Patients who are under treatment for tuberculosis (TB) may tell you that they intend to travel overseas, or may make travel arrangements without consulting their treating physician. Nearly 80 per cent of new TB cases seen in Victoria are in foreign born persons, so there is a high probability of airline travel in a patient during six to twelve months of TB treatment. Issues of concern are the risk of transmission of TB to other passengers, and as continuity of anti-TB treatment for the patient.

Risk of TB transmission

There have been several documented cases of patients with pulmonary TB travelling on airlines, some of which have demonstrated transmission of TB to susceptible passengers and flight crew, and some of which have failed to demonstrate transmission. The degree of risk of transmission of TB depends on a number of factors, outlined below.

The characteristics of the index case

Pulmonary and laryngeal TB are infectious, whereas extrapulmonary TB (such as lymph node, genitourinary, bone or meningeal TB) carries negligible risk of transmission. In addition, the level of infectivity of a case of pulmonary TB is determined by whether the sputum is culture positive, whether the sputum is smear positive, the degree of smear positivity (indicating bacterial load) and whether a cavity is present on chest radiograph (CXR). Culture positive, smear positive, cavitating pulmonary disease is highly infectious.

The following score for infectivity can be used to classify cases:

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Negligible infectivity - Extrapulmonary disease</td>
</tr>
<tr>
<td>1</td>
<td>Low infectivity - Smear and culture negative pulmonary disease</td>
</tr>
<tr>
<td>2</td>
<td>Medium infectivity - Smear negative, culture positive pulmonary disease</td>
</tr>
<tr>
<td>3</td>
<td>High infectivity - Smear positive, culture positive pulmonary disease or culture positive laryngeal disease</td>
</tr>
</tbody>
</table>

An infectious case of active TB is defined as a case scoring 1 or more, and a non-infectious case as one scoring 0.

In general, a patient with pulmonary TB who complies with therapy and does not have drug resistant disease should become non-infectious after two weeks of appropriate anti-tuberculous therapy.
The degree of contact with the case

People in casual contact with infectious patients are at low risk. Continuous, close contact (such as living in the same household) is associated with high risk. Therefore a long flight poses more risk than a short flight, and a flight of more than six hours duration is associated with increased risk. There is also evidence that the risk of transmission is related to proximity to the infectious case, rather than to aircraft ventilation systems.

Continuity of treatment

Interruption to, or discontinuation of, anti-tuberculous treatment increases the risk of treatment failure, relapse and secondary drug resistance. It also increases the risk of transmission.

Persons on anti-TB medication, if declared a low infection risk, should be assessed as fit to travel and clinically stable. If found to be stable, the patient should have an adequate supply of anti-tuberculous medication. Arrangements should also be made for overseas follow-up, if possible. The TB program has a list of suitable medical contacts for many countries.

Recommendations

Infection risk and fitness to travel

A patient with pulmonary TB should have at least two weeks of effective anti-tuberculous treatment and three consecutive negative sputum smears (performed on separate days) before being allowed to fly or be placed in a closed environment conducive to transmission of TB. A negative culture makes the risk of transmission negligible.

Patients with extra-pulmonary TB carry negligible risk of infectivity, but should also be commenced on effective anti-tuberculous treatment before travelling.

Continuation of therapy

Patient compliance and commitment to therapy should be assessed, and patients who are at risk of non-compliance should be discouraged from travelling, especially early in their course of treatment. Patient education and counselling is important to ensure maximal compliance.

If a patient advises you that they intend to travel, notify the TB program to ensure an adequate supply of medications and follow-up if necessary. The TB program will work together with you to ensure maximal continuation of care.

What to do if a patient informs you that they intend to travel

The decision to allow a patient on anti-tuberculous treatment to travel should be made on an individual basis, and should be discussed with the TB program of the Department of Health. Where possible, alternative and private means of travel should be organised.

The patient should be encouraged to postpone travel plans until treatment is completed, if possible, or at the least, until one month of treatment has been successfully completed. The risk of infectivity can be assessed by the criteria set out above. The summary checklist on the following page may also be useful.

It is especially important that the TB program be contacted to ensure continuation of therapy. If you have a patient on anti-tuberculous treatment who has indicated plans to travel overseas, contact the TB program on 1300 651 160 to ensure appropriate medication supplies and follow up.
Flowchart - should the patient travel?

Is the risk of infection to other passengers and crew negligible?

- Yes
  - Ensure 3x negative sputum before allowing travel
- No
  - Is the patients clinical condition stable?
    - Yes
      - Drug side effects • Compliance • Drug sensitivity
      - Ensure patient clinically stable before allowing travel
    - No
      - Is a continuous supply of medication ensured?
        - Yes
          - Is the TB program aware of the patients travel plans?
            - Yes
              - Contact TB program and ensure continuous supply of medication
            - No
              - Is medical supervision organised overseas?
                - Yes
                  - Organise necessary supervision and follow up
                - No
                  - Patient may travel

Recommended reading


