What’s New in Treatment of LTBI

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Washington, D.C.

Background

• The global burden of latent *M. tuberculosis* infection is enormous
  – More than 2 billion people infected

• From this reservoir, millions of people will have active tuberculosis (TB) in coming decades

• Reactivation of LTBI accounts for approximately 70% of cases of TB in the US
Background

- Treatment of latent *M. tuberculosis* infection is a key component of TB prevention and elimination
- Recent reports indicate a lower prevalence of LTBI, lower rate of progression to TB, and higher proportion of discontinuation of therapy for LTBI


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Background

- 9 months of isoniazid (INH) is highly efficacious, but effectiveness is diminished by low completion rates (30-60%)
- Better tools to diagnose LTBI, and
- A shorter regimen is needed
  - High completion rates, effectiveness, and tolerability
## Treatment Regimens for LTBI

<table>
<thead>
<tr>
<th>Drugs</th>
<th>Months of Duration</th>
<th>Interval</th>
<th>Minimum Doses</th>
</tr>
</thead>
<tbody>
<tr>
<td>INH</td>
<td>9*</td>
<td>Daily</td>
<td>270</td>
</tr>
<tr>
<td></td>
<td>2x wkly**</td>
<td></td>
<td>76</td>
</tr>
<tr>
<td>INH</td>
<td>6</td>
<td>Daily</td>
<td>180</td>
</tr>
<tr>
<td></td>
<td>2x wkly**</td>
<td></td>
<td>52</td>
</tr>
<tr>
<td>RIF</td>
<td>4</td>
<td>Daily</td>
<td>120</td>
</tr>
</tbody>
</table>

*Preferred  ** Intermittent treatment only with DOT

INH=isoniazid; RIF=rifampin

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### How Much INH Needed for Prevention of TB?

- Longer duration corresponded to lower TB rates if took 0 – 9 mos.
- No extra increase in protection if took > 9 mos.

Isoniazid Regimens

<table>
<thead>
<tr>
<th>Regimen</th>
<th>Doses</th>
<th>Ideal Duration</th>
<th>Complete Within</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>270</td>
<td>9 months</td>
<td>12 months</td>
<td>All</td>
</tr>
<tr>
<td>Twice weekly*</td>
<td>76</td>
<td>9 months</td>
<td>12 months</td>
<td>BII</td>
</tr>
<tr>
<td>Daily</td>
<td>180</td>
<td>6 months</td>
<td>9 months</td>
<td>BI</td>
</tr>
<tr>
<td>Twice weekly*</td>
<td>52</td>
<td>6 months</td>
<td>9 months</td>
<td>Avoid: HIV infected, children (CII)</td>
</tr>
</tbody>
</table>

*via Directly Observed Therapy

Rifampin Regimens

- RIF daily for 4 months is an acceptable alternative when treatment with INH is not feasible (BII for HIV-, BIII for HIV +)
  - INH resistant or intolerant
  - Patient unlikely to be adherent for longer treatment period

- In situations where RIF cannot be used (e.g., HIV-infected persons receiving protease inhibitors), rifabutin may be substituted

- Children should receive 6 months
## Comparison of INH vs. RIF for Treatment of LTBI

### Comparison of Regimen Features: 9H and 4R

<table>
<thead>
<tr>
<th>Regimen Feature</th>
<th>9H</th>
<th>4R</th>
</tr>
</thead>
<tbody>
<tr>
<td>High efficacy</td>
<td>X</td>
<td>*</td>
</tr>
<tr>
<td>Lower hepatotoxicity</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Lower overall cost</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Higher adherence / completion</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>More effective against INH-resistant strains</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>(e.g., among foreign-born persons)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shorter duration</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Fewer drug-drug interactions</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

* Good evidence that 3R is at least as efficacious as 6H. Inferential reasoning from other evidence suggests that efficacy of 4R may approach that of 9H.

AJRCCM 170; 832-835, 2004

## The PREVENT TB Study

**TB Trials Consortium Study 26**

3 months of once-weekly rifapentine plus INH vs. 9 months of daily INH for treatment of latent TB infection

Study Design

Once-weekly, directly-observed rifapentine + INH x 3 months
(3HP)

vs.

Daily, self-administered INH x 9 months
(9H)

For the treatment of latent TB infection in
high-risk tuberculin skin-test reactors

Randomized, open-label

33 months of follow-up from date of enrollment

Study Doses

• Rifapentine + INH x 3 months (3HP): 12 doses
  – Rifapentine 900 mg
  • Graduated dosing for persons < 50 kg
  – Isoniazid 15-25 mg/kg; 900 mg maximum

• Isoniazid x 9 months (9H): 270 doses
  – Isoniazid 5-15 mg/kg; 300 mg maximum

• Vitamin B₆ (pyridoxine) 50 mg with each INH dose
Inclusion Criteria

- Persons ≥ 2 years old who were
  - Tuberculin skin-test (TST)-positive close contacts of a culture-confirmed TB case
  - TST-converters
    - Documented negative → positive within 2 years
  - HIV-infected with
    - Positive TST
    - Close contact to TB case regardless of TST
  - TST-positive, fibrosis on chest radiograph consistent with prior untreated TB
  - Children 2–4 years old with +TST or close contact with a culture-confirmed TB case

Exclusion Criteria

- Confirmed or suspected TB
- TB resistant to INH or rifampin in source case
- History of treatment with
  - > 14 consecutive days with a rifamycin
  - > 30 days with INH
- Prior treatment of TB or M. tuberculosis infection in HIV-uninfected persons
- Intolerance to INH or rifamycins
- Aspartate aminotransferase (AST) > 5x upper limit if AST determined
- Pregnant or lactating females
- HIV-1 antiretroviral therapy within 90 days of enrollment
- Weight < 10 kg
Primary Aim

• Evaluate the effectiveness of weekly 3HP v. daily 9H

• Primary endpoint:
  – Culture-confirmed TB in persons ≥ 18 y.o and culture-confirmed or clinical TB in persons < 18 y.o

Secondary Aims

• Evaluate the tolerability of weekly 3HP v. daily 9H

• Secondary endpoints:
  – Treatment completion
  – Permanent drug discontinuation for any reason
  – Drug discontinuation due to adverse drug reaction
  – Grade 3, 4, and 5 toxicity
  – Culture-confirmed or clinical TB in all persons
  – Resistance to study medications among persons developing TB
Study Design / Sample Size

• Non-inferiority study design
  – Non-inferiority margin (delta): 0.75%

• > 80% power to demonstrate that 3HP is not inferior to 9H
  – 3,200 persons per arm

• Allow for 20% loss
  – Loss to follow-up
  – Clustering of enrollments

• 4,000 persons per arm

Possible Scenarios of Observed Treatment Differences in Noninferiority Trials

Enrollment

• Enrollment began June 2001

• Enrollment ended February 15, 2008

• Follow-up ended September 30, 2010

Analysis Populations

• Enrolled before February 15, 2008
  – Completed 33 months of follow-up by September 30, 2010

• Intention-to-treat (ITT)
  – All persons enrolled in the study

• Modified intention-to-treat (MITT)
  – Enrolled in the study
  – Eligible

• Per protocol (PP)
  – All persons enrolled in the study who were eligible
  – Completed study drug within targeted time period
  – Or developed TB or died but completed ≥ 75% of expected doses prior to event
  – All follow-up time counted; did not require reaching 33 months
Effectiveness and Efficacy

**Effectiveness:**
- TB rate among all persons enrolled who were eligible for the study
  - MITT
  - Takes into account non-adherence

**Efficacy**
- TB rate among all persons who were enrolled, eligible, and completed therapy
  - PP
  - Best-case scenario regarding drug activity

Analysis Populations

- **Enrolled (ITT)** 8,053
- **Eligible (MITT)** 7,731
  - 9H 3,745
  - 3HP 3,986
- **Per protocol (PP)** 5,858
  - 9H 2,585
  - 3HP 3,273
Reason for Ineligibility
N=322 (of 8,053)

<table>
<thead>
<tr>
<th>Reason</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source TB case resistant to INH or RIF (for contacts)</td>
<td>161</td>
<td>50</td>
</tr>
<tr>
<td>Source TB case culture-negative for M. tuberculosis</td>
<td>103</td>
<td>32</td>
</tr>
<tr>
<td>Positive TST not confirmed</td>
<td>37</td>
<td>12</td>
</tr>
<tr>
<td>No susceptibility testing for index case</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>TB at enrollment</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>322</td>
<td>100%</td>
</tr>
</tbody>
</table>

Clinical and Demographic Characteristics
MITT Population

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>9H N=3,745</th>
<th>3HP N=3,986</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (median, IQR)</td>
<td>36 (25-46)</td>
<td>37 (25-47)</td>
</tr>
<tr>
<td>Male sex</td>
<td>2,004 (54%)</td>
<td>2,210 (55%)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>2,160 (58%)</td>
<td>2,296 (58%)</td>
</tr>
<tr>
<td>Black</td>
<td>947 (25%)</td>
<td>978 (25%)</td>
</tr>
<tr>
<td>Asian/Pac. Island</td>
<td>490 (13%)</td>
<td>494 (12%)</td>
</tr>
<tr>
<td>Am./Can. Indian</td>
<td>33 (1%)</td>
<td>84 (2%)</td>
</tr>
<tr>
<td>Multiracial (Brazil)</td>
<td>115 (3%)</td>
<td>134 (3%)</td>
</tr>
<tr>
<td>Ethnicity (US/Can)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>1,442 (43%)</td>
<td>1,576 (44%)</td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td>1,899 (57%)</td>
<td>1,966 (56%)</td>
</tr>
</tbody>
</table>
### Clinical and Demographic Characteristics
#### MITT Population

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>9H N=3,745</th>
<th>3HP N=3,986</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV-infected</td>
<td>100 (3)</td>
<td>105 (3)</td>
</tr>
<tr>
<td>BMI (median, IQR)</td>
<td>27 (23-30)</td>
<td>27 (23-31)</td>
</tr>
<tr>
<td>Site of recruitment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.S./Canada</td>
<td>3,341 (89)</td>
<td>3,542 (89)</td>
</tr>
<tr>
<td>Brazil/Spain</td>
<td>404 (11)</td>
<td>444 (11)</td>
</tr>
<tr>
<td>Completed high school</td>
<td>2,126 (57)</td>
<td>2,269 (57)</td>
</tr>
<tr>
<td>Jail/prison ever</td>
<td>175 (5)</td>
<td>221 (6)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>390 (10)</td>
<td>424 (11)</td>
</tr>
<tr>
<td>Hx EtOH at enrollment</td>
<td>1,888 (50)</td>
<td>1,929 (48)</td>
</tr>
<tr>
<td>Hx IDU at enrollment</td>
<td>136 (4)</td>
<td>149 (4)</td>
</tr>
<tr>
<td>Current tobacco</td>
<td>1,034 (28)</td>
<td>1,112 (28)</td>
</tr>
</tbody>
</table>

### Clinical and Demographic Characteristics
#### MITT Population

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>9H N=3,745</th>
<th>3HP N=3,986</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indication for TLI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Close contact</td>
<td>2,609 (70)</td>
<td>2,857 (72)</td>
</tr>
<tr>
<td>Recent TST converter</td>
<td>972 (26)</td>
<td>953 (24)</td>
</tr>
<tr>
<td>HIV-infected</td>
<td>74 (2)</td>
<td>87 (2)</td>
</tr>
<tr>
<td>Fibrosis on CXR</td>
<td>90 (2)</td>
<td>89 (2)</td>
</tr>
<tr>
<td>Co-morbid liver disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCV</td>
<td>97 (3)</td>
<td>99 (3)</td>
</tr>
<tr>
<td>HBV</td>
<td>60 (2)</td>
<td>42 (1)</td>
</tr>
</tbody>
</table>
## Follow-up and Retention

<table>
<thead>
<tr>
<th>Measure</th>
<th>9H</th>
<th>3HP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person-years of follow-up</td>
<td>9,619</td>
<td>10,327</td>
</tr>
<tr>
<td># months in study (mean)</td>
<td>30.3</td>
<td>30.7</td>
</tr>
<tr>
<td>Proportion of participants completing 33 months of follow-up</td>
<td>86%</td>
<td>88%</td>
</tr>
</tbody>
</table>

## Event rate estimates and the non-inferiority test for A33

33 months of follow-up from time of randomization

<table>
<thead>
<tr>
<th>Population</th>
<th>Study arms</th>
<th># of patients</th>
<th># TB cases</th>
<th>TB per 100 p-y</th>
<th>Cumulative TB rate (%)</th>
<th>Difference in cumulative TB rate</th>
<th>Upper bound of 95% CI of difference in cumulative TB rates*</th>
</tr>
</thead>
<tbody>
<tr>
<td>MITT</td>
<td>9H</td>
<td>3,745</td>
<td>15</td>
<td>0.16</td>
<td>0.43</td>
<td>-0.24</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>3HP</td>
<td>3,986</td>
<td>7</td>
<td>0.07</td>
<td>0.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Per Protocol</td>
<td>9H</td>
<td>2,585</td>
<td>8</td>
<td>0.11</td>
<td>0.32</td>
<td>-0.19</td>
<td>0.06</td>
</tr>
<tr>
<td></td>
<td>3HP</td>
<td>3,273</td>
<td>4</td>
<td>0.05</td>
<td>0.13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* non-inferiority margin (delta) = 0.75%
**Cumulative TB Rate**
33 months from enrollment—MITT

![Cumulative TB Rate Graph]

**Log-rank P-value: 0.06**

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**Tolerability**
MITT population

<table>
<thead>
<tr>
<th>Outcome</th>
<th>9H N=3,745</th>
<th>3HP N=3,986</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment completion</td>
<td>2,585 (69.0%)</td>
<td>3,362 (82.0%)</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Permanent drug d/c- any reason</td>
<td>1,160 (31.0%)</td>
<td>624 (18.0%)</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Permanent drug d/c- due to an adverse event</td>
<td>135 (3.6%)</td>
<td>188 (4.7%)</td>
<td>0.004</td>
</tr>
<tr>
<td>Death</td>
<td>39 (1.0%)</td>
<td>31 (0.8%)</td>
<td>0.22</td>
</tr>
</tbody>
</table>
### Reported Adverse Events

Among persons receiving ≥ 1 dose
During treatment or within 60 days of the last dose
Regardless of attribution to study drug

<table>
<thead>
<tr>
<th>Toxicity</th>
<th>9H N=3,759</th>
<th>3HP N=4,040</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 1-2</td>
<td>364 (9.7%)</td>
<td>325 (8.0%)</td>
<td>0.01</td>
</tr>
<tr>
<td>Grade 3</td>
<td>194 (5.2%)</td>
<td>181 (4.5%)</td>
<td>0.16</td>
</tr>
<tr>
<td>Grade 4</td>
<td>39 (1.0%)</td>
<td>34 (0.8%)</td>
<td>0.37</td>
</tr>
</tbody>
</table>

### Reported Adverse Events

Among persons receiving ≥ 1 dose
During treatment or within 60 days of the last dose
Accounting for attribution to study drug

<table>
<thead>
<tr>
<th>Toxicity</th>
<th>9H N=3,759</th>
<th>3HP N=4,040</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Related to drug</td>
<td>206 (5.5)</td>
<td>328 (8.1)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Rash only</td>
<td>17 (0.5)</td>
<td>35 (0.9)</td>
<td>0.02</td>
</tr>
<tr>
<td>Possible HS</td>
<td>15 (0.4)</td>
<td>158 (3.9)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Other</td>
<td>71 (2.0)</td>
<td>122 (3.0)</td>
<td>0.001</td>
</tr>
<tr>
<td>Not related</td>
<td>399 (10.3)</td>
<td>220 (5.5)</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

HS: hypersensitivity reaction
Hepatotoxicity
Among persons receiving ≥1 dose
During treatment or within 60 days of the last dose

<table>
<thead>
<tr>
<th>Toxicity</th>
<th>9H N=3,759</th>
<th>3HP N=4,040</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All hepatotoxicity</td>
<td>113 (3.0)</td>
<td>24 (0.6)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Related to drug</td>
<td>103 (2.7)</td>
<td>18 (0.5)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Not related</td>
<td>13 (0.4)</td>
<td>6 (0.2)</td>
<td>0.08</td>
</tr>
</tbody>
</table>

Drug Resistance
Among TB cases

<table>
<thead>
<tr>
<th></th>
<th>9H N=12</th>
<th>3HP N=7</th>
</tr>
</thead>
<tbody>
<tr>
<td>INH resistant</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Rifampin resistant</td>
<td>0</td>
<td>1*</td>
</tr>
</tbody>
</table>

*M. bovis* in an HIV-infected person who interrupted therapy
Limitations

• Few HIV-infected participants
  – Enrollment of this population was extended to December 2010
  – Tolerability and effectiveness data pending

• Complete tolerability assessment in young children also pending
  – Enrollment of children 2-11 years old extended to December 2010

Numbers* of Children, MITT

<table>
<thead>
<tr>
<th></th>
<th>9H</th>
<th>3HP</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2–5 years</td>
<td>35</td>
<td>38</td>
<td>73</td>
</tr>
<tr>
<td>6–11 years</td>
<td>26</td>
<td>49</td>
<td>75</td>
</tr>
<tr>
<td>Total</td>
<td>61</td>
<td>87</td>
<td>148</td>
</tr>
</tbody>
</table>

*Preliminary data
Conclusions
The PREVENT TB Study
TB Trials Consortium Study 26

- The effectiveness of 3HP was not inferior to 9H
  - 3HP was at least as effective as 9H
    - The 3HP TB rate was approximately half that of 9H

- The 3HP completion rate was significantly higher than 9H
  - 82% vs. 69%

- 3HP was safe relative to 9H
  - Lower rates of:
    - Any adverse event
    - Hepatotoxicity attributable to study drug

Conclusions
The PREVENT TB Study
TB Trials Consortium Study 26

- Permanent drug discontinuation due to adverse event was higher in 3HP
  - 4.7% vs. 3.6%

- Rates of any adverse event attributable to study drug also higher in 3HP
  - 8.1% vs. 5.5%
  - This relationship also seen with rash, possible hypersensitivity

- Rates of grade 3 and 4 toxicity did not differ by arm

- Rates of death low (~ 1%) in both arms
Interpretation

- The higher rates of 3HP discontinuation due to an adverse event and adverse event attributable to study drug could be related to:
  - Worse tolerability of 3HP
  - More frequent interaction with study personnel
    - Weekly in 3HP vs. monthly in 9H
  - Open-label design with novel regimen
    - Participants and investigators

Potential Impact on TB Control

- 3HP is an alternative to 9H for treatment of latent *M. tuberculosis* infection in persons at high-risk for progression to TB
- Higher completion rates for treatment of LTBI
- 3HP is as effective as 9H in this trial
  - 3HP could be more effective than 9H in operational settings, particularly if 3HP is given under direct observation and 9H completion rates are 30-60%
Recommendations for Use of 3HP

• ATS has convened a workgroup with CDC and IDSA to write new national guidelines for targeted testing and treatment of LTBI. The publication is expected in 2013

Expert Consultants

*Nisha Ahamed, MPH
Bob Belknap, MD
Marcos Burgos, MD
Kim W. Field, RN, PHN, MSN
*Jennifer M. Flood, MD, MPH
James M. Holcombe, MPPA, CPM
David P. Holland, MD, MHS
*C. Robert Horsburgh, MD, MUS
Steven Kyong Won Hwang, MD
Chrispin Kambili, MD
Michael Lauzardo, MD, MSc
Cynthia Lee, MA, CHES

Mark N. Lobato, MD
Bonita T. Mangura, MD, FACP, FCCP
*Masa Narita, MD
*Charles Nolan, MD
Max Salfinger, MD
Barbara J. Seaworth, MD
*Gary L. Simpson, MD, PhD
Jeffrey R. Starke, MD
Timothy R. Sterling, MD
Claire R. Wingfield, MPH
Ed L. Zuroweste, MD

*Report committee
Case #1

- 56 y.o. woman from Jamaica
- Emigrated 22 years ago
- TST 14 mm
- TST 1 year ago "negative"
- Contact of an active case
- Medical history: Autoimmune hepatitis, SLE
- Medications include prednisone 7.5 mg daily, Azathioprine 50 mg daily, Abatacept monthly
- Weight 48 kg, Height 152 cm, BMI = 20
- CXR normal
- AST, ALT are slightly above ULN
Which of the following is least likely to influence the decision to treat this patient for LTBI?

A. Recent TST conversion
B. Immigrant from an endemic country
C. Contact of an active case
D. Use of immunosuppressants

Case #1

The patient wishes to discuss alternatives to INH. Which of the following discussion points should be raised regarding treatment with RIF?

A. Twice weekly RIF with DOT is an option
B. The duration of treatment is 9 months
C. Higher prednisone dose may be necessary
D. None of the above
Case #2

- 65 y.o. homeless man with bladder cancer
- Received several doses of intravesicular BCG in the past year
- Presents with documentation of a 12 mm TST (TST 18 months ago was 0 mm)
- You perform an IGRA which is positive

Case 3: Which of the following is most likely true?

A. Results are compatible with sensitization to BCG and no further work-up is required
B. IGRA is a false positive and no further work-up is needed
C. Positive IGRA suggests *M. tb* infection and additional history regarding exposure should be sought
D. Positive TST represents conversion which may be due to BCG
E. Both C and D are correct
Case #3

• 25 y.o. HIV infected, pregnant woman
• Presents with a TST reaction of 8 mm
• Known contact to an active case.
• Asymptomatic and has a normal CXR.

What is the best course of action?

Case #4: What is the best course of action?

A. Repeat the TST in 8-10 weeks
B. Begin INH and B6
C. Defer treatment until she is 2 months post delivery
D. Perform an IGRA
Each patient below has a TST of 6mm. Which one should be treated for LTBI, based on radiograph as sole risk factor?

Priorities in Screening and Treatment of LTBI

- With new tools for the diagnosis and treatment of LTBI, we now have a chance to improve the effectiveness of TB control in the US by focusing on cost-effective priorities
- IGRA was cost saving compared with TST in certain groups
- LTBI screening guidelines could make progress toward TB elimination by screening close contacts, HIV infected, foreign born regardless of time living in the US

Linas BP. Am J Respir Crit Care Med. 2011;184:590-601