

Tuberculosis

Tuberculosis is an illness caused by bacteria called *Mycobacterium tuberculosis* (M.Tb). It can be transmitted when somebody who suffers from pulmonary tuberculosis coughs, causing the bacteria to be expelled.

People infected by M.Tb were generally exposed to it once during childhood, although people can become infected at any time of their life.

Often M.Tb causes the disease immediately after the initial exposure - this is known as primary TB but, generally, a healthy immune system can prevent M.Tb from causing the disease. Nevertheless, the organisms remain in the lungs and in some cases they can cause the disease years later - this is known as reactivation of TB.

People with VIH run a greater risk of developing primary TB when exposed to it for the first time, and the weakness of the immune system makes reactivation of TB more probable.

TB mostly affects the lungs, causing symptoms such as difficulty in breathing, coughs, weight loss, weakness and fever. The bacteria can spread to other parts of the body, causing many different symptoms. TB is a potentially fatal disease.

Recently in Spain, the numbers of cases of tuberculosis in immigrant populations has been increasing considerably and annually 10,000 cases of TB, about 25 cases per 100,000 inhabitants, are being registered. The main cause of this disease in Spain is AIDS. In addition, the proportion of immigrants with TB in relation to the total number of cases of TB is around 10% and in the main cities around 30%.

Prevention of TB

For HIV negative patients there is a vaccine for the most common strain of TB called BCG vaccine (Calmette-Guérin bovine bacillus), although its effectiveness seems to vary in different populations. The application of this vaccine in people with HIV is not recommended, as it can cause a disease similar to TB.

It is important to avoid contact with people who have active pulmonary TB until they are in a non-infectious state. If you have had contact with a person with TB, you should go to your doctor as soon as possible.

Some doctors recommend that if a person with HIV has already been exposed to TB and has indirectly been infected, they

should initiate a treatment using isoniazida. This drug facilitates the reduction of the risk of developing active tuberculosis.

TB Tests

Doctors use the well-known PPD skin test to show whether someone has been exposed to M.Tb. A positive result of the test means that you have been exposed to the organisms, although it is possible that they are not active and so may not be the cause of the disease. Nevertheless, some people with HIV do not respond to PPD skin tests due to immune system damage. If you have previously been immunized for M.Tb with BCG you may give a positive result to the PPD test, even if you have not been exposed to M.Tb.

To diagnose active pulmonary TB it is necessary to do physical exploration tests such as x-rays of the thorax, the phlegm test, and, sometimes, the optical fibre pulmonary bronchoscopy. In order to diagnose TB in other parts of the body tests may be carried out on samples of, for example, lymph node or tissue.

Treatment of TB

Active TB is treated with a combination of antibiotics. In general, for the treatment to be effective it must be taken for at least six months, without missing a dose, and by using drugs that the body responds to. As with HIV, TB organisms can develop resistance to drugs and treatment and some strands are resistant to different types of drugs.

These strands can cause a very serious disease called Tuberculosis Multi-resistant to Drugs (TB-MRF), which can be transmitted to other people. TB-MRF can generally be treated after identifying what drugs the body responds to. Protease inhibitors (IP) can interact with some drugs used to treat TB, although alternative drugs for TB treatment exist. IP could also be suspended until the treatment against TB has been completed.

In developing countries, doctors often use a well-known form of treatment called Directly Observed Therapy (DOT, its initials in English), for short-term treatment. Volunteers or health professionals are present at every dose to make sure that no dose is skipped and to maximize their effectiveness.