

LATENT TUBERCULOSIS SCREENING AND TREATMENT:

TB or not TB

Christopher Kwong, MD and William Rifkin, MD

Week 14

Educational Objectives:

1. Understand who should be screened for latent TB infection and why
2. Describe what constitutes a "positive" PPD test and why
3. Prescribe a primary effective treatment regimen for latent TB infection

Authors' Note:

Why are we worried about TB, is it still a big problem? In the United States, it is not a common problem, but globally it very much is.

In the USA (from MMWR, 2007):

- 13,293 total reported cases in USA in 2007
- From 2006 the TB rate declined 4.2% to 4.4 cases per 100,000 population, but despite the overall improvement, the rate of decline has slowed from 7.3% (1993-2000) to 3.8% (2000-2007).
- 58.5% of cases are from foreign-born persons

Case rate, 2007:

.. 2.1/100,000 amongst US born (7.8% decline since 2006, and a 71.4% decline since 1993)

.. 20.6/100,000 amongst foreign-born in US

Top four countries of origin: Mexico, Philippines, India, and Vietnam

- Five states (California, Florida, Illinois, New York, and Texas) reported more than 500 cases each for 2007; combined, these five states accounted for more than half (52.0%) of all TB cases in the U.S.

Globally (from World Health Organization) based on 2006 data:

- Overall, one-third of the world's population is currently infected with TB
- 9.2 million total reported cases in 2006, 8% of these were HIV positive.
- Compared to the United States, there are 139 new cases per 100,000 that occurred globally; although the incidence, prevalence, and death rate have been stabilizing or decreasing slowly over the last 5 years, as in the US.

- Globally, 1.7 million people die each year from TB -- Just under 5,000 deaths per day
- 86% of the burden of disease occurs in Africa, South-East Asia, and Western Pacific regions. The countries with the top total absolute number of cases respectively are India, China, Indonesia, South Africa, and Nigeria. African countries have the highest incidence rate per capita.

CASE ONE:

Mrs. Potts is a 50-year-old schoolteacher who emigrated to the U.S. 10 years ago from Vietnam. She is without any symptoms, but when some of her pupils turned up “PPD positive,” she worried that she could be infected with TB and comes to you for advice. She does not recall a previous PPD test, but says she was given the BCG vaccine as an infant in Vietnam.

Questions:

1. Should she be offered a PPD test? If so, what would constitute a “positive” result?
2. Which groups are at high risk of reactivation?
3. So should Mrs. Potts be offered PPD testing?

CASE TWO:

Dr. Koch is a second-year resident in your internal medicine residency program. He is a 30-year-old male, who has returned from his international health elective in Uganda four months ago. He reports all his previous annual PPDs have been negative. This year he reports a 12mm induration reaction.

4. Should he have been screened?
5. Is this positive?
6. What are Dr. Koch’s chances of activation if left untreated given his age and PPD size?
7. What would be the next steps for Dr. Koch?
8. If we agree that Dr. Koch should be treated for latent TB infection, what are the specific treatment regimens?

CASE THREE:

Mrs. Ghon is Mrs. Potts' twin sister. She had a PPD placed by your colleague after hearing about the events at her sister's school. She heard your advice to her sister, so did not get the test read until now, a week later, as she noticed the area where the PPD was placed is very red. Mrs. G denies any symptoms and reports she also emigrated to the U.S. along with her sister and was given the BCG vaccine as an infant. She also cannot recall a prior PPD test.

9. Describe how to read a PPD. Is this test valid after being read so late? How does the BCG vaccine complicate your interpretation?

10. What is her chance of reactivation assuming no significant past medical history?

11. Should she be treated?

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Christopher Kwong is a current chief resident of the Yale Primary Care Internal Medicine Program. He went to medical school at Yale University and continued his residency as part of the Primary Care Internal Medicine Program. He looks forward to serving the community as a primary care doctor in the future.

Bill Rifkin attended SUNY/Stony Brook Medical School. He completed his training in Internal Medicine at Lenox Hill Hospital in New York. A specialist in inpatient medicine his research has focused on the examination of best practices in the care of the hospitalized patient. He also has focused on graduate medical education and is currently the Residency Program Director at Jacobi Medical Center in New York City.