Tuberculosis and INH Treatment

TB (tuberculosis) is a serious illness that most commonly affects the lungs, but can involve any major organ system. The cause is a bacteria, Mycobacterium tuberculosis. Eight million new cases of TB occur each year worldwide. The previous progressive decline in TB cases in the United States has ended. New York City is one of the areas of the world with a swiftly rising TB rate.

Symptoms
Symptoms of the active disease include:
- Fatigue
- Weight loss
- Fever and sweats, particularly night sweats
- A productive, sometimes bloody, cough.

If your need is urgent, and the student health service is closed, go to the nearest hospital emergency department or call 911 for an ambulance.

How do you become infected with TB?
TB bacteria are sprayed into the air in tiny moisture droplets when someone with active TB of the lung or larynx laughs, coughs, sneezes, speaks, or sings. If someone else inhales these infectious droplets, the bacteria can settle in the lungs where they begin to multiply.

In healthy people, as the germs increase in number and spread out from the lungs, the person's immune system recognizes the infection and mounts a response to prevent this infection from making them sick. Later on (can be just months or many years), if a person who has been infected with TB suffers a change in health and the body's immune defenses are damaged, the TB germs can once again multiply and make the person sick. This TB infection has now become TB disease. This occurs in roughly 10% of infected people.

Who is at particular risk of TB infection?
For many reasons, some groups of people are at higher risk to get active TB disease. The groups that are at high risk include people:
- With HIV infection
- In close contact with those known to be infectious with TB disease
- From countries with high TB rates
- With medical conditions that make the body less able to protect itself from disease (for example: people with diabetes, people taking medications that inhibit the immune system such as long term use of corticosteroids, and people with chronic lung disease)
- Living in overcrowded spaces
- Who don't receive regular health care
- Who abuse drugs and/or alcohol
- Who work or are residents of long-term care facilities such as prisons, nursing homes, and hospitals.

How do you check for TB infection?
The most reliable test for TB is a skin test called a Mantoux PPD test. To perform this, a small amount of a protein called tuberculin is injected under the skin, usually of the forearm. (This injection is not an immunization to prevent TB infection and it does not cause TB). Two or three days later a health care worker checks the arm to see if a bump has developed and measures the size of the bump. If the bump is of a certain size, the test is "positive."

A positive test indicates past infection with TB, but not necessarily active TB disease. A chest X-ray will then be done to determine if active lung disease is present. Other tests may be done if TB disease is suspected to be present in other parts of the body (such as the kidneys or bones.) If the chest X-ray is normal, that means that the TB bacteria is not actively causing disease and the person is not infectious to other people at this time.

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In healthy people who have been infected with TB, 5% will develop TB disease during the first two years after infection, and an additional 5% will develop TB during the remainder of their lifetime.

If you have had a previous positive PPD, please tell the health care worker prior to having the test repeated.

What about BCG vaccination?
BCG is given in some countries, but not generally in the United States, to improve the body’s immune response to TB exposure. The BCG vaccine can only cause a person to have a positive PPD for up to two years after vaccination and does not usually cause a significant PPD reaction.

What if the PPD is positive?
A positive PPD means that there has been infection with TB, but is not an indication of active, infectious TB disease. A chest X-ray will be done to determine if there is disease in the lungs. A healthy person with a positive skin test, a negative (clear) chest X-ray, and no symptoms is not contagious. However, there is still a 10% lifetime chance of developing active TB disease. For this reason, it is recommended that people in this situation take an anti-tuberculosis medication - isoniazid (INH) - for 9 months to significantly reduce their risk of developing TB disease, particularly if the exposure to TB is known to have been within 2 years.

What is preventive INH therapy?
Isoniazid (INH) is an anti-tuberculosis medication which when taken orally once a day for 9 months can significantly reduce the rate of later development of active TB disease. Prior to starting INH, all patients with a positive PPD, undergo an individual health history review and physical exam. The health care provider is particularly interested in identifying if a person has any history of drug allergies, liver or kidney disease, alcohol use, diabetes, seizure disorders (convulsions, fits, or epilepsy), prior TB treatment, is taking or has taken any prescription or over-the-counter medications, or other medical conditions. Blood tests of liver function may be indicated.

If prophylactic TB treatment is recommended, then a daily dose of INH will be prescribed for 9 months (if the chest X-ray is clear). The individual will be seen at monthly intervals to check for any signs of problems. It is very important that INH be taken daily and for the full course of treatment to adequately kill the TB bacteria and to prevent development of resistant strains of TB.

What possible side effects are there for INH?
In some people, INH can irritate the liver, but this is rare under age 35. Symptoms that may be related to liver problems include: fever, fatigue, weakness, loss of appetite, yellow skin or eyes, nausea/vomiting, dark tea-colored urine, rash/itching, light colored bowel movements. If any of these occur, they should be reported to the health care provider immediately, and he or she may advise you to stop the medication.

Certain foods such as fish (tuna, skipjack, and sardines) or cheese (Swiss and Cheshire) have caused reactions in some people while taking INH. This may present as redness or itching of the skin, hot flashes, rapid heartbeat, sweating, chills or lightheadedness and should be reported.

Less common side effects include: blurred or loss of vision (with or without eye pain) and unsteadiness and numbness, tingling, or pain in the hands or feet. Your healthcare provider may prescribe pyridoxine (vitamin B6) to be taken with the INH as a preventive measure for certain people who are at higher risk for some of these side effects.

Do NOT drink alcohol while taking INH. Liver problems are more likely to occur and the medicine may not work.

Any reaction that may possibly be related to the use of INH should be reported immediately.

How is active TB disease treated?
Active disease requires treatment to prevent progressive illness and death. Hospitalization may be brief or
not at all depending on the situation. Multiple medications must be used. If these medications are taken incorrectly or discontinued prematurely, the patient may become sick again and infect others. The TB may become more difficult to treat this second time because it has become drug resistant. Multi-drug resistant TB is very dangerous, so it is very important that the medications are taken correctly.