All attendees will be muted and will remain in Listen Only Mode. Type your questions here so that the moderator can see them. Not all questions will be answered but we will get to as many as possible.
How to Receive CME and MOC Points

LIVE VIRTUAL GRAND ROUNDS WEBINAR
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, 2022 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, 2023 for this activity.

MOC QUESTION

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.
ACG Virtual Grand Rounds
Join us for upcoming Virtual Grand Rounds!

There is not Virtual Grand Rounds next week- Have a Happy Thanksgiving!

Week 48 – Thursday, December 1, 2022
ACG’s Clinical Guideline on Gastroparesis
Faculty: Michael Camilleri MD, MACG
Moderator: Linda Anh Nguyen, MD
At Noon Eastern and NEW! 8pm Eastern!

Week 49 – Thursday, December 8, 2022
ADR, PDR, or IRR: What Are My Quality Metrics for Colonoscopy?
Faculty: Aasma Shaukat, MD, MPH, FACG
Moderator: Asmeen Bhatt, MD
At Noon Eastern and NEW! 8pm Eastern!
Visit gi.org/ACGVGR to Register

ACG’s Endoscopy School & Southern Regional Postgraduate Course
December 2-4, 2022 | Grand Hyatt Nashville, Tennessee
Register online: meetings.gi.org
Disclosures

Freddy Caldera, DO
Research Support: Takeda and Janssen
Consultant: GSK, Celgene, and Takeda

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Dr. Pambianco has no relevant disclosures with ineligible companies.

*All of the relevant financial relationships listed for these individuals have been mitigated

COVID-19 Vaccine Update

Freddy Caldera, DO, MS, FACG
Associate Professor of Medicine
Division of Gastroenterology & Hepatology
University of Wisconsin-Madison, School of Medicine & Public Health
@dr_fcalderaibd
A 55-year-old male with a 15-year history of pan-ulcerative colitis is currently on infliximab and azathioprine. He has been in clinical and endoscopic remission for the past 2 years.

He comes for a routine follow up appointment. He expresses concerns that his medications will increase his risk for a SARS-CoV-2 infection?

What is your recommendation?

Objectives

- Provide an update from recent ACIP meetings
- Review the impact of IBD therapy and therapy used by liver transplant recipients on COVID-19 vaccine response
- Discuss the new bivalent booster recommendations.
Goals of COVID-19 Vaccination

PREVENTION OF SEVERE DISEASE (HOSPITALIZATION, ICU, MECHANICAL VENTILATION)

CURRENT VACCINES DO NOT HAVE THE ABILITY TO PREVENT BREAKTHROUGH INFECTIONS
Weekly Trends in COVID-19 Associated Hospitalizations by Age Group

COVID-NET, March 2020 – August 20, 2022

Since April, hospitalization rates in older age increased relative to other age groups.
Unvaccinated people at higher risk of severe illness compared with vaccinated people

Most (75%) vaccinated people with severe COVID-19 illness have multiple risk factors:

- Older age (most ≥65 years, but with risk increasing with age)
- Underlying medical conditions (with risk increasing with number of underlying conditions)
  - Immunosuppression
  - Diabetes mellitus
  - Chronic kidney disease
  - Chronic lung disease
  - Chronic cardiovascular disease
  - Chronic neurologic disease

Antiviral drugs can help reduce risk of severe illness in people at higher risk, regardless of vaccination status
Mechanism of action of authorized COVID-19 vaccines

Mechanism of action of Novavax COVID-19 Vaccines

• Components of Novavax COVID-19 vaccine, Adjuvanted, include:
  • SARS-CoV-2 recombinant spike (rS) protein is purified, full-length, and stabilized in its prefusion conformation
  • Matrix-M™adjuvant facilitates activation of the cells of the innate immune system, which enhances the magnitude of the spike protein-specific immune response

• These two vaccine components elicit
  • B- and T-cell immune responses to the spike protein, including neutralizing antibodies, which protect against COVID-19
RCT evaluating efficacy of COVID-19 vaccines

**Incidence of Symptomatic Covid-19 in the Per-Protocol Population**

**Vaccine Efficacy in Specific Subgroups**

- **Per-Protocol Population**
  - Vaccine Efficacy (95% CI): 99.7% (98.2 to 99.6)
  - Placebo: 96/7920
  - NVX-CoV2373: 30/7920

- **Non-B.1.1.7 Variant**
  - Vaccine Efficacy (95% CI): 96.4% (95.3 to 97.3)
  - Placebo: 28/7020
  - NVX-CoV2373: 1/7020

- **B.1.1.7 Variant**
  - Vaccine Efficacy (95% CI): 36.3% (71.3 to 93.5)
  - Placebo: 58/7020
  - NVX-CoV2373: 8/7020

**Confirmed, Symptomatic Covid-19**

- Incidence: 34.0
  - 95% CI: 30.7 to 37.9
  - 63 cases

Adverse events after Novavax COVID-19 Vaccines

**Any Systemic Adverse Event**

- Dose 1: NVX-CoV2373: 58.0, Placebo: 21.1
- Dose 2: NVX-CoV2373: 42.7, Placebo: 48.9

**Any Local Adverse Event**

- Dose 1: NVX-CoV2373: 78.9, Placebo: 21.7
- Dose 2: NVX-CoV2373: 69.5, Placebo: 55.9
• 6144 patients with IBD
• IBD itself does not increase the risk of severe COVID-19 disease
• Those who are older, have additional comorbidities and are on oral corticosteroids appear to be at increased risk of adverse outcomes from COVID-19.
• Those on combination thiopurines with TNF antagonists are not at increased risk

Ungaro RC, Gastroenterology. 2022;162(1):316-319

Patients with CLD are more likely to die from COVID-19 infection

CLD appears to be a risk factor for COVID-19 mortality
• 2780 patients (pts), 250 with CLD:
  12 vs 4% rate of death, RR 4.6
• NAFLD, NASH, cirrhosis likely increase mortality
• Independent of age, race, BMI, hypertension, diabetes
• Affected by CLD severity:
  • Cirrhosis vs no cirrhosis
  • CP class A vs B or C

LT recipients with COVID-19 have similar mortality and hospitalization rate, but may have more severe illness

- International registry of LT recipients with COVID, compared to contemporaneous control of non-SOTr patients with COVID
- LT was not independently associated with death; increased age and presence of comorbidities were associated with death

Who makes vaccine recommendations?
Advisory Committee on Immunization Practices

- The ACIP is a group of medical and public health experts that develops recommendations on how to use vaccines to control diseases in the United States.

- The Centers for Disease Control and Prevention (CDC) sets the U.S. adult and childhood immunization schedules based on recommendations from the ACIP.
Recommendations for immunosuppressed populations

Advisory Committee on Immunization Practice (ACIP)
Immunocompromised people comprise 2.7% of US adults including
- Solid tumor and hematologic malignancies
- Receipt of solid-organ or hematopoietic stem cell transplant
- Severe primary immunodeficiencies
- Persons living with HIV
- Treatment with immunosuppressive medications such as cancer chemotherapeutic agents, TNF blockers, certain biologic agents (e.g., rituximab), and high-dose corticosteroids

ACIP has provided special recommendations regarding vaccine in the past
- Pneumococcal 13 serotype vaccine
- Zostavax vaccine

Percent of subject with antibody response after two mRNA vaccine doses by condition

Healthy Controls: 95%–100%
Additional dose of COVID-19

On August 13, 2021, the CDC Advisory Committee on Immunization Practice (ACIP) recommended an additional dose of mRNA COVID-19 vaccine for moderate to severe immunocompromised individuals (solid transplant recipients) and to individuals on the following therapies:

- High-dose corticosteroids (defined at ≥20mg / day of oral prednisone)
- Anti-TNF biologics and biosimilars or immunomodulators (azathioprine, methotrexate, etc.)

This additional dose was intended for people who likely did not mount a protective immune response after initial vaccination.

Moderate to Severely Immunocompromised People

- Active treatment for solid tumor and hematologic malignancies
- Receipt of solid-organ transplant and taking immunosuppressive therapy
- Receipt of CAR-T-cell or hematopoietic stem cell transplant (within 2 years of transplantation or taking immunosuppression therapy)
- Moderate or severe primary immunodeficiency (e.g., DiGeorge, Wiskott-Aldrich syndromes)
- Advanced or untreated HIV infection
- Active treatment with high-dose corticosteroids (i.e., ≥20mg prednisone or equivalent per day), alkylating agents, antimetabolites, transplant-related immunosuppressive drugs, cancer chemotherapeutic agents classified as severely immunosuppressive, TNF blockers, and other biologic agents that are immunosuppressive or immunomodulatory
Subjects who had a humoral immune response after two doses of mRNA vaccine on Immune-modifying therapy conditions

Summary of studies evaluating humoral immune response after COVID-19 vaccination in patients with IBD

HUMORAL IMMUNOGENICITY

- Patients with IBD have lower antibodies than healthy controls
- Those on anti-TNF therapy may have lower antibodies
- Vedolizumab, ustekinumab not associated with lower antibodies
- Robust antibody responses are seen after three doses of COVID-19 vaccines.
Summary of studies evaluating cell-mediated immune responses after COVID-19 vaccination in patients with IBD

• Previous studies have shown the vaccines are safe and not associated with disease flares.

• In 3316 individuals with IBD
  • Risk of flares is rare less than 2% of patients had a flare
  • Injection site tenderness (68%) and fatigue were the most common reported localized and systemic adverse events.

Weaver KN, et al. Inflamm Bowel Dis. 2021 Dec 6
COVID-19 vaccine are effective in patients with IBD comparable with that in non-IBD groups

HerCULES data: Persistence of antibodies six months after a third dose
SOTr have an altered immune response and lower vaccine immunogenicity

- SOTr have lower antibody responses to many vaccinations
- mRNA COVID vaccines response ranges 30-58%
- Antimetabolite-containing immuno-suppression (IS) (mycophenolate), age, eGFR, appears to negatively influence immune response


Immunogenicity is decreased in liver transplant recipients (LTr), but less so than other SOTr

Figure: Prevalence of anti-SARS-CoV-2 antibodies at 4 wk after the second vaccine dose in all transplant patients and by type of organ transplant.
Humoral and Cellular Immune Response After Third and Fourth SARS-CoV-2 mRNA Vaccination in Liver Transplant Recipients

Bivalent COVID-19 vaccine booster

- Bivalent vaccine based on the original (ancestral) strain of SARS-CoV-2 and the Omicron BA.4 and BA.5 (BA.4/BA.5) variants of SARS-CoV-2.

- New booster recommendation for people ages 5 years and older to receive 1 bivalent mRNA booster after completion of a monovalent primary series; it replaces all prior booster recommendations
  - bivalent Moderna or Pfizer-BioNTech booster dose in people ages 5 years and older
  - Monovalent Novavax booster available in limited situations
  - People age 18 and older who are unable to receive an mRNA vaccine.
COVID-19 Vaccination Schedule General Population

People ages 5 years and older*

- Primary Dose
- Primary Dose
- Bivalent Booster

Regardless of previous booster doses given

Ages and vaccines as authorized by FDA and recommended by ACIP/CDC

COVID-19 Vaccination Schedule for Moderate to Severely Immunocompromised

People ages 12 years and older

- Moderna or Pfizer-BioNTech
  - Primary
  - In 3-6 weeks
  - In all least 4 weeks
  - Primary
  - Bivalent booster

- Novavax
  - Primary
  - In 3 weeks
  - In all least 2 months
  - Bivalent booster

People ages 18 years and older who previously received Janssen primary series dose!

- Primary
- Add mRNA dose
- In at least 4 weeks
- Bivalent booster

ACIP: Interim Clinical Considerations
Adverse Events after Bivalent Booster

Immunogenicity of Bivalent COVID-19 Vaccine
Timing considerations for Patients with Current or Prior SARS-CoV-2 Infection

- Consider delaying any COVID-19 vaccination by 3 months from symptom onset or positive test (if asymptomatic)

Timing considerations for Patients with recent COVID-19 vaccine booster

- ACIP recommended at least 2 months since last booster dose.
- Could not be extended because needed to follow recommendation in FDA EUA
- Depends on number of boosters +/- SARS-CoV-2 infection
Coadministration of COVID-19 vaccines with Other Vaccines

- Routine administration of all age appropriate doses of vaccine
- Offer influenza and COVID-19 vaccines at the same visit
  - Remember new recommendations for influenza vaccines in patients >65 years of age.
  - Get an influenza vaccine that is recommended for all adults.

Summary on Myocarditis and Pericarditis

- Risk of myocarditis and pericarditis has been identified after COVID-19 vaccines
  - Risk is rare and primarily observed in adolescent and young males
  - Among VAERS risk is lower after booster dose compared to primary series
- Most individuals have fully recovered
- The risk of adverse cardiac outcomes were 1.8-5.6 higher after SARS-CoV-2 infection than after mRNA COVID-19 vaccination among males ages 12-17 years
Provider Recommendation on COVID-19 vaccine acceptability

• A poll from the University of Michigan found that 77% of older adults say their provider’s recommendation about COVID-19 vaccination is very or somewhat important to their decision to get vaccinated
• It was very important to those who were:
  • Black (79%),
  • over age 65,
  • retired or have incomes under $30,000


Provider Recommendation on COVID-19 vaccine acceptability

• All health care workers: Physicians, nurses and nurse practitioners, pharmacists and physician’s assistants should start communicating to their patients now about the importance of getting a dose of one of the updated (bivalent) COVID-19 boosters when they become available
What else?

Health Maintenance Checklist

Screening
- Skin Cancer
- Colorectal Cancer
- Cervical Cancer
- Osteoporosis
- Anxiety/Depression
- Latent TB

Vaccines
- Influenza
- Pneumococcus
- Zoster
- Varicella immunity
- MMR immunity

Please see the full checklist for specific recommendations.
www.crohnscolitisfoundation.org/science-and-professionals/education-resources/health-maintenance-checklists

Take Home Points: back to case

• Certain patients are still at risk for SEVERE COVID-19 disease
• Patients with IBD are not at increased risk for SEVERE disease and able to mount immune response to COVID-19 vaccine
• Liver transplant recipients can mount a response to a third dose of a COVID-19 vaccine
• Bivalent boosters are safe and boost the immune response.
Thank you! Questions?

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Questions?

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