TUBERCULOSIS

WHAT IS TUBERCULOSIS?

Tuberculosis (TB), an infectious disease caused by the bacterium *Mycobacterium tuberculosis*, causes more fatalities worldwide than any other single infectious agent and affects all age groups.

While the overall incidence of TB is falling, it remains a common infection in many, mainly developing parts of the world – in 2018, there were 10 million TB cases reported globally. However there is a latent form of the infection which is more common. In latent TB, a person is infected with TB bacteria but they do not feel sick or have symptoms; their immune system keeps the infection in check, preventing clinical TB disease. Those groups with the greatest risk of progression to active TB disease are infants, the elderly and those with underlying health issues such as HIV, chronic kidney disease or poorly controlled diabetes.

Airborne droplets resulting from an infected person coughing or sneezing spread the disease. TB usually infects the lungs (pulmonary TB), however it can attack almost any human organ (extrapulmonary) and the presenting symptoms reflect the part of the body affected: feeling sick or weak, weight loss, fever and night sweats, productive cough, chest pain and coughing up blood.

Two serious complications of TB disease are miliary TB and TB meningitis, where the bacteria have travelled from the lungs to other parts of the body such as the bone marrow, liver, spine, the lining of the heart and brain. These complications had previously been more common in young children however the incidence among adults has risen due to HIV and more people living with immunocompromise.

RISK TO TRAVELLERS

Although TB is harder to catch than the common cold, it can result from extended exposure to an infected person, usually in a confined space such as a classroom, hospital, train carriage or bus. There have even been several cases of transmission on aircraft. TB can also be transmitted through unpasteurised milk or milk products.

Even travellers going to countries with a high incidence of TB (40+ cases per 100,000 population) have a low risk of being infected with TB, however those who anticipate possible prolonged close exposure to local people (such as expatriates working in a hospital, classroom or some other confined space; or budget travellers using buses, trains or local aircraft extensively) especially in high-risk countries, should assess the risk of TB.

In 2018, eight countries reported 87 percent of TB disease - India, China, Indonesia, Philippines, Pakistan, Nigeria, Bangladesh and South Africa.

Vaccination may be recommended, especially for children under 5 years of age. A tuberculin skin test (TST) is performed first for any individual over the age of 6 months and is used to determine if a person is infected with the bacteria, not if they have TB disease. For the skin test, a small amount of fluid called tuberculin is injected under the skin in the lower part of the arm. Two or three days later, the arm is inspected for a reaction.

The TST may also be appropriate for any travellers whose potential exposure is likely to be significant. If the test is negative, the test should be repeated on the traveller's return from overseas to determine if there has been any exposure during travel – a positive tuberculin reaction. An alternate blood test for exposure to TB is available through your medical practitioner.

Because people with human immunodeficiency virus (HIV) infection are more likely to have an impaired response to the tuberculin skin test, travellers with HIV infection should be advised to inform their travel health physician about their HIV status. Except for travellers with impaired immunity, travellers who already have a positive tuberculin reaction are unlikely to be reinfected.

HOW IS TUBERCULOSIS TREATED?

TB is usually curable with antibiotics, often comprising a treatment therapy of many months. The drugs should be taken exactly as prescribed: stopping too soon or taking drugs incorrectly may result in surviving bacteria becoming resistant to those drugs.

Drug-resistant TB has emerged and is widespread. Two forms - multidrug (MDR) and extensively drug-resistant (XDR) do not respond to many of the available drugs, reducing the options for a successful treatment regime.

Early detection is vital so returning travellers who suspect TB exposure should receive appropriate medical evaluation.

WHAT IS TUBERCULOSIS VACCINATION?

Type:

- Injectable live attenuated vaccine – Bacille Calmette–Guérin (BCG)

SCHEDULE

In Australia, the BCG vaccine is given as a single dose administered by intradermal injection.

The greatest benefit of BCG vaccination is in children (particularly aged <5 years) who will be travelling for an extended period in high risk areas, due to their elevated risk of TB complications (miliary TB and meningeal TB). It is recommended they receive the vaccine at least 3 months before departure.

Vaccination is not usually recommended for older children and adults, even when planning travel to high-risk countries, as there is little evidence of vaccine efficacy in those age groups.

NB: As this is a live vaccine, it is not suitable for the following groups: pregnant women and immunocompromised people.

Booster doses are not generally recommended.

LEVEL OF PROTECTION

BCG vaccination in children provides:

- around 25% protection against tuberculosis infection
- around 70% protection against active tuberculosis
- around 55% protection against progression from infection to active disease

BCG vaccination in infants provides greater than 70% protection against severe forms of tuberculosis disease in young children. This includes miliary tuberculosis and tuberculosis meningitis.

In adults:

The efficacy of BCG vaccine against pulmonary disease in adults is less consistent, and has ranged from no protection to 80% in controlled trials.

POSSIBLE SIDE EFFECTS

Uncommon and generally mild.

- Fever, headache, swollen glands, keloid scar, bone inflammation, abscess.

TREATMENT

TB is usually curable with antibiotics, however multidrug (MDR) and extensively drug-resistant (XDR) forms have developed. Early detection is important. If a returned traveller had a positive test, consideration should be given to the possibility of drug resistance. Travellers who suspect TB exposure should receive appropriate medical evaluation.

Drug therapy of 6 to 12 months can cure TB disease. The drugs should be taken exactly as prescribed: stopping too soon or taking drugs incorrectly may result in surviving bacteria becoming resistant to those drugs. Drug-resistant TB may be more difficult to treat.

References:

- WHO Tuberculosis factsheet: https://www.who.int/news-room/fact-sheets/detail/tuberculosis
- Australian Immunisation Handbook, Tuberculosis: https://immunisationhandbook.health.gov.au/vaccine-preventable-diseases/tuberculosis
- NSW Health: List of countries with a tuberculosis incidence of 40 cases per 100,000 persons or greater https://www.health.nsw.gov.au/Infectious/tuberculosis/Pages/high-incidence-countries.aspx

FAQS

More information on Tuberculosis is available during your pre-travel consultation with Travelvax.
Call 1300 360 164 for the location of the clinic nearest to you.