An Update on COVID-19 and People With HIV

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

Dr Bender Ignacio has served as a consultant for AbbVie and Seagen. (Updated 9/23/21)

Learning Objectives
After attending this presentation, learners will be able to:
- Describe COVID-19 risks in people with HIV (PWH)
- Describe vaccination and prevention measures for PWH
- Describe COVID-19 treatment considerations for PWH
COVID-19 Epidemiology

Risk in PWH

COVID-19 Incidence, hospitalization both ~2x in PWH in Kaiser Permanente SoCal
• PWH less comorbidities in pop
• Almost entire PWH pop with viral load suppression (>95%)

(JJ Chang. JAIDS 2021)

COVID RISK vs General population

No significant difference in risk of COVID-19 diagnosis in Western Cape, RSA, 2-fold risk of death (partially adjusted for comorbidities)

WHO Data [IAS 2021] 15,522 PWH among 168k persons, 2-fold risk of death
• Among hospitalized COVID-19 cases, aOR severe/critical illness: 1.13
• aOR of in-hospital death: 1.31 for PWH
• 60% had missing ART status, no stratification for ART, VL or CD4

AHA COVID-19 Cardiovascular Disease Registry (IAS 2021)

• No significant difference in in-hospital mortality
• No stratification on CD4, ART
• Very little population data that takes incidence in PWH vs general population into account.
• Disparities based on structural factors, adverse load, access to care, substance use, minus distributed differently for PWH vs general population

Bertagnolio C, WHO, IAS 2021
Durstenfeld K, IAS 2021
Risk Factors for COVID Severity among PWH

<table>
<thead>
<tr>
<th>Variable</th>
<th>RR (95% CI)</th>
<th>Increase/Decrease</th>
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<tbody>
<tr>
<td>Age (≥60 vs. &lt;60)</td>
<td>2.27 (1.61, 3.21)</td>
<td>Increased</td>
</tr>
<tr>
<td>Race (Black vs. non-Black)</td>
<td>2.02 (1.29, 3.18)</td>
<td>Increased</td>
</tr>
<tr>
<td>Diabetes (DM)</td>
<td>1.24 (0.91, 1.71)</td>
<td>No effect</td>
</tr>
<tr>
<td>BMI (≥30 vs. &lt;30)</td>
<td>1.20 (0.93, 1.55)</td>
<td>No effect</td>
</tr>
<tr>
<td>Male sex</td>
<td>1.41 (1.04, 1.91)</td>
<td>Increased</td>
</tr>
<tr>
<td>Presence of lymphopenia</td>
<td>1.84 (1.31, 2.59)</td>
<td>Increased</td>
</tr>
<tr>
<td>CD4 &lt;200</td>
<td>1.60 (1.06, 2.43)</td>
<td>Increased</td>
</tr>
<tr>
<td>VL ≤1000,000</td>
<td>1.82 (1.05, 3.14)</td>
<td>Increased</td>
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Most studies recapitulate that:
- HIV Specific risks in PWH:
  - HTN
  - DM
  - Age
  - BMI

- Across cohorts from early pandemic through the present, clear trends toward increased risk of severe outcome with low CD4.
- Some cohorts suggest current CD4 <350 as threshold, others at 200; but analysis dependent.
- Concern for confounding by test date & SARS CoV-2 effect on lymphopenia (eg: WCDPH used data from hospitalization).
- Most large non-HIV specific datasets lack specificity on parameters of HIV treatment.
- Most PWH on ART in these cohorts.


COVID Severity risk: CD4 & VL

Impact of the Pandemic on PWH

Intersecting disparities affect both populations

1. Similar challenges facing EHE and COVID-19 response
   - Addressing structural disparities
2. COVID-19 competing with EHE priorities
   - Care & service interruption
   - Research funding reallocated
3. Challenges to EHE unrelated to COVID-19
   - Rise of new disparities
   - Lack of comprehensive care especially sexual health + gender care
Influence of pandemic on HIV incidence

- Models of service disruptions vs behavioral change/no change
  - In Baltimore MSM model, 25% reduction in partners without change in services ↓ new diagnoses by 12.2% over a year
  - Care interruption sans behavior change ↑ incidence by up to 10.5%
  - Combination of 25% fewer partnerships + care changes:
    - Overall stable incidence
- Separate study- no change in capacity, less partnerships=> 50% reduction
- Could not rule out 9% increase in HIV
- Link SARS-COV-2 testing with opt-out HIV screening

COVID prevention in PWH

vaccinate thyself

Covid-19 Vaccines for PWH

WHICH VACCINES: Vaccine with any EUA or approved vaccine globally. WHO-endorsed + ChAdOx1 + Sinopharm. Sinovac
  Preference for mRNA vaccine if possible given multiple doses likely more important if compromised response
SAFETY: No evidence of safety concerns with mRNA or inactivated viral vector vaccines for PWH
EFFICACY: small studies show adequate response to mRNA and ChAdOx1 vaccine
BOOSTERS: for CD4 <200 or untreated only (more data pending)

The virtual 2021 Ryan White HIV/AIDS Program (RWHAP) CLINICAL CONFERENCE, October 3-6, 2021
Post-exposure prophylaxis

FDA EUA for REGN--COV (casirivimab 600mg + imdevimab 600mg SQ or IV)

REGN--COV may only be used as post-exposure prophylaxis for adults and pediatric individuals 12 years of age and older weighing at least 40 kg who are:
- at high risk for progression to severe COVID-19, including hospitalization or death, and
- not fully vaccinated or who are not expected to mount an adequate immune response to complete SARS--COV-2 vaccination (for example, people with immunocompromising conditions, including those taking immunosuppressive medications), and
- have been exposed to an individual infected with SARS--COV-2 consistent with close contact criteria per Centers for Disease Control and Prevention (CDC), or

For PWH: Not fully vaccinated or CD4 <200, previously described comorbidities or age

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COVID-19 Treatment for PWH

• Not different from general population: Follow NIH and IDSA Guidelines

• Consider early treatment for PWH with risks for severe outcomes
  ◦ Unvaccinated
  ◦ CD4 <200 or untreated: possible non-response to vaccine
• Monoclonal Antibodies with EUA (REGN--COV or sotrovimab)
  Clinical research opportunities

• Apart from mAb, no other authorized/approved treatments for COVID-19 in non-hospitalized patients
  ◦ Discourage unproved therapies or ART change unless within a high-quality study

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Ambulatory Covid treatment for PWH

• Not different from general population: Follow NIH and IDSA Guidelines

• Consider early treatment for PWH with risks for severe outcomes
  ◦ Unvaccinated
  ◦ CD4 <200 or untreated: possible non-response to vaccine
  ◦ Monoclonal Antibodies with EUA (REGN--COV or sotrovimab)
  Clinical research opportunities

• Apart from mAb, no other authorized/approved treatments for COVID-19 in non-hospitalized patients
  ◦ Discourage unproved therapies or ART change unless within a high-quality study
Inpatient management of COVID-19

- Do not withhold immunomodulators or immunosuppressants (IL-6 antagonists, dexamethasone) in hospitalized PWH
  - These are being widely used in other immunocompromised populations
- Remdesivir for early-hospitalized (mod/severe)
- Add dexamethasone + baricitinib or anti-IL-6 for O2 requirement > ICU
  - No RDV for critical illness
- May be indications for antithrombetics in some sub-populations
- No difference for hospitalized PWH

ART in COVID-19

Treatment/prevention

No clinical evidence of benefit of LPV/r, TDF, or other ARVs against SARS-CoV-2

- Do not change ART regimens for PWH with COVID-19 in most cases
- New direct-acting SARS-CoV-2 protease inhibitor antivirals includes ritonavir-boosted
- Single hospitalization for treatment based on drug/drug interactions or duplication
- Hospitalized COVID-19 patients:
  - Continue ART without change
  - Initiate ART once clinically stabilized, prior to hospital discharge similar to ART initiation during OI management

COVID-19 studies inclusive of PWH (US)

- https://combatcovid.hhs.gov/clinicaltrials
- ACTIV-2: Monoclonal antibodies and other therapies
- ACTIV-6 Repurposed drugs: https://activ6study.org/
- MOVe-AHEAD Molnupiravir for post-exposure prophylaxis (PEP). NCT04939428

(list not exhaustive)
Current knowledge gaps

- Initial vaccine vaccine responses for mRNA and Ad-vectored vaccines (global) for PWH and unsuppressed VL or CD4 <200

- Real world effectiveness of COVID-19 vaccines in people with untreated/advanced HIV
  - Moving target with variants, geography, different vaccine types

- Real risks of COVID-19 severity in PWH not on ART, unsuppressed VL
  - Most analyses either include complete ascertainment of PWH retained in care vs incomplete data for general populations

Innovations in HIV care during COVID-19

- Better access to care and ART
  - Much of insurance/ADAP renewal process streamlined
  - 90 day prescriptions for many insurance groups
  - Mail order med increase
  - Telehealth + across state lines

- CARES Fund
  - Improved funding for telehealth/connectivity tech
  - Co-pay coverage, safe transport, vouchers

- Many innovations already retreating
  - Advocate to keep telehealth reimbursement, improved ART delivery etc

Helpful Resources

- Woldemeskel, CID 2021; Frater, Lancet HIV, 2021
- https://combatcovid.hhs.gov/clinicaltrials
- https://www.covid19treatmentguidelines.nih.gov/
- Wendy S Armstrong, et al Clinical Infectious Diseases, 14, https://doi.org/10.1093/cid/ciaa1532
Question-and-Answer Session