83rd in a series of bi-weekly calls, initiated by CDC as a forum for information sharing among frontline clinicians caring for patients with COVID-19. This call is not intended for the media.

The views and opinions expressed here are those of the presenters and do not necessarily reflect the official policy or position of the CDC or IDSA. Involvement of CDC and IDSA should not be viewed as endorsement of any entity or individual involved.

This webinar is being recorded and can be found online at www.idsociety.org/cliniciancalls.
Today’s Agenda

1. Welcome/Introductions
2. Case Presentations & Discussion
3. Q&A
Outpatient COVID-19 Treatment Strategies for High-Risk Populations

Michael G. Ison, MD, MS, FIDSA, FAST
Professor, Divisions of Infectious Diseases and Organ Transplantation
Northwestern University Feinberg School of Medicine

Stephanie Berg, DO
Assistant Professor, Medicine Hematology/Oncology; Cancer Biology
Stritch School of Medicine, Loyola University

Joshua A. Hill, MD
Assistant Professor
Vaccine and Infectious Disease Division
Fred Hutchinson Cancer Research Center

Martina Badell, MD
Associate Professor, Gynecology & Obstetrics
Division of Maternal and Fetal Medicine
Emory University School of Medicine

Erin K. McCreary, PharmD, BCPS, BCIDP
Clinical Assistant Professor of Medicine
University of Pittsburgh
Director of Stewardship Innovation
UPMC and Infectious Disease Connect

Tina Q. Tan, MD
Professor of Pediatrics (Infectious Diseases)
Northwestern University Feinberg School of Medicine

Ethel D. Weld, MD, PhD
Assistant Professor of Medicine, Pharmacology and Molecular Sciences
The Johns Hopkins University School of Medicine

William A. Werbel, MD
Assistant Professor of Medicine
The Johns Hopkins University School of Medicine

Tina Q. Tan, MD
Professor of Pediatrics (Infectious Diseases)
Northwestern University Feinberg School of Medicine

Ethel D. Weld, MD, PhD
Assistant Professor of Medicine, Pharmacology and Molecular Sciences
The Johns Hopkins University School of Medicine

William A. Werbel, MD
Assistant Professor of Medicine
The Johns Hopkins University School of Medicine
Case Vignettes

1: Solid Organ Transplant Patient
2: Patient with Cancer
3: Unvaccinated Pregnant Woman
4: 13-year-old with Complex Congenital Heart Disease
5: Older Adult with Multiple Co-morbidities
Question?
Use the “Q&A” Button

Comment?
Use the “Chat” Button
COVID-19 Risk Framework

**Age**
- <30
- 30-49
- 50-69
- ≥70

**Comorbidity**
- None
- 1
- 2
- 3+

**Vaccination Status**
- Full vaccination plus boosting
- Full vaccination
- Partial vaccination
- Unvaccinated

**Immunosuppression**
- None
- Steroids
- Lymphodepletion (eg Rituximab)
- Solid organ transplant
- TNF-a
- Anti-metabolites (eg mycophenolate)
- AIDS
- Active heme malignancy/BMT

Consider exposure risks and societal/structural risk factors
Case #1 - Solid Organ Transplant Patient
Case #1 – Solid Organ Transplant Patient

• 62-year-old kidney transplant recipient 4 years ago for diabetes maintained on tacrolimus and prednisone calls with new-onset fever and cough three days after a family gathering.

• A home rapid antigen test is positive.

• He has had three doses of mRNA vaccine, last four months ago.
Case #1- Solid Organ Transplant Patient,

**Discussion Questions**

- What is the patient’s risk profile for severe COVID?
- What is the potential for suboptimal vaccine response?
Case #1- Solid Organ Transplant Patient, 

**Polling Question #1**

- For this patient, what would you prescribe? (select one)
  - a) monoclonal antibodies (sotrovimab)
  - b) nimatrelvir/ritonavir (Paxlovid)
  - c) molnupiravir
  - d) high-titer COVID-19 convalescent plasma
  - e) 3 days IV remdesivir
Case #2 – Patient with Cancer
Reported to RN in Jan 2022: Fatigue and mild cough x 3 days, home rapid COVID19 test +, home pulse ox 96% → On Day 8 of illness, taken to the ED by family due to ‘low oxygen’ (80% per home pulse ox)
Polling Question #1

What possible options would have been appropriate to offer the patient at the onset of symptoms (i.e., on first call to the nurse) to possibly delay or prevent hospitalization?

a) bamlanivimab+etesevimab * pre-Dec 2021
b) casirivimab+imdevimab * pre-Dec 2021
c) sotrovimab *post Dec 2021
d) remdesivir *post Dec 2021
e) nirmatrelvir/ritonavir (Paxlovid) *post Dec 2021
f) molnupiravir *post Dec 2021
Case #2: Cancer Patient, Discussion Questions

1. This Multiple Myeloma patient has immunoparesis (low IgA and IgM); how does that contribute to severity of disease and response to COVID vaccination? Any data out there?

2. What role would tixagevimab/ cilgavimab (Evusheld) play for oncologic patients who are not able to get or respond to COVID-19 vaccines, before they have even been exposed?
Case #2: Cancer Patient, Admitted

- ED VS: 89% on RA, started on 6L oxygen, 100%; T=36.8°C; BP 105/59; P 98
- ROS: +chills, +fatigue, +cough, +chest tightness, +SOB, +diarrhea
- Labs at time of admission: +COVID19 PCR

6 › 11.5 ⟂ 156
ALC = 500

Lactate = 4.2
D-dimer = 1146
BNP = 215
CRP = 154.4
ProCal = 0.76
SCr = 1.46

CT PE: NO evidence of pulmonary emboli to the proximal subsegmental branches with limited evaluation of the vessels distally.

Extensive bilateral groundglass and consolidative opacities compatible with multifocal atypical/viral pneumonia.

Mild mediastinal lymphadenopathy, likely reactive
Case #2: Cancer Patient, *Polling Question #2*

What would be the appropriate first-line treatment option for immunocompromised patients hospitalized with COVID-PNA in 2022?

1. remdesivir
2. dexamethasone
3. baricitinib

*Discussion Question:* Should we also treat for concurrent bacterial PNA due to additional known immunosuppression and abnormal proCAL? In the inpatient or outpatient setting?
Case #2: Cancer Patient

• Hospital Course Summary:
  • D1: Initiated Remdesivir 100mg IV QD for 5D and Dexamethasone 6mg IV QD for 10d
  • D5: worsening hypoxia, high-flow O2 at 60L; daily proning; 5D Cef/Azithro for suspected bacterial co-infection (no positive blood or sputum cultures could also comment on urine strep/Legionella Ags if u have during hospital course)
  • D10: weaned off high-flow O2 to 4L nasal cannula
  • D18: discharge home with home oxygen, outpatient follow up
Case #3 – Unvaccinated Pregnant Person
Case #3 – Unvaccinated Pregnant Person

• A 23-year-old unvaccinated pregnant woman, 26 weeks gestation, comes to your outpatient clinic having been referred by her OB for a positive COVID-19 test.

• She attended an unmasked indoor birthday gathering a week ago with 50 close friends and was just told the host became symptomatic the next day with a positive at-home test.

• She now has anosmia, myalgias, and a mild sore throat, which developed 2 days ago.

• SARS-COV2 PCR returns positive.
Case #3 – Unvaccinated Pregnant Person,

*Discussion Question*

• Is she at higher risk for mortality from COVID-19 than she was last year, when she was not pregnant?
Case 3 – Unvaccinated Pregnant Person,

Polling Question #1

Which COVID therapeutic is not recommended for pregnant women? (Select all that apply)

- a) remdesivir
- b) sotrovimab
- c) nirmatrelvir/ritonavir (Paxolvid)
- d) molnupiravir
- e) dexamethasone

Discussion Question: What therapeutics should you consider in her?
Case #3 – Unvaccinated Pregnant Person,  
*Discussion Question*

- Under what clinical circumstances would you recommend hospitalization for pregnant patients with COVID? How does gestational age affect your COVID treatment recommendations?
Case #4 – 13-year-old with Complex Congenital Heart Disease
Case #4- 13-Year-Old with Complex Congenital Heart Disease

• 13-year-old boy with a history of complex congenital heart disease (double inlet left ventricle s/p extracardiac Fontan and pacemaker placement as infant), asthma, and obesity (106 kg) who lives with his mother and 3 siblings in a homeless shelter after his mother lost her job.

• He attended in person school for several weeks until the school temporarily closed due to a large number of COVID-19 cases among the teachers and students, none of which he has been in close contact. Many people at the homeless shelter walk around unmasked. The family living in the room next to his family’s room developed cough, congestion, sore throat and fever 4 days ago. This family and his family gather together for meals and have been in contact with each other on a frequent basis.

• The patient has had fever, sore throat, cough, and body aches for 1 day.

• He has only received his first dose of Pfizer vaccine and was due for his 2\textsuperscript{nd} dose 1 month ago but mom has not had the time to bring him to the clinic to receive the 2\textsuperscript{nd} dose of vaccine.
Case #4- 13-Year-Old with Complex Congenital Heart Disease

- Patient was evaluated at a community clinic and except for fever and cough, he had no respiratory distress or wheezing. Oxygen saturation was at 91% on room air which is his normal baseline.

- Rapid strep testing was negative. COVID-19 testing was positive.
Case #4- 13-Year-Old with Complex Congenital Heart Disease, *Discussion Question*

- What risk factors does this patient have that places him at high risk for progression to severe COVID-19 disease?
Case #4- 13-Year-Old with Complex Congenital Heart Disease, *Polling Questions #1 and #2*

Would you treat this patient with sotrovimab?
   a) Yes
   b) No

Would you treat this patient with remdesivir?
   a) Yes
   b) No
When should this patient be given his 2nd dose of COVID-19 vaccine and his booster dose?

a) He should receive his 2\textsuperscript{nd} dose of vaccine as soon as possible.

b) If he receives sotrovimab, the 2\textsuperscript{nd} dose of vaccine should be delayed for 90 days and the booster given 5 months after the 2\textsuperscript{nd} dose.

c) If he receives remdesivir, the 2\textsuperscript{nd} dose of the vaccine should be given at the time he is receiving the remdesivir and the booster given 5 months after the 2\textsuperscript{nd} dose.

d) No matter what he is treated with, the 2\textsuperscript{nd} dose of the vaccine should be delayed for 2 weeks and the booster given 5 months after the 2\textsuperscript{nd} dose.
Case #5 – Older Adult with Multiple Co-Morbidities
Case #5 – Older Adult with Multiple Co-Morbidities

• 62 yo woman with obesity and HIV well controlled on r/DRV + TAF/FTC who has only received 1 SARS-CoV-2 vaccine.

• PMH of uncontrolled diabetes, hyperlipidemia, and hypertension.

• Day 8 of symptoms and positive test for SARS-CoV-2.

• Meds: high-intensity atorvastatin, metoprolol, losartan, metformin, ritonavir-boosted once daily darunavir and tenofovir alafenamide/ emtricitabine
Case #5 – Older Adult with Multiple Co-Morbidities, *Discussion Questions*

- Would you offer sotrovimab, paxlovid, remdesivir, or molnupiravir?
- If so, which would be your preference and how would you prioritize?
Case #5 – Older Adult with Multiple Co-Morbidities, *Discussion Questions*

• What if her symptoms began 4 days ago?
• Which would you prioritize?
Case #5 – Older Adult with Multiple Co-Morbidities, *Polling Question:*

If the patient is prescribed nirmatrelvir/ritonavir (Paxlovid), which medicines should you hold?

a) Darunavir/ritonavir + TAF/FTC
b) Atorvastatin
c) Metformin
d) Losartan
e) Metformin
Discussion Questions

• What would be the AEs that could result if you neglect to hold interacting meds?
• She is instructed to hold Atorvastatin; when would you resume treatment?
• What if she were also on dabigatran?
• Would you offer additional vaccines, and if so, when?
COVID-19 Risk Framework

**Age**
- <30
- 30-49
- 50-69
- ≥70

**Comorbidity**
- None
- 1
c- 2
- 3+
e.g., diabetes, obesity, CKD, pregnancy, lung disease

**Vaccination Status**
- Full vaccination plus boosting
- Full vaccination
- Partial vaccination
- Unvaccinated

**Immunosuppression**
- None
- Steroids
- Lymphodepletion (e.g., Rituximab)
- Solid organ transplant
- Anti-metabolites (e.g., mycophenolate)
- AIDS
- Active heme malignancy/BMT

*Consider exposure risks and societal/structural risk factors*
Q&A
Selected Resources

COVID-19 Treatment EUA Resources

• Evusheld EUA factsheet: Evusheld Healthcare Providers FS 12202021 (fda.gov)
• Sotrovimab EUA factsheet: SOTROVIMAB-EUA.PDF (gskpro.com)
• Molnupiravir EUA factsheet: FACT SHEET FOR HEALTHCARE PROVIDERS: EMERGENCY USE AUTHORIZATION FOR MOLNUPIRAVIR (fda.gov)
• Paxlovid EUA Fact Sheet for Healthcare Providers: https://www.fda.gov/media/155050/download
• Remdesivir EUA factsheet for children under 12 weighing >3.5 kg and less than 40 kg: Veklury (remdesivir) EUA Fact Sheet for Healthcare Providers, updated 10/22/20 (fda.gov)
• Convalescent Plasma EUA Factsheet and List of Tests and Cutoffs of High Titers (table on page 9): https://www.fda.gov/media/141477/download

Additional Remdesivir Resources

• Remdesivir (Veklury™) Package Insert (Prescribing Information): veklury_pi.pdf (gilead.com)
• Remdesivir PINE-TREE study: Early Remdesivir to Prevent Progression to Severe Covid-19 in Outpatients | NEJM

Information on Drug-Drug Interactions

• University of Liverpool COVID-19 Drug Interactions Page: https://www.covid19-druginteractions.org/prescribing-resources

CDC List of Medical Conditions with Risk of Progression to Severe COVID-19


Therapy Locator Resources

• HHS Therapeutics Locator: COVID-19 Therapeutics Locator (arcgis.com)
• National Infusion Center Association Website: National Infusion Center Association (identifies infusions sites with sotrovimab availability and access.).
• Combat COVID Website on Treatment Options: COVID-19 Resources For Healthcare Providers | combatCOVID.hhs.gov
Selected Resources (Continued)

Treatment & Management Guidelines & Guidance

• CDC guidelines for clinical management: Management of Patients with Confirmed 2019-nCoV | CDC
• NIH guidelines: COVID-19 Treatment Guidelines (nih.gov)
• IDSA guidelines: IDSA Guidelines on the Treatment and Management of Patients with COVID-19 (idsociety.org)
• SMFM Supports the use of Paxlovid in Pregnant Patients https://s3.amazonaws.com/cdn.smfm.org/media/3287/Treatment_1.10.pdf
An online community bringing together information and opportunities for discussion on latest research, guidelines, tools and resources from a variety of medical subspecialties around the world.

Specialty Society Collaborators

- American Academy of Family Physicians
- American Academy of Pediatrics
- American College of Emergency Physicians
- American College of Physicians
- American Geriatrics Society
- American Thoracic Society
- Pediatric Infectious Diseases Society
- Society for Critical Care Medicine
- Society for Healthcare Epidemiology of America
- Society of Hospital Medicine
- Society of Infectious Diseases Pharmacists

www.COVID19LearningNetwork.org
@RealTimeCOVID19
#RealTimeCOVID19
CDC-IDSA Partnership: Clinical Management Call Support

FOR WHOM?
- Clinicians who have questions about the clinical management of COVID-19

WHAT?
- Calls from clinicians will be triaged by CDC to a group of IDSA volunteer clinicians for peer-to-peer support

HOW?
- Clinicians may call the main CDC information line at 800-CDC-INFO (800-232-4636)
- To submit your question in writing, go to www.cdc.gov/cdc-info and click on Contact Form
Continue the conversation on Twitter
@RealTimeCOVID19 #RealTimeCOVID19

We want to hear from you!
Please complete the post-call survey.

Next Call
Saturday, Feb. 5th

A recording of this call will be posted at
www.idsociety.org/cliniciancalls
-- library of all past calls now available --

Contact Us:
Dana Wollins (dwollins@idsociety.org)
Deirdre Lewis (dlewis@idsociety.org)