Evaluation and Management of Latent Tuberculosis Infection (LTBI): Recent Updates

Aley Kalapila, MD, PhD
Associate Editor, National HIV Curriculum
Associate Professor of Medicine
Division of Infectious Diseases
Emory University School of Medicine & Grady Health System

Last Updated: November 4, 2022
Dr. Kalapila has no financial conflicts of interest or disclosures.
Latent TB Update: Outline

• Background
• New Preferred LTBI Regimens
• Alternative LTBI Regimens
• Summary
LTBI and HIV: Background
When should you screen for LTBI in people with HIV?
When to Screen Persons with HIV for LTBI

• Screen all persons at the time of HIV diagnosis
• If LTBI (-) and CD4 count <200, rescreen when CD4 count ≥200
• Screen annually if high risk for repeated or ongoing exposure*

*(e.g., during incarceration, travel to a high-TB incidence country, homelessness, living in a congregate setting).
How to screen for LTBI in people with HIV?
Screening for LTBI in Persons with HIV

**Tuberculin Skin Test**

Source: CDC

**Interferon-Gamma Release Assay**

Source: Qiagen

Source: Oxford Immunotec
When should you treat LTBI in people with HIV?
Indication for Treating LTBI in People with HIV

- Positive LTBI screening test (TST or IGRA) AND
  - No evidence of active TB disease
  - No prior treatment for active disease or latent TB infection

- Significant Exposure
  - Recent exposure or close contact with a person with infectious TB, regardless of screening test result

LTBI Treatment in people with HIV: New Preferred Regimens
Preferred Treatment of LTBI in Persons with HIV

**Old Recommendation**
- 6H (Isoniazid* x 6 months)
- 9H (Isoniazid* x 9 months)

**NEW Recommendation**
- 3HP (Isoniazid* + Rifapentine x 3 months)
- 3HR (Isoniazid* + Rifampin x 3 months)

*Pyridoxine is given with Isoniazid to prevent isoniazid-related neuropathy

• **3HP: Weekly Isoniazid* plus Rifapentine for 3 Months**
  - Dosing is weight-based.
  - Recommended only if virally-suppressed and receiving ART regimen that has one of the following anchor drugs — efavirenz, raltegravir, or once daily dolutegravir.
  - Tenofovir alafenamide with rifapentine is not recommended

• **3HR: Daily Isoniazid* plus Rifampin for 3 Months**
  - When using rifampin for LTBI treatment, either dose adjustment or substitution of antiretroviral medications may be needed

*Pyridoxine is given with isoniazid to prevent isoniazid-related neuropathy*
STUDIES SUMMARY

1,2 Clinical trials of 3HP in persons with HIV, have demonstrated:
- Equal efficacy and better tolerability compared to daily INH monotherapy
- Better adherence and treatment completion compared to daily INH

3-5 Clinical trials of 3HR in persons with and without HIV, have demonstrated:
- Comparable decreased risk of developing active TB compared to daily INH
- Lower rates of hepatotoxicity compared to daily INH

Source:
LTBI Treatment in people with HIV: Alternative Regimens
Alternative Therapy for LTBI in Persons with HIV

• **6H/9H: Daily Isoniazid* for 6 to 9 Months**
  – Fewer drug interactions with antiretroviral drugs compared to the rifamycins

• **4R: Daily Rifampin for 4 Months**
  – When using rifampin for LTBI treatment, either dose adjustment or substitution of antiretroviral medications may be needed

• **1HP: Daily Isoniazid* plus Rifapentine for 1 Month**
  – Rifapentine dosing is weight-based.
  – Recommended only with ART regimen consisting of efavirenz combined with either tenofovir disoproxil fumarate-emtricitabine or abacavir-lamivudine

*Pyridoxine is given with isoniazid to prevent isoniazid-related neuropathy

**LTBI: Summary**

- All individuals with HIV should be screened for LTBI
- LTBI treatment is indicated for those with positive LTBI screening tests and/or recent exposure to active tuberculosis case
- Two newly recommended **preferred** regimens for LTBI treatment in persons with HIV:
  - 3HP: Weekly isoniazid plus pyridoxine plus rifapentine for 3 months
  - 3HR: Daily isoniazid plus pyridoxine plus rifampin for 3 months
- There are 3 alternative LTBI treatment regimens, if preferred regimens are not feasible
- When selecting LTBI treatment, consider drug interactions between the LTBI drugs, rifapentine and rifampin, with antiretroviral medications
The production of this National HIV Curriculum Mini-Lecture was supported by Grant U1OHA32104 from the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS). Its contents are solely the responsibility of University of Washington IDEA Program and do not necessarily represent the official views of HRSA or HHS.