1.5 MOC points in the American Board of Internal Medicine’s (ABIM) Maintenance of Certification (MOC) program. Participants will earn MOC points equivalent to the amount of CME credits claimed for the activity. It is the CME activity provider’s responsibility to submit participant completion information to ACCME for the purpose of granting ABIM MOC credit.

How to Receive CME and MOC Points

ACG will send a link to a CME & MOC evaluation to all attendees on the live webinar.

ABIM Board Certified physicians need to complete their MOC activities by December 31, 2020 in order for the MOC points to count toward any MOC requirements that are due by the end of the year. No MOC credit may be awarded after March 1, 2021 for this activity.

ACG will submit MOC points on the first of each month. Please allow 3-5 business days for your MOC credit to appear on your ABIM account.

If you plan to claim MOC Points for this activity, you will be asked to: Please list specific changes you will make in your practice as a result of the information you received from this activity. Include specific strategies or changes that you plan to implement. THESE ANSWERS WILL BE REVIEWED.
Management of the IBD Patient in the COVID-19 Era

David T. Rubin, MD, FACP
Joseph B. Kirsner Professor of Medicine
Chief, Section of Gastroenterology, Hepatology and Nutrition
University of Chicago

@IBDMD
RubinLab.uchicago.edu
Disclosures

Consultant and/or Grant Support

• Abbvie
• Abgenomics
• Allergan, Inc.
• Boehringer Ingelheim, Ltd.
• Bristol-Myers Squibb
• Celgene Corp/Syneos
• Check-cap
• Dizal Pharmaceuticals
• GalenPharma/Atlantica
• Genentech/Roche

• Gilead Sciences
• Ichnos Sciences S.A.
  (formerly Glenmark Pharmaceuticals)
• GSK (GlaxoSmithKline Services)
• Janssen Pharmaceuticals
• Lilly
• Mahana Therapeutics
• Narrow River Mgmt

• Pfizer
• Prometheus Laboratories
• Reistone
• Seres Therapeutics
• Shire
• Takeda
• Target PharmaSolutions, Inc.
• Techlab, Inc

Coronavirus

• Enveloped, single-stranded RNA viruses
• Endemic coronaviruses are frequent causes of respiratory infections globally
• New human coronaviruses include severe acute respiratory syndrome (SARS, 2002) and Middle East Respiratory Syndrome (MERS, 2012)
• Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the most recently identified human coronavirus
Incubation Period

- **Incubation period**: 1-14 days with an average of 5 days
- **Infectiousness**: around 12 hours prior to symptoms onset to 5-6 days after
- Symptomatic individuals are 50% more infectious than asymptomatic ones
- Two-thirds of infected individuals are symptomatic (many mild)


Long incubation period without any obvious symptoms

COVID-19 Global Cases by Johns Hopkins CSSE.
Timeline of Symptoms

Outbreaks in shared spaces

Diners in a restaurant, Guangzhou: One or two index patients infect individuals at adjacent tables, determined by airflow, over 53-73 min.

Workers in a call center, South Korea: 43% attack rate in 216-person call center; 16% SAR at home; limited by aggressive contact tracing & quarantine

Lu et al., EID, 2020

Park et al., EID, 2020
### Possible Disease Course

![Diagram showing possible disease course with stages: Early Infection, Pulmonary Phase, Hyperinflammation Phase.]


---

### When to Suspect COVID-19

- Cough
- Shortness of breath or difficulty breathing
  
  *Or at least two of these symptoms:*
  - Fever
  - Chills
  - Repeated shaking with chills
  - Muscle pain
  - Headache
  - Sore throat
  - New loss of taste or smell

- Known exposure to infected person
- Abnormal chest imaging
- Lymphopenia (low wbc)
- Elevated CRP (blood test)

---

**What about GI symptoms?**

Patients with GI symptoms (diarrhea, nausea/vomiting) at time of testing were more likely to test positive for COVID-19 than to test negative.

Patients without GI symptoms were equally likely to test positive or negative.


Table 1: Rate of positive or negative COVID-19 testing based on presence or absence of gastrointestinal symptoms.

<table>
<thead>
<tr>
<th>Any gastrointestinal symptoms</th>
<th>COVID-19 Positive (n=278)</th>
<th>COVID-19 Negative (n=238)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present (n=160)</td>
<td>97 (61)</td>
<td>63 (39)</td>
<td>0.04</td>
</tr>
<tr>
<td>Absent (n=420)</td>
<td>211 (51)</td>
<td>175 (49)</td>
<td></td>
</tr>
<tr>
<td>Diarrhea*</td>
<td></td>
<td></td>
<td>0.14</td>
</tr>
<tr>
<td>Present (n=92)</td>
<td>56 (61)</td>
<td>36 (39)</td>
<td></td>
</tr>
<tr>
<td>Absent (n=224)</td>
<td>222 (52)</td>
<td>202 (48)</td>
<td></td>
</tr>
<tr>
<td>Nausea/vomiting*</td>
<td></td>
<td></td>
<td>0.36</td>
</tr>
<tr>
<td>Present (n=109)</td>
<td>63 (58)</td>
<td>46 (42)</td>
<td></td>
</tr>
<tr>
<td>Absent (n=407)</td>
<td>215 (53)</td>
<td>192 (47)</td>
<td></td>
</tr>
</tbody>
</table>

Flow percentages.

* Frequency of symptom, with or without the other gastrointestinal symptom. 51 patients had diarrhea only and 68 patients had nausea/vomiting only.
What We Know So Far About GI Symptoms and Viral Detection in Stool

<table>
<thead>
<tr>
<th>Author</th>
<th>Journal</th>
<th>Year Published</th>
<th>N of Patients</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jin X, et al</td>
<td>Gut</td>
<td>2020</td>
<td>651</td>
<td>- 11.45% with one GI symptom (nausea, vomiting, diarrhea)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Identified novel methylation site in S protein that changed from SARS to Wuhan and some differences to the strain in Zhenjiang Province → may account for change in frequency of GI symptoms</td>
</tr>
<tr>
<td>Xiao F, et al</td>
<td>Gastroenterology</td>
<td>2020</td>
<td>73</td>
<td>- 39 (53%) had positive stool RNA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Stool remained positive in 17 patients (23.29%) after respiratory samples were negative</td>
</tr>
<tr>
<td>Wu Y, et al</td>
<td>Lancet Gastroenterol  Hepatol</td>
<td>2020</td>
<td>74</td>
<td>- 41 (55%) had positive stool samples</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Fecal samples were positive for a mean of 27.9 days (vs. respiratory samples – mean 16.7 days)</td>
</tr>
<tr>
<td>Wolfel R, et al</td>
<td>Nature</td>
<td>2020</td>
<td>9</td>
<td>- Viral RNA detected in sputum and stool samples</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Live virus was not isolated from stool samples</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>- Virus in stool is not thought to be infectious</td>
</tr>
</tbody>
</table>

Risk Factors for Poor Outcomes

Table 6. Bivariate Cox Regression of Factors Associated With ARDS Development or Progression From ARDS to Death

<table>
<thead>
<tr>
<th>Patient characteristics and findings</th>
<th>ARDS HR (95% CI)</th>
<th>P value</th>
<th>Death HR (95% CI)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical characteristics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (&gt;65 vs ≤65), y</td>
<td>3.20 (2.08-5.01)</td>
<td>&lt;.001</td>
<td>6.17 (3.26-11.67)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Gender (male vs female)</td>
<td>1.47 (0.92-2.36)</td>
<td>.11</td>
<td>0.16 (0.30-0.95)</td>
<td>.07</td>
</tr>
<tr>
<td>Highest patient temperature (&gt;39 °C vs ≤39 °C)</td>
<td>1.77 (1.11-2.84)</td>
<td>.02</td>
<td>0.43 (0.21-0.92)</td>
<td>.01</td>
</tr>
<tr>
<td>Comorbidities</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypertension (yes vs no)</td>
<td>1.82 (1.13-2.93)</td>
<td>.01</td>
<td>1.70 (0.52-5.24)</td>
<td>.09</td>
</tr>
<tr>
<td>Diabetes (yes vs no)</td>
<td>2.34 (1.23-4.49)</td>
<td>&lt;.002</td>
<td>1.18 (0.56-2.43)</td>
<td>.19</td>
</tr>
</tbody>
</table>

*p<0.01

Profile of Antibodies in Patients with Pneumonia Due to SARS-CoV

Are IBD Patients at Unique Risk?

- Management of IBD often involves immunosuppressive or immune modifying therapies
- Known increased risk of some viral infections with IBD therapies (influenza, VZV, CMV...)
- Exposures:
  - Patients with IBD may be receiving infusions in infusion centers
  - Patients with IBD require routine and diagnostic endoscopic procedures
- Pathophysiology (in theory): bowel expresses ACE2 receptor
Questions of Concern Related to IBD and COVID-19

• What is the risk of infection with SARS-CoV-2?
• Does bowel inflammation increase risk of infection with SARS-CoV-2?
• What is the risk of COVID-19?
• Do patients with IBD have different outcomes with COVID-19?
• Do IBD therapies increase risk of infection or COVID-19?
• Are any IBD therapies protective against COVID-19?
• Should patients with IBD modify their therapies during the pandemic?


Viral Infections and IBD Therapies

• Increased risk of varicella zoster infection with tofacitinib\(^1\)
• Reactivation of hepatitis B with anti-TNF therapy\(^2\)
• Cases of viral warts associated with thiopurines\(^3\)
• IBD patients have an increased influenza risk compared with those without IBD\(^4\)
• Systemic corticosteroids were found to be independently associated with influenza (Table)\(^4\)

Herpes Zoster Rates with Anti-TNF and Tofacitinib


IOIBD.org
Task Forces

- Clinical trials task force
- Endoscopy task force
- Hospitalization task force
- Research task force
  - Epidemiology
  - Etiology
  - Prognosis and natural history
  - Prevention
  - Outcomes and quality of life
  - Clinical Practice
- Telemedicine task force

Publications

- Management of IBD Patients during COVID-19 Pandemic
- Recommendations for Surgery in IBD Patients during COVID-19 Pandemic


Management of Patients with Crohn’s Disease and Ulcerative Colitis During the COVID-19 Pandemic: Results of an International Meeting

David T. Rubin, MD, Maria T. Abreu, Victoria Rai, Corey A. Siegel on behalf of the International Organization for the Study of Inflammatory Bowel Disease

Demographics of Participants by Specialty (N=66)

* Authors thank all the participants of the RAND panel.
* IOIBD Members:
* Additional invited participants:

The authors wish to acknowledge Cindy Troebst, Anamachi I. Enówu and Seth R. Shaffer for their assistance in data management and Raymond Kulp and Marloha Karinas for invaluable help in logistical coordination.

IOIBD RAND Panel to Develop Guidance for IBD Patients During COVID-19

Statements developed by steering committee → Survey sent to participants → Webinar → Statements modified → Participants re-surveyed

IOIBD Recommendations for Patients with IBD During the SARS-CoV-2 Pandemic: SURVEY #2 (POST-CALL)

Risk of infection with SARS-CoV-2 is the same whether you have IBD or do not have IBD:
1 2 3 4 5 6 7 8
Completely inappropriate 0 0 0 0 0 0 0 0 0 Completely appropriate

Independent of treatment, patients with Crohn’s disease have a greater risk of infection with SARS-CoV-2 than the general population:
1 2 3 4 5 6 7 8
Completely inappropriate 0 0 0 0 0 0 0 0 0 Completely appropriate
Survey Results

<table>
<thead>
<tr>
<th></th>
<th>Pre-Survey (N=64)</th>
<th>Post-Survey (N=66)</th>
<th>Agreement (based on post-survey)</th>
<th>Disagreement (based on post-survey)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inappropriate Statement</td>
<td>16 69 Statements</td>
<td>26 76 Statements</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>Uncertain Statement</td>
<td>24</td>
<td>19</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Appropriate Statement</td>
<td>29</td>
<td>31</td>
<td>31</td>
<td>0</td>
</tr>
<tr>
<td>Total Statements:</td>
<td>64</td>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Disagreement Index (DI) = $\frac{66 \%ile - 33 \%ile}{2.35 + 1.5 \left( \frac{66 \%ile + 33 \%ile}{2} \right)}$

These statements are based on expert opinion in the absence of definitive data or in some cases any data. They are meant to help inform clinical decision making but should not replace individualized management decisions.
Are IBD Patients at a Higher Risk?
Results of an International Consensus Meeting

- The risk of infection with SARS-CoV-2 is the same whether a patient has IBD or does not have IBD.
- Independent of treatment, patients with CD or UC do not have a greater risk of infection with SARS-CoV-2 than the general population.
- It is uncertain if active inflammation from IBD increases the risk of getting SARS-CoV-2.
- Patients with an ostomy are not at increased risk for COVID-19.
- Patients with a J pouch are not at increased risk for COVID-19.

What about Special Situations?
Results of an International Consensus Meeting

- Elective surgeries and endoscopies should be postponed at this time.
- It is uncertain if healthcare workers with IBD on immune modifying medications working in an environment with known or suspected COVID-19 patients should continue working in that same environment.
- Patients with IBD on immune modifying medications should discontinue any non-essential travel.
- It is safe to continue infusions in an infusion center, assuming the infusion center has a screening protocol in place.
What About IBD Therapy?

<table>
<thead>
<tr>
<th></th>
<th>5-ASA</th>
<th>BUD</th>
<th>PRED (≥20mg/d)</th>
<th>AZA/6MP</th>
<th>MTX</th>
<th>Anti-TNF</th>
<th>VEDO</th>
<th>UST</th>
<th>TOFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>To prevent SARS-CoV-2 infection.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If infected with SARS-CoV-2 but don't have COVID-19.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Confirmed COVID-19.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Continue Therapy
- Unsure
- Hold/Delay/Stop Therapy

Treatment of IBD After SARS-CoV-2 Infection

Results of an International Consensus Meeting

- In an IBD patient who tests positive for SARS-CoV-2 and whose IBD meds have been stopped because of this, IBD meds can be restarted:
  - after 14 days (provided they have not developed COVID-19).
  - after COVID-19 symptoms resolve.
  - after 2 nasopharyngeal PCR tests are negative.
AGA Clinical Practice Update on Management of IBD During the COVID-19 Pandemic: Expert Commentary

Management of IBD Patients During COVID-19

When Do You Restart Therapy?

• Unclear

• Options:
  – When patient is asymptomatic
  – When patient is asymptomatic for more than 3 days (?)
  – When patient has PCR test for SARS-CoV-2 negative (once or twice?) (maybe not¹)
  – When patient is in convalescent phase of illness (IgG positive, IgM negative)


Limitations to Our Current Approach

• Limited data.
• Long half life of many drugs makes holding them of questionable benefit.
• Unclear denominator of infected IBD patients.
• No distinction between infectious and inflammatory phases of COVID-19.
### Outcomes of COVID-19 in 79 patients with IBD in Italy

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>COVID-19 related pneumonia</th>
<th>P-value</th>
<th>COVID-19 related death</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &gt; 65</td>
<td>5.87 [1.15, 29.66]</td>
<td>0.03</td>
<td>19.6 [2.95, 130.6]</td>
<td>0.002</td>
</tr>
<tr>
<td>CCI* score &gt; 1</td>
<td>2.91 [1.06, 9.21]</td>
<td>0.04</td>
<td>16.66 [1.8, 153.9]</td>
<td>0.01</td>
</tr>
<tr>
<td>UC diagnosis</td>
<td>2.72 [1.06, 6.99]</td>
<td>0.03</td>
<td>2.95 [0.31, 27.73]</td>
<td>0.34</td>
</tr>
<tr>
<td>Active IBD</td>
<td>10.25 [2.11, 49.73]</td>
<td>0.003</td>
<td>8.45 [1.26, 56.56]</td>
<td>0.02</td>
</tr>
<tr>
<td>Corticosteroids</td>
<td>4.94 [0.95, 25.55]</td>
<td>0.05</td>
<td>6.28 [0.89, 44.24]</td>
<td>0.064</td>
</tr>
<tr>
<td>Thiopurines</td>
<td>1.21 [0.22, 6.40]</td>
<td>0.82</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Anti-TNF</td>
<td>1.18 [0.47, 2.97]</td>
<td>0.71</td>
<td>0.4 [0.04, 3.78]</td>
<td>0.42</td>
</tr>
<tr>
<td>Vedolizumab</td>
<td>0.53 [0.16, 1.73]</td>
<td>0.29</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* Charlson Comorbidity Index


---

### COVID-19 in Immune-Mediated Diseases

**Case Series from New York (NYU)**

- **N = 86**
- RA, IBD, psoriatic arthritis, ankylosing spondylitis, psoriasis...
- **59 PCR confirmed COVID-19**
- HTN, DM, COPD were associated with higher hospitalization

<table>
<thead>
<tr>
<th>Medication</th>
<th>Total (n=59)</th>
<th>Ambulatory (n=45)</th>
<th>Hospitalized (n=14)</th>
<th>Adjusted OR [95%CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydroxychloroquine</td>
<td>7 (11.9)</td>
<td>4 (8.9)</td>
<td>3 (21.4)</td>
<td>1.43 [1.04, 1.97]</td>
</tr>
<tr>
<td>MTX</td>
<td>14 (23.7)</td>
<td>8 (17.8)</td>
<td>6 (42.9)</td>
<td>1.37 [1.06, 1.78]</td>
</tr>
<tr>
<td>Steroids</td>
<td>7 (11.9)</td>
<td>3 (6.7)</td>
<td>4 (28.6)</td>
<td>1.40 [1.01, 1.93]</td>
</tr>
</tbody>
</table>

## Case Reports of IBD and COVID-19

<table>
<thead>
<tr>
<th>Author</th>
<th>Journal, year</th>
<th>Patient Characteristics</th>
<th>Presentation</th>
<th>Management/Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosen MH, Axelrad J, Hudesman D, Rubin DT, Chang S</td>
<td>Inflamm Bowel Dis, 2020 [in press]</td>
<td>- 26 year old woman with a history of UC pancolitis  - Received 3 doses of infliximab in the past and went into clinical remission  - self-discontinued medications 6 years ago</td>
<td>- Abdominal pain, diarrhea, hematochezia, and urgency for 6 weeks -&gt; hospitalized for UC flare -&gt; treated with methylprednisolone and discharged  - 2 days later, worsening bloody diarrhea and abdominal pain, no respiratory symptoms</td>
<td>- B-hcg positive, confirmed intrauterine pregnancy  - Started positive for SARS-CoV-2  - Started on iv methylprednisolone, was unable to transition to oral, so was given iv cyclosporine  - Developed pleuritic chest pain, ruled out PE and was started on hydroxychloroquine + azithromycin  - Experienced a spontaneous abortion on day 9</td>
</tr>
<tr>
<td>Wolf DC, Wolf CH, Rubin DT</td>
<td>Am J Gastroenterol, 2020 [submitted]</td>
<td>- 85 year old man with CD on no therapy for his disease  - Takes loperamide PRN</td>
<td>- 4 liquid stools per day, anorexia, fatigue, 13-pound weight loss in 10 days  - Persistent non-productive cough despite azithromycin</td>
<td>- Telehealth management, started on bismuth subsalicylate (BSS) 525 mg PO 2-4x a day while waiting for labs  - Tested positive for SARS-COV-2  - Diarrhea improved within 6 hours, 80% improvement of all other symptoms by day 6, near resolution by day 10  - Patient remained only on BSS throughout course of illness</td>
</tr>
<tr>
<td>Jacobs J, Clark-Snustad K, Lee S</td>
<td>Inflamm Bowel Dis, 2020 [Epub ahead of print]</td>
<td>- 33 year old woman with a 13 year history of UC  - Started tofacitinib 10 mg BID in June 2019  - Achieved clinical remission after 5 months of therapy</td>
<td>- Fever, chills, cough, myalgia, sore throat, fatigue, and night sweats  - No GI symptoms</td>
<td>- Tested positive for SARS-COV-2  - Tofacitinib 10 mg BID was continued  - Respiratory sx resolved after 5 days  - Remained well with no symptoms after 2 weeks</td>
</tr>
</tbody>
</table>

## Vitamin D Supplementation Can Reduce the Clinical Effects of COVID-19

- Vitamin D deficiency can be implicated in ARDS, heart failure and sepsis
- These can all be manifestations of critically ill COVID-19 patients
- To reduce the risk of infection, it is recommended that people at risk of influenza and/or COVID-19 consider taking vitamin D$_3$.
- Randomized controlled trials and large population studies should be conducted to evaluate these recommendations.

Reliable References to Stay Updated

- who.int/health-topics/coronavirus
- cdc.gov/coronavirus/2019-ncov
- coronavirusupdates.uchicago.edu
- crohnscolitisfoundation.org/coronavirus
- covidibd.org
- ioibd.org
- clinicaltrials.gov
- rubinlab.uchicago.edu/blog
- twitter.com/IBDMD