

Management and Prevention of Common HIV-Related Manifestations

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Financial Relationships With Commercial Entities

Dr Spach has no financial relationships with any commercial entities. (Updated 8/5/20)

Slide 2 of 40

Learning Objectives

After attending this presentation, learners will be able to:

- List the preferred treatment for CAP in persons with HIV
- Discuss initiation of ART in persons with active tuberculosis
- Describe the approach to isolated hepatitis B core antibody
- Summarize pneumococcal & zoster vaccine recommendations

Slide 3 of 40

Community-Acquired Pneumonia in Persons with HIV



Treatment of CAP in Persons with HIV

- A 38-year-old woman with HIV is seen in clinic in the month of August with a 2-day history of cough, fever, and mild dyspnea on exertion. A COVID-19 test (NP swab) was performed the prior day and is negative.
- She is taking bictegravir-TAF-FTC. Recent HIV RNA level <40 copies/mL and CD4 count 430 cells/mm³. She has no other medical problems.
- Chest radiograph shows a focal right lower lobe infiltrate and she is diagnosed with community acquired pneumonia (CAP). She is not acutely ill.



ARS Question 1

- **Based on OI Guidelines, what oral antibiotic treatment should be given for out-patient management of this woman with CAP?**

1. Trimethoprim-sulfamethoxazole
2. Amoxicillin-clavulanate *plus* Azithromycin
3. Amoxicillin-clavulanate
4. Azithromycin



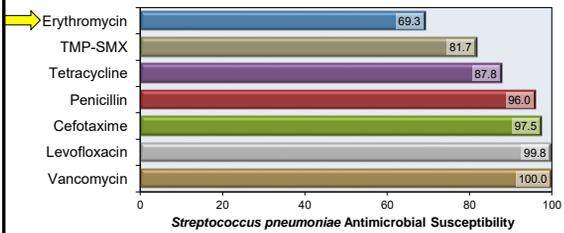
Adult Opportunistic Infections Guidelines
 Treatment of CAP in Persons with HIV

Empiric Out-Patient Treatment of CAP in Persons with HIV	Rating
Preferred	
*Beta-lactam <i>plus</i> Macrolide (Azithromycin or Clarithromycin)	AI
Respiratory Fluoroquinolone (Levofloxacin or Moxifloxacin)	AI
Alternative	
^Beta-lactam <i>plus</i> Doxycycline	BIII

*Preferred beta-lactam = amoxicillin (high-dose) or amoxicillin-CA
 ^Alternative beta-lactam = cefpodoxime or cefuroxime

Source: Opportunistic Infections Guidelines, CAP, October 10, 2019. National HIV Curriculum

Why Not Use Macrolide Monotherapy?
 Pneumococcal Antimicrobial Susceptibility Surveillance Data



Source: CDC, Active Bacterial Core Surveillance Data, 2016. National HIV Curriculum

Tuberculosis in Persons with HIV

National HIV Curriculum

Case History: Pulmonary TB

- A 42-year-old man is admitted to the hospital with a diagnosis of pulmonary TB. He is started on standard RIPE* therapy. He has no evidence of CNS or pericardial involvement.
- 2 days later HIV testing results return as positive and further labs show a CD4 count of 26 cells/mm³ and HIV RNA 236,300 copies/mL. An HIV genotype is ordered. He is started on TMP-SMX for PJP prophylaxis.
- Testing for HBV and HCV are negative and he has no abnormalities on exam other than pulmonary findings.

*RIPE = rifampin + isoniazid + pyrazinamide + ethambutol



ARS Question 2

• One week later he feels much improved and is evaluated to consider starting antiretroviral therapy (ART). What would you recommend now?

1. Defer ART until after 4 weeks of TB therapy
2. Defer ART until after 8 weeks of TB therapy
3. Start ART now and start Prednisone 40 mg daily
4. Start ART now without Prednisone



Adult Opportunistic Infections Guidelines Initiating Antiretroviral Therapy with Active TB

- **CD4 count <50 cells/mm³:**
 - Initiate ART as soon as possible, but <2 weeks of starting TB Rx (AI)
- **CD4 count ≥50 cells/mm³:**
 - Initiate ART <8 weeks of starting TB Rx (AI)

Source: OI Guidelines. *Mycobacterium tuberculosis*. September 27, 2019.



Adult Opportunistic Infections
Guidelines for Preventing TB-IRIS

- **Indication for Pre-emptive Prednisone therapy**
 - Offer for patients with a CD4 count ≤ 100 cells/mm³ who are:
 - Starting ART and recently initiated anti-TB therapy,
 - Responding well to TB therapy, and
 - Do not have rifampin resistance, KS, or active HBV
- **Dosing of Pre-emptive Prednisone Therapy**
 - 40 mg/day for 14 days, then 20 mg/day for 14 days

B1

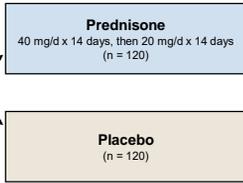
Source: OI Guidelines. *Mycobacterium tuberculosis*. September 27, 2019.



Prednisone for the Prevention of Paradoxical Tuberculosis-Associated IRIS in Persons with HIV

Study Design

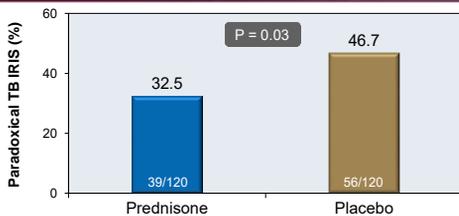
- **Background:** Randomized, placebo-controlled double-blind, study to evaluate prednisone pre-emptive therapy in person with HIV diagnosed with TB in South Africa
- **High Risk**
 - Starting ART <30 days of starting TB Rx
 - CD4 <100 cells/mm³
- **Exclusion Criteria**
 - Neurologic TB
 - Rifampin resistance
 - Kaposi's sarcoma
 - HBsAg+
 - Poor response to TB treatment



Source: Meintjes G, et al. N Engl J Med. 2018;379:1915-25.



Pre-emptive Prednisone Reduced TB-Associated IRIS



Prednisone treatment was not associated with an increased risk of severe infections or cancers

Source: Meintjes G, et al. N Engl J Med. 2018;379:1915-25.



ARS Question 3: Pulmonary TB

• For this man with pulmonary TB on RIPE, which antiretroviral regimen would you recommend?

1. Bictegravir-Tenofovir alafenamide-Emtricitabine
2. Darunavir-cobicistat-tenofovir alafenamide-Emtricitabine
3. Dolutegravir-rilpivirine (fixed dose tablet)
4. Dolutegravir 50 mg BID + Tenofovir DF-Emtricitabine



Initial Antiretroviral Options with Rifampin

- **NRTIs**
 - All OK; use caution with TAF
- **NNRTIs**
 - Efavirenz: standard dose
- **PIs**
 - None
- **INSTIs**
 - Dolutegravir: 50 mg bid
 - Raltegravir: 800 mg bid

Source: HHS. Opportunistic Infections Guidelines. September 27, 2019.



Immunizations in Persons with HIV



Hepatitis B Vaccine

HHS Opportunistic Infections Guidelines
HBV Screening in Persons with HIV

- All persons with HIV should be screened for HBV with:
 - HBsAg
 - Anti-HBs
 - Anti-HBc

Source: Opportunistic Infections Guidelines, November 13, 2018. 

HBV "Isolated Core Antibody"

- A 28-year-old trans woman (preferred pronouns she/her/hers) recently moved and has a visit to new clinic. She has taken DTG plus TAF-FTC x 6 months.
- Initial clinic labs show CD4 count 824 cells/mm³, HIV RNA <40 copies/mL, HBsAg (-), anti-HBs (-), and anti-HBc (+). She has never received hepatitis B vaccine.



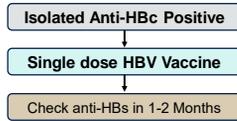
ARS Question 4

Based on HHS OI Guidelines, what would you recommend now to address the isolated anti-HBc?

1. Give 1 standard dose HBV vaccine & check anti-HBs in 1-2 months
2. Give 3-dose series of standard dose HBV vaccine
3. Check HBV DNA level
4. She is immune and no further action is needed

National HIV Curriculum

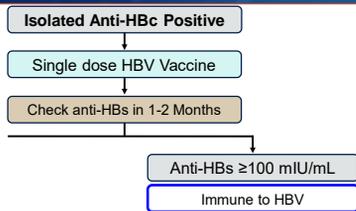
Adult Opportunistic Infections Guidelines Approach to Isolated Anti-HBc in Persons with HIV



Source: Opportunistic Infections Guidelines, November 13, 2018.

National HIV Curriculum

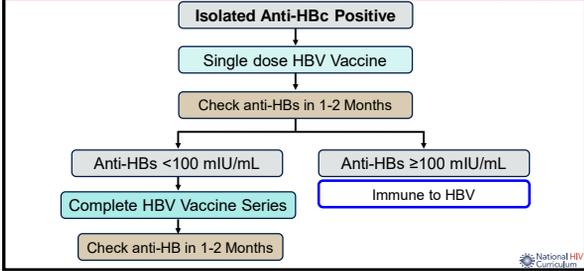
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Source: Opportunistic Infections Guidelines, November 13, 2018.

National HIV Curriculum

Adult Opportunistic Infections Guidelines
 Approach to Isolated Anti-HBc in Persons with HIV



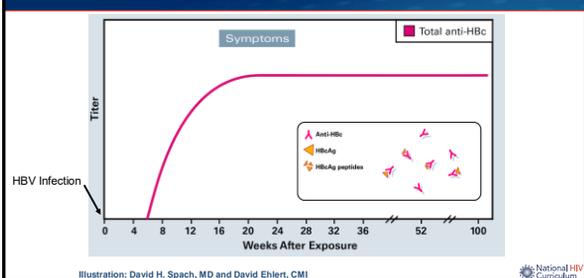
HBV “Isolated Core Antibody”

- Persons with HIV and Isolated anti-HBc:
 - Anti-HBs response for >18 months after Hep B Vaccine Booster Dose
 - 100% in those who achieved a titer of 100 IU/mL after booster
 - 23% of those who achieved a titer of 10-100 IU/mL after booster

Source: Piroth L, et al. J Infect Dis. 2016;213:1735-42.



Total Hepatitis B Core Antibody (Total Anti-HBc)



Isolated Anti-HBc
Resolved HBV Infection and Waning Anti-HBs

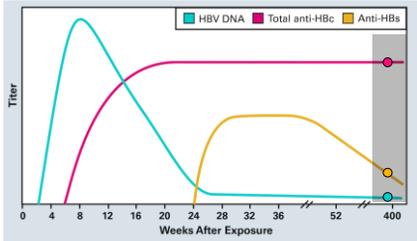


Illustration: David H. Spach, MD and David Ehler, CMI



Isolated Anti-HBc
Persistent Low-Level HBV Infection with Non-Detectable HBsAg

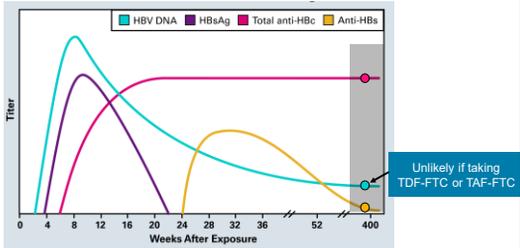
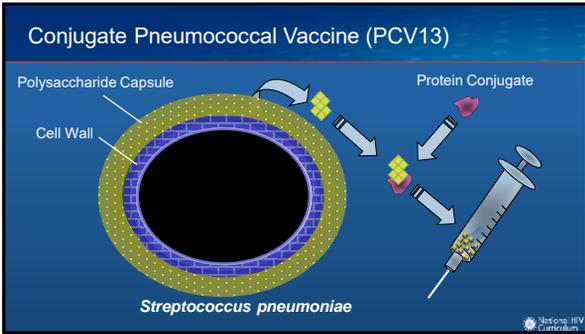
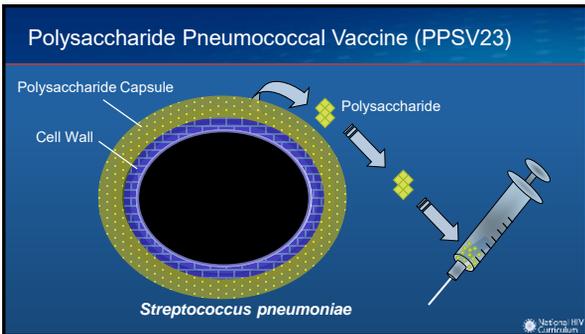


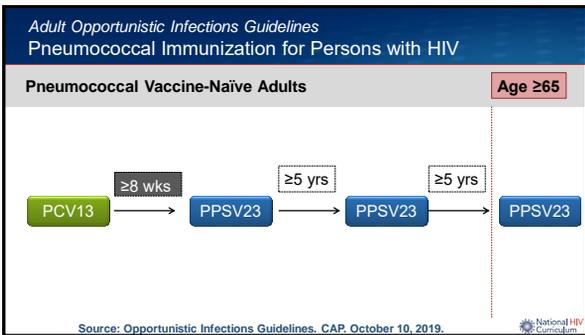
Illustration: David H. Spach, MD and David Ehler, CMI



Pneumococcal Vaccine







Timing of Pneumococcal Vaccine-Naïve Adults with HIV

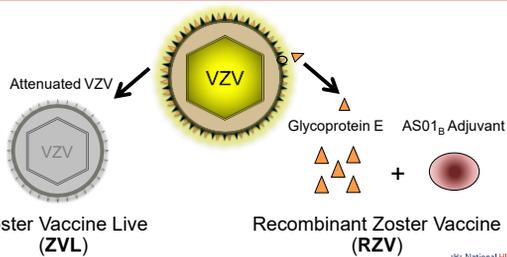
- Timing of PCV13
 - Give regardless of CD4 cell count (**AI**)
- Timing of 1st Dose PPSV23 if CD4 ≥ 200 cells/mm³
 - Give ≥ 8 weeks after PCV13 (**AI**)
- Timing of 1st Dose PPSV23 if CD4 < 200 cells/mm³
 - Defer until CD4 ≥ 200 cells/mm³ on ART (**BIII**)
 - Give ≥ 8 weeks after PCV13 (**CIII**)

Source: Opportunistic Infections Guidelines. CAP. October 10, 2019.



Zoster Vaccine

Zoster Vaccines



2020 ACIP Recommended Adult Immunization Schedule, by Medical Condition and Other Indications, United States

Vaccine	Pregnancy	Immune-compromised (including HIV infection)	HIV Infection CD4 count
RV or RVV			<200 <200
MMV		NOT RECOMMENDED	
Tdap or Td	1 dose Tdap each pregnancy		
MMR		NOT RECOMMENDED	
MMR		NOT RECOMMENDED	
RZV (preferred)	DELAY		

No recommendation/ Not applicable

Source: ACIP. <https://www.cdc.gov/vaccines/schedules/hcp/imz/adult-conditions.html>

Adult Opportunistic Infections Guidelines
Zoster Vaccine in Persons with HIV

Zoster Vaccine in Persons with HIV	Age	CD4	Dosing	Rating
Preferred				
Recombinant Zoster Vaccine (RZV)	≥50 yrs	Any	2-Doses 0, 2-6 months	AIII
Alternative				
*Zoster Vaccine Live (ZVL)	≥50 yrs	≥200	1-Dose	BIII
*ZVL contraindicated in persons with a CD4 count <200 cells/mm ³ (AIII)				

Source: Opportunistic Infections Guidelines. September 5, 2019.

Top 5 Key Points.....

- HIV CAP Rx: (1) macrolide + beta lactam or (2) respiratory FQ
- Starting ART in person with TB: offer prednisone if CD4 <100
- Isolated HBcAb: start with a booster dose of Hep B vaccine
- PCV13 Vaccine: do not delay if CD4 <200
- Zoster Vaccine: Give RZV to all ≥50 years of age

Question-and-Answer Session
