Recent and Emerging Co-Infections in the Setting of ART: COVID-19 and MPOX

Constance A. Benson, MD
Professor of Medicine and Global Public Health
University of California San Diego

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Financial Relationships With Ineligible Companies (Formerly Described as Commercial Interests by the ACCME) Within the Last 2 Years:

Dr Benson has served on advisory and data safety monitoring boards for GlaxoSmithKline/ViiV Healthcare, received research grants awarded to her institution from Gilead Sciences, Inc., and serves as a consultant to NDA Partners, LLC. (Updated 12/12/22)

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Learning Objectives

After attending this presentation, learners will be able to:

- Describe the approaches to outpatient treatment of COVID-19 in people with HIV
- Initiate SARS-CoV-2 vaccination recommendations for people with HIV
- Implement current treatment and vaccination recommendations for MPOX in people with HIV

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Question

How do I treat mild-moderate COVID-19 in the outpatient setting in people with HIV?

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Case 1

- 65 yo male presents with low-grade fever, cough, headache, and sore throat for 2 days
- Rapid COVID test is positive at home; rapid influenza negative
- HIV RNA < 20 c/ml
  CD4 560 cells/ul
  Smoker
- ARV Rx = Dolutegravir / lamivudine (fdc), rosuvastatin
- Oxygen saturation ~ 94 - 95% on room air

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ARS Question 1: How would you treat his SARS-CoV-2 infection?

A. Initiate nirmatrelvir/ritonavir
B. Administer bamlanivimab/etesevimab infusion
C. Administer bebtelovimab infusion
D. Administer remdesivir outpatient infusion (over 3 days)
E. Initiate molnupiravir
F. Initiate prednisone (40 mg daily)

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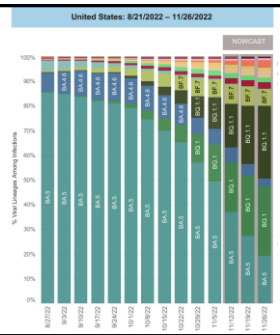

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Nirmatrelvir/Ritonavir: Drug Drug Interactions Including with ART

- Ritonavir inhibits CYP3A impacting metabolism of many medications
- Effect on CYP3A during treatment (5 days) and for additional 2-3 days after treatment completed
- Antiretroviral drug considerations:
  - Continue ART, including boosted-PI regimens
  - OK in untreated HIV – low risk for resistance with 5 days of treatment

Useful resources: NIH Guidelines & Liverpool Checker

Paxlovid Package insert

Patients on ritonavir- or cobicistat-containing HIV regimens should continue their treatment as indicated. Monitor for increased PAXLOVID or protease inhibitor adverse events with concomitant use of these protease inhibitors *[see Dosage and Administration (2.4)]*.

COVID-19 Drug Interactions

https://www.covid19treatmentguidelines.nih.gov
https://www.covid19-druginteractions.org/
https://www.fda.gov/media/155050/download

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Key Recommendations for COVID-19 and People With HIV

- People with HIV who develop COVID-19 should be treated according to current guidelines for management of COVID-19, regardless of CD4 cell count or viral suppression (**evidence rating: AIa**)
- People with HIV who develop mild-moderate COVID-19 and have CD4 cell counts less than 200/μL or without viral suppression should be treated with ritonavir-boosted nirmatrelvir (**evidence rating: AIIa**).
  - Drug-drug interactions should be taken into consideration
- People with HIV who recover from severe COVID-19 should be monitored for post-acute sequelae of SARS-CoV-2 ("long COVID") and ART should be optimized to the extent possible to further reduce inflammatory responses to COVID-19 and HIV (**evidence rating: AIII**)

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Key Recommendations for COVID-19 and People With HIV

- Primary COVID-19 vaccination and vaccine boosting is recommended for all people with HIV (**evidence rating: AIa**). For those who have untreated HIV infection or a CD4 cell count less than 200/μL, the primary vaccination series should include at least 3 vaccine doses and vaccine booster doses (**evidence rating: AIIa**)
- *If circulating SARS-CoV-2 variants anticipated to be susceptible*, preexposure prophylaxis with tixagevimab (300 mg) plus cilgavimab (300 mg) to prevent COVID-19 is recommended for adults and adolescents who have untreated HIV infection or a CD4 cell count less than 200/μL or those not able to be fully vaccinated (**evidence rating: BIII**)
- Postexposure prophylaxis is not recommended for people with HIV (**evidence rating: AIII**). Currently available monoclonal antibody agents are not sufficiently effective against the predominant circulating variants and subvariants.

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Why PWH May Have Worse COVID-19 Outcomes

- **Immunodeficiency**
  - Patients with advanced HIV (low CD4 cell counts, untreated HIV) may have prolonged SARS CoV-2 replication
- **Comorbidities**
  - PWH have high rates of comorbidities that are also risk factors for severe COVID
- **Social determinants of health**
  - PWH more likely to be racial/ethnic minorities, poor – risk factors for worse COVID outcomes

Possibility of Worse COVID-19 Outcomes Highlights Importance of COVID-19 Vaccination and Treatment in people with HIV

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Triant V and Gandhi R, CID 2021

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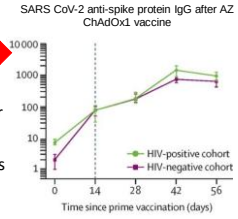
Immune Responses to COVID Vaccines in PWH

- PWH on ART with high CD4 counts have good immune responses (antibodies, T cells) to vaccines.
- PWH who have low CD4 cell count or unsuppressed HIV RNA may have lower antibody responses to vaccines



Frater J et al, Lancet HIV, 2021; Madhi S et al, Lancet HIV 2021; Woldemeskel, CID, 2021; Ruddy JA et al., AIDS, 2021; Spinelli M, et al, abstract LB8, IDWeek 2021; Antinori A, et al, European AIDS Conference 2021, Oral Abstract OS3/4

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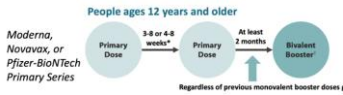
COVID-19 Vaccination Schedule for People who are NOT Moderately or Severely Immunocompromised



COVID-19 Vaccination Schedule for People who ARE Moderately or Severely Immunocompromised

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MPOX (formerly Monkeypox)

IAS–USA Recommendations 2022

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Question

How do I treat new skin lesions and fever in the outpatient setting?

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Case 2

- 30 yo Male presents with new lesions on his buttocks, groin, back, and face
- MSM; Febrile
- Several different sexual partners in the last 4 weeks
- HIV RNA 28,000 c/ml (off ARV now)
- CD4 count 250 cells/ul
- UDS + methamphetamine

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ARS Question 2: In addition to STI screening and MPOX culture, which of the following would you do?

A. Treat for molluscum contagiosum
B. Start tecovirimat at this visit
C. Wait for cultures, if positive for MPOX, start tecovirimat
D. Would not Rx tecovirimat (not indicated in this setting)
E. No specific MPOX treatment; instead administer JYNNEOS vaccine now

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Key Recommendations for MPOX

- Coinfection with other STIs is frequent and should be screened for when MPOX is first recognized or suspected (**evidence rating: AIII**)
- Treatment recommendations are evolving, but those patients who are immunosuppressed or otherwise at high risk for progression or those with severe disease should receive oral or intravenous tecovirimat (**evidence rating: BIII**)
- For individuals with a known exposure, the JYNNEOS vaccine (smallpox and MPOX vaccine, live, nonreplicating [Bavarian Nordic]) should be administered to asymptomatic contacts ideally within 4 days but up to 14 days (**evidence rating: AIII**).
- Primary JYNNEOS vaccination with 2 doses given at least 28 days apart is recommended for individuals at high risk (**evidence rating: AIII**)

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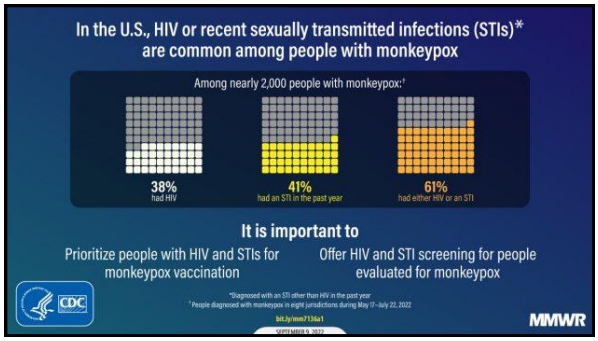

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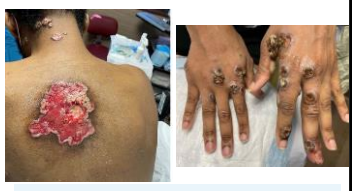
Severe MPOX in People with Advanced HIV

- 27,884 MPOX cases in US (10/21/22)
- CDC consultation provided for 57 hospitalized patients:
  - 47 (82%) had HIV, only 4 (9%) on ART; CD4 count <50 in 72%
  - 95% male; 68% non-Hispanic Black, 23% experiencing homelessness
  - 93% received tecovirimat
  - 12 (21%) died
  - MPOX cause or contributing factor in 5 deaths; additional 6 deaths under investigation



Emphasizes importance of testing people with MPXV infection for HIV and importance of diagnosing and treating all PWH

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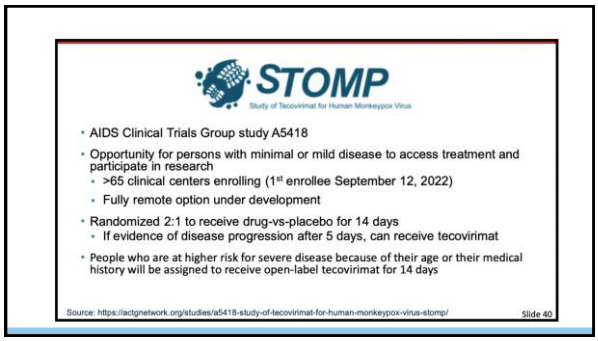
STOMP
Study of Tecovirimat for Human Monkeypox Virus
AIDS Clinical Trials Group study A5418
Opportunity for persons with minimal or mild disease to access treatment and participate in research
>65 clinical centers enrolling (1st enrollee September 12, 2022)
Fully remote option under development
Randomized 2:1 to receive drug-vs-placebo for 14 days
If evidence of disease progression after 5 days, can receive tecovirimat
People who are at higher risk for severe disease because of their age or their medical history will be assigned to receive open-label tecovirimat for 14 days
Source: https://actgnetwork.org/studies/a5418-study-of-tecovirimat-for-human-monkeypox-virus-stomp/
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Question-and-Answer Session

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