Primum non nocere

A case of latent tuberculosis infection

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Latent Tuberculosis Treatment

- Effective
  - Reduces TB morbidity and mortality
  - Reduces health care costs
  - Important for TB control in low incidence countries
- Recommended for people at increased risk of developing active disease

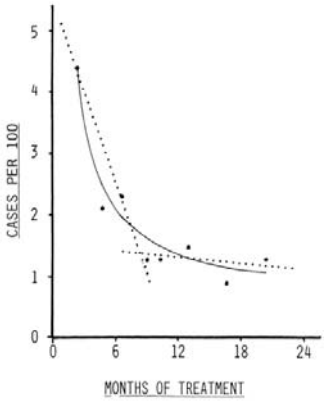
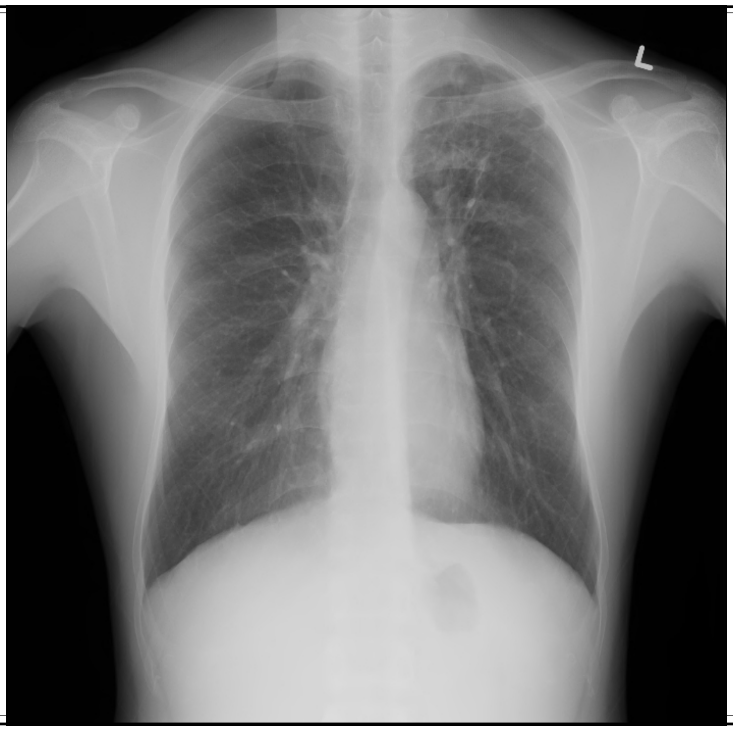


Figure Tuberculosis case rates (%) in the Bethel Isoniazid Studies population according to the number of months isoniazid was taken in the combined programs. Dots represent observed values; thin line, the calculated curve ($y = a + b/x$); and dotted lines, the calculated values based on the first four and last five observations ($y = a + bx$).

Comstock, et al. A controlled trial of community-wide INH prophylaxis in Alaska. Am Rev Resp Dis 1967

Case

- A 33 year old recently landed immigrant is referred because of an abnormal chest film



Case

- Question 1: Does this patient have LTBI?
- Question 2: Should he be offered treatment for LTBI?

Case

- Asymptomatic
- Born in Morocco -> Montréal 2009
- Non-smoker, no alcohol
- No medications
- No personal history of TB, no close contacts
- No immune-deficiencies
- No diabetes, renal disease, cancer
- Normal BMI, normal chest exam, + BCG scar
- No previous TST, no previous CXR

Case

- Question 1: Does this patient have LTBI?
  - Additional information required:
    - Rule out active TB: Obtain 3 sputum samples for mycobacteria
    - Determine timing of BCG -> BCG Atlas
    - Perform tuberculin skin test -> 13mm

http://www.bcgatlas.org/

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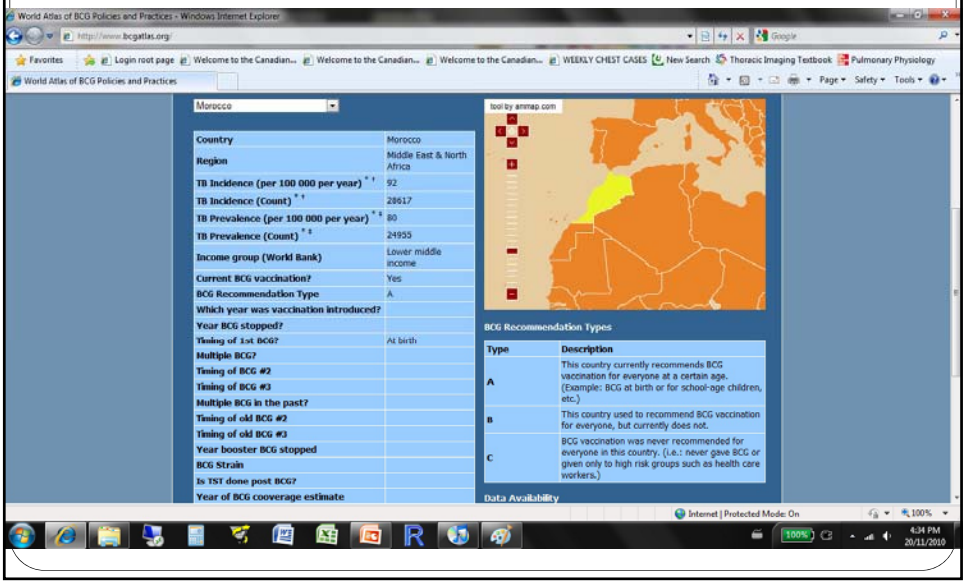
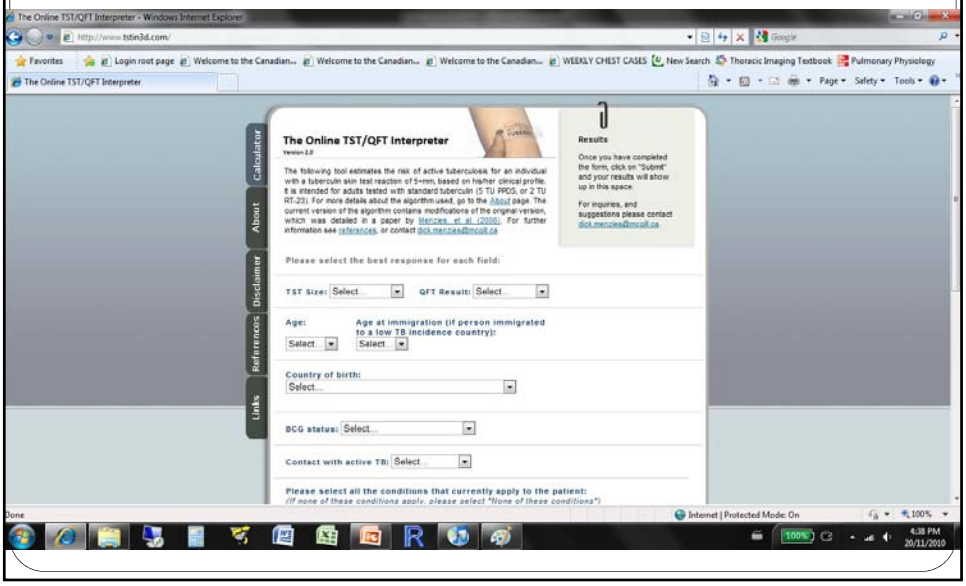


http://www.tstin3d.com/



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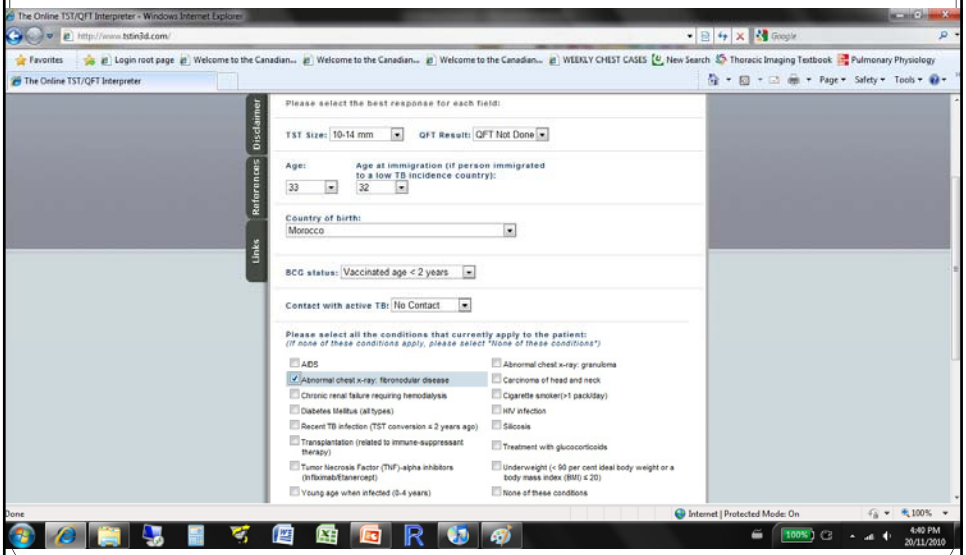

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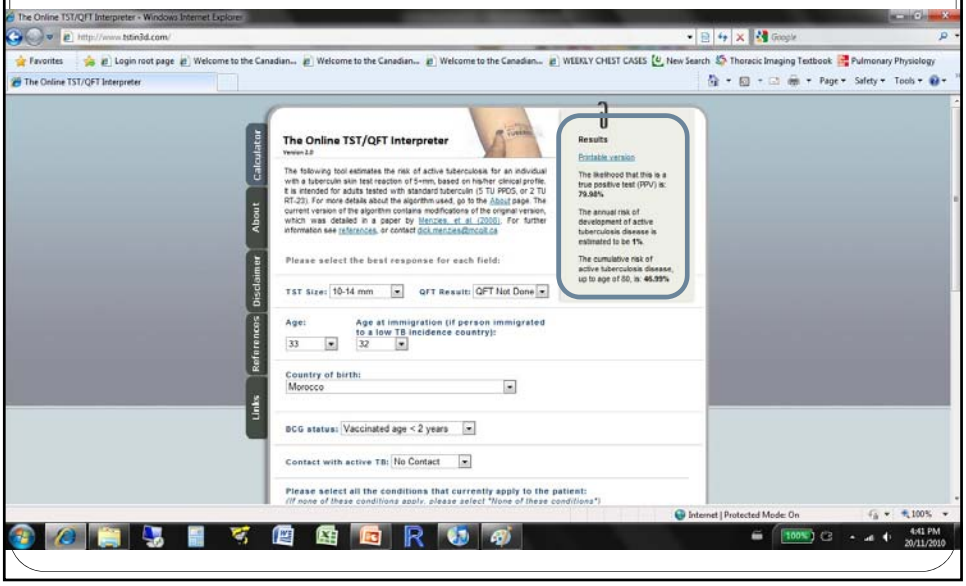

Case

- Question 1: Does this patient have LTBI?
  - Given the clinical information and the TST result, his probability of being infected with TB is 80%
  - Given the clinical information, his lifetime risk of developing active TB is 47%

Case

- Question 2: Should he be offered treatment for LTBI?
  - Patient is healthy
  - Commitment of up to 9 months of therapy
  - Potential for serious adverse events
    - Hepatitis, liver failure
    - Drug interactions
    - Nausea, vomiting
    - Rash, fever

Case

- Patient provided 3 sputum samples: negative for TB
- No history of liver disease, no alcohol use

- Started on INH therapy August 30, 2010
- At 1 month follow-up: feeling well, compliant

Case

- After 7 weeks of therapy: wife calls because of nausea x 1 week
- Blood tests:

Date (2010)	Aug 30	Sept 27	Oct 27
Total Bilirubin	14	14	111*
ALT	22	40	1966*
ALP	131	117	274*
INR			1.66*

INH-Hepatitis

- Most common serious complication of INH-therapy
- Overall incidence 1 in 1000 persons treated
- Alcohol and age-related increase in risk
- Fatalities and fulminant failure requiring transplant have been reported
- Informing patients of symptoms essential
- Baseline liver testing recommended
- Serial measurements recommended in those with underlying liver disease, hepatotoxins, symptoms

Take home points

- LTBI therapy is effective but has risk of serious adverse events
- Before testing someone for LTBI, consider their risk of developing active disease
- Risk:benefit of LTBI therapy ≠ Risk:benefit of active therapy
- Websites such as TSTin3d and BCGatlas can help inform your decision to treat someone for LTBI
- A well-informed patient and health care team is the best means of preventing irreversible harm