HIV Patient Cases: Interactive Discussion

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NM Annual HIV & HCV Update Conference

Meet the Panel

- Moderator: Michelle Iandiorio, MD; NMAETC
- Panel:
  - Christine Durand, MD
  - Joel Gallant, MD
  - Renée Mercier, PharmD
  - Adam Metcalf, LSW
Learning Objectives

1. Compare current treatment options for patients with HIV.

2. Recognize when HIV drug resistance testing is recommended and how the results influence treatment options.

3. Recognize the potential for drug-drug interactions between antiretrovirals (ARVs) and other common medications.

Drop in Poll Everywhere info slide here
Case 1

63yo man with recent poor control of HIV.

- HIV
  - Dx: 1998
  - Risk: MSM
  - Baseline genotype: pan-sensitive
  - Nadir CD4 75
  - Prior OI: CMV colitis, CNS Toxo

- Diabetes
  - Dx 2011
  - Current HgA1C 10.5
  - Prior 6 mo: 7.5
  - Hypertension
  - Chronic dysthymia

- Allergies: TMP/SMX (rash)

- Medications:
  - Tenofovir (TDF), Emtricitabine, Darunavir, Ritonavir qday
  - Metformin 1000 mg bid
  - Atorvastatin 40mg qday
  - Lisinopril 20mg qday
  - Aspirin 81mg qday
  - Sertraline 50mg qday
Case 1

- Normal PE
- CBC normal
- Creatinine 1.2
- AST 45 ALT 60
- Hep A & Hep B immune, HCV Ab NR, T.pal Ab NR, Toxo IgG reactive, QFG NR
- CD4 210 cells/mL (11%)
- HIV VL 80,000 copies/mL
- 6 months earlier: CD4 340 (24%), VL 55
- 12 months earlier: CD4 315 (24%), VL undetectable

Case 1

(ARS Question)

- What is the most likely cause of this patient's viremia?
  A. HIV resistant to his current regimen
  B. Lab error
  C. Non-adherence to ART
Questions for the Panel

- What are the potential causes of this patient’s viremia?
- What further work-up, if any, would you recommend?
- What significance do you think his low-level viremia had 6 months previously?

When to Check for ART Resistance

<table>
<thead>
<tr>
<th>RECOMMENDED</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute HIV Infection</td>
<td>To determine if resistant virus was transmitted to guide treatment decisions</td>
</tr>
<tr>
<td></td>
<td>Genotype preferred</td>
</tr>
<tr>
<td>Chronic HIV infection, at entry into care</td>
<td>Transmitted drug-resistant virus is common in some areas; is more likely to be detected earlier in the course of HIV infection If treatment is deferred, consider repeat testing at time of ART initiation Genotype preferred</td>
</tr>
<tr>
<td>Suboptimal suppression of viral load after starting ART</td>
<td>To assist in selecting active drugs for a new regimen</td>
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When to Check for ART Resistance

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<tr>
<td>Virologic failure during ART</td>
<td>To assist in selecting active drugs for a new regimen. Genotype preferred if patient on 1st or 2nd regimen include integrase inhibitor genotype if virologic failure on integrase inhibitor. Add phenotype if known/suspected complex drug resistance pattern. Coreceptor tropism assay if considering use of CCR5 antagonist (maraviroc).</td>
</tr>
<tr>
<td>Within 4 weeks after discontinuation of ARVs</td>
<td>Before wild type reemerges. Resistance mutations may become minor species in the absence of selective drug pressure thus not detectable on routine resistance assays.</td>
</tr>
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Modified from original table found at www.aidsetc.org

https://hivdb.stanford.edu/hivdb/by-mutations/
Case 1, additional information

- Prior regimens:
  - 1998-2006: AZT/3TC, Lopinavir/Ritonavir
  - 2007-current: TDF/FTC, Darunavir, Ritonavir switched for ease of single daily dosing
- Reports good adherence but per pharmacy, he has had gaps in picking up his refills over the past 4 months.
- Reports that his dog died 4 months ago
- Genotype: M184V

Questions for the Panel

- What recommendations would you make for this patient to improve his virologic control?
- Does this patient require prophylaxis for opportunistic infections?
- What additional resources would you recommend to address his other comorbid issues?
Assess for Need for OI Prophylaxis

<table>
<thead>
<tr>
<th>Immunosuppression</th>
<th>Opportunistic Infection</th>
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<tbody>
<tr>
<td>Any CD4</td>
<td>PPD or IGRA reactive</td>
</tr>
<tr>
<td>CD4&lt;200 (14%) cells/μL</td>
<td>Pneumocystis Prophylaxis</td>
</tr>
<tr>
<td>CD4&lt;100* cells/μL</td>
<td>Toxoplasma Prophylaxis</td>
</tr>
<tr>
<td>CD4&lt;50 cells/μL</td>
<td>MAC Prophylaxis</td>
</tr>
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</table>

*In those with Toxo IgG reactive


Case 2

23yo man with newly diagnosed HIV

- HIV
  - 4th Generation HIV Screen reactive
  - CD4 380 (26%) VL & genotype pending
  - Risk: MSM, multiple unprotected encounters; no IDU
  - Prior HIV screen nonreactive 3 months earlier at outreach event

History of secondary syphilis treated at DOH 6 months previously
Case 2

- Chronic intermittent inhaled methamphetamine use, last use 5 weeks prior
- Several prior psychiatric ED visits for acute psychosis
- Allergies: NKDA
- Medications: no regular medications
- Social history: Medicaid insurance active, couch surfing with friends, currently on probation for disorderly conduct, unemployed, no pets, estranged from family

Case 2 (ARS Question)

- Would you start this patient on ART at this time?
  A. Yes
  B. No
  C. I don’t know
Questions for the Panel

- What are the indications for ART initiation?
- Would you recommend starting this patient on ART at this time? Why/why not?
- When this patient starts ART, what regimen would you start and why would one regimen be preferred over another?
- What other management considerations would you make for this patient?

When to Start HAART

DHHS & IAS-USA Guidelines

- ASAP in all HIV-infected adults as long as the patient is ready (A1 recommendation)
- Must start conditions
  - Opportunistic infection, Tuberculosis
  - HIV-AN, Co-infection with HBV or HCV
  - Pregnant women

Current ARV Medications

**NRTI**
- Abacavir
- Didanosine
- Emtricitabine
- Lamivudine
- Stavudine
- Tenofovir
- Zidovudine

**NNRTI**
- Efavirenz
- Etravirine
- Nevirapine
- Rilpivirine

**PI** (boost with ritonavir or cobicistat)
- Atazanavir
- Darunavir
- Fosamprenavir
- Indinavir
- Lopinavir
- Nelfinavir
- Ritonavir
- Saquinavir
- Tipranavir

**Integrase Inhibitor**
- Raltegravir
- Elvitegravir/cobicistat
- Dolutegravir

**Entry Inhibitors**
- Enfuvirtide
- Maraviroc

Always include 3 active drugs & > 1 class

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**HAART Guidelines**

**Initial Regimen**

**NRTI Background** + **Additional Class**

- Integrase Inhibitor
- Boosted Protease Inhibitor
HAART Guidelines

- Integrase Inhibitor – Based Regimens
  - Abacavir/lamivudine/dolutegravir (if HLAB5701 neg)
  - Tenofovir/emtricitabine/elvitegravir/cobicistat
  - Tenofovir/emtricitabine + dolutegravir
  - Tenofovir/emtricitabline + raltegravir

- Protease Inhibitor – Based Regimens
  - Tenofovir/emtricitabine + darunavir/ritonavir

Case 3

28yo MSM comes in for an office visit and requests a prescription for PrEP.

- 4 sexual partners in past 3 mo
- Versatile anal & oral sex
- Last unprotected sex 2 1/2 wks ago
- Treated for syphilis 3 mo ago
- Last HIV test 3 yrs ago was nonreactive
- No medical problems
- No substance abuse
- No medications
- No symptoms
Case 3
(ARS Question)

- Which of the following is most likely to reduce this patient’s risk of acquiring HIV?
  A. Abstinence education
  B. Circumcision
  C. Increased condom use
  D. Monogamy
  E. PrEP

Questions for the Panel

- What is HIV PrEP and what are the indications to start?

- Would you recommend starting this patient PrEP at this time? Why/why not?
Indications for PrEP

| Men Who Have Sex With Men | 1. HIV positive partner*  
|                          | 2. Recent STI (particularly syphilis)  
|                          | 3. High number of sex partners  
|                          | 4. Inconsistent/no condom use  
|                          | 5. Commercial Sex Work  
| Heterosexual Men & Women | 1-5. Same as above  
|                          | 6. High prevalence area  
| People WhoInject Drugs   | 1. HIV positive injection partner  
|                          | 2. Shares injection equipment  
|                          | 3. Recent drug treatment + still injecting  

*Particularly if HIV-partner does not have an undetectable HIV viral load on HAART

HIV PrEP

- Currently, only one FDA-approved formulation
  - Truvada® (tenofovir DF/emtricitabine)
  - 1 tablet by mouth once a day
  - Prescribe for ≤ 90 day supply
- Trials ongoing for additional agents
HIV PrEP Lessons Learned

- Well tolerated: nausea, resolves 1-3 mo in most\(^1\)
- Potential toxicity: small loss in BMD\(^2\), renal toxicity\(^3\)
- Other STIs common but data mixed\(^4\)
  - HIV PrEP does not protect against other STIs
  - More screening performed & at extragenital sites


HIV PrEP: Lessons Learned

- Effective but adequate adherence necessary
  - iPrEx Study: 44% reduction, 92% reduction in those with good adherence
  - PROUD Study: 86% reduction
- PrEP as bridge to ART: 95% reduction
- Cost effective if used among high-risk MSM (annual incidence >2%)

Contraindications to PrEP

<table>
<thead>
<tr>
<th>Condition</th>
<th>Note</th>
</tr>
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<tbody>
<tr>
<td>Active HIV Infection</td>
<td>Need HAART: 3-active medications</td>
</tr>
<tr>
<td>Active Hep B Infection</td>
<td>Discontinuation of TDF/FTC can lead to hepatitis flair</td>
</tr>
<tr>
<td>Renal Dysfunction</td>
<td>TDF metabolized by kidney. TDF can cause renal toxicity. Do not start if CrCl &lt; 60. Stop if CrCl &lt; 50</td>
</tr>
<tr>
<td>Allergy to TDF or FTC</td>
<td>Currently no alternative. Trials ongoing.</td>
</tr>
</tbody>
</table>

Prescribing HIV PrEP

- ICD-10 Codes:
  - Z20.6 Contact with and (suspected) Exposure to HIV
  - Z20.2 Contact with and (suspected) Exposure to infections with a predominantly sexual mode of transmission
  - Z72.5 High risk sexual behavior (.51 heterosexual, .52 homosexual, .53 bisexual)

- If insured, may require prior authorization
- If no insurance or large copay, may apply for Patient Assistance program (1-855-330-5479)
Case 3  
(ARS Question)

- Which of the following labs are the most appropriate to order to determine if this patient could start PrEP?
  - A. CD4 count, HIV viral load, Hep B SAb
  - B. Chl/GC NAAT urine, HIV Ab, Hep C Ab
  - C. CMP, HIV Ab, Hep B Core IgM
  - D. Creatinine, HIV Ab/Ag, Hep BSAg

Monitoring on HIV PrEP

- Follow-up Q 3 mo
- Adherence
- Side effects
- Risk reduction
- Pregnancy Intention/Birth Control
- Substance abuse referrals
- HIV testing Q 3 mo (minimum)
- STI testing Q 3-6 mo
- Creatinine at 3 mo initially, Q 6 mo after
  Urinalysis Q12 mo
Case 3, continued

- Baseline labs: HIV screen nonreactive, HBSAg NR, HBSAb 150, HCV Ab NR, creatinine 0.9, T.pal Ab NR, GC/Chl urine and rectal negative, pharyngeal GC positive.
- CTX IM + azithromycin po x 1
- Started on TDF/FTC.
- Check-in with nurse 1 month later:
  - Reported initial mild nausea but otherwise tolerating well
  - Taking consistently except for about 1-2 missed doses per week

Case 3

(ARS Question)

- At patient’s 3-month follow-up visit, HIV negative, creatinine 1.8, STI screen negative. Which of the following options is the most appropriate next step?
  A. Continue TDF/FTC and follow-up in 3 months
  B. Hold TDF/FTC pending additional lab testing
  C. Stop TDF/FTC and add FTC to allergy list
Questions for the Panel

- What are the indications to discontinue PrEP?
- What alternatives preventive measures could be offered to this patient?

When to Stop HIV PrEP

- Renal dysfunction
  - Creatinine increase >0.5 not due to other causes
  - CrCl <50
- New proteinuria not due to other causes
- HIV seroconversion
- Allergic reaction or severe intolerance
- Non-adherence to medications or visits
- No longer at risk