

Considerations for Patients with Tuberculosis in Dental Settings

Tuberculosis (TB) is one of the major infectious diseases in the world. It's caused by the bacterium *Mycobacterium Tuberculosis* and most commonly affects the lung.

Clinical Presentations:

Primary TB may only be presented by positive tuberculin skin test and chest radiographic findings. When the host immunity decreased for any reason, clinical symptom starts to develop. Those symptoms can include cough, malaise, unexplained weight loss, night sweats and fever. Coughing is specific for pulmonary TB. In the beginning, the associated sputum is scanty and thick and then it progress to thin consistency. The productive cough may be associated with blood (Haemoptysis) in some cases.

Within the oral cavity, TB can be associated with painful, chronic, shallow ulceration with rolled margin. The ulceration mostly affects the dorsum of the tongue; however other sites can also be involved within the oral cavity. The chronic ulceration might also be associated with cervical lymphadenopathy.



Figure 1 Variations in intraoral manifestation of TB ulceration.
(Right) Dorsum of the tongue, (Left) buccal mucosa.

Dental Management:

“Many patients with infectious disease, including TB, cannot be clinically or historically identified; therefore, all patients should be treated as though they are potentially infectious, and standard precautions for infection control should be strictly followed.” (Little *et.al.*, 2012).

The decision for dental setting and the relating considerations is dependent on the current status of the patient. This can be one of the following categories:

1. Patients with clinically active sputum-positive TB.
2. Patients with a past history of TB.
3. Patients with a positive Tuberculin Test.
4. Patients with signs or symptoms suggestive of TB.

Patients with clinically active sputum-positive TB

Patients fall into this category can only be treated in hospital setting with appropriate isolation (Mask, gloves and gown) and the room should be equipped with special ventilation systems and the treatment should be limited to emergency treatment only.

The patient might change to non-infectious stage if he/she starts the appropriate drug intervention for minimum of 3 weeks and after consultation with supervising physician about the current status of the patient. Such patients might be safe to be treated as an outpatient in similar manner to normal health individual. Furthermore, most children with pulmonary TB are considered non-infectious and can be treated as an outpatient in most instances.

Patients with a past history of TB

Relapse of TB is rare, proving that the patient is immune-competent and had received adequate therapy. Consultation with physician is required to establish the current status of the patient and history taking should identify the duration of treatment and any questionable sign and symptom. Treatment duration of less than 18 months (for previous regimes of anti-tuberculosis medications) or less than 6 months (for more recent regimes) do require consultation with physician. The patient who is immune-competent and had

received adequate therapy can be treated as an outpatient with standard infection control policy.

Patients with a positive Tuberculin Test

Patient within this category is considered to be infected with causative microorganisms and require consultation with physician to be evaluated for active disease. In case the disease is inactive with no clinical manifestation the patient is considered as having latent tuberculosis and can be treated as an outpatient with standard infection control policy.

Patients with signs or symptoms suggestive of TB

If the patient presented to healthcare provider with unexplained sign and symptom suggestive of TB infection, then dental care should not be provided until consultation with physician is obtained to determine health status of the patient.

Drug interaction between anti-tuberculosis medication and drugs commonly used in dentistry:

- Aspirin increase ototoxicity of streptomycin; therefore there concomitant administration should be avoided.
- Isoniazid increase hepatotoxicity of paracetamol; therefore there concomitant administration should be avoided.

Note: Rifampin can cause leukopenia, haemolytic anaemia, and thrombocytopenia, resulting in an increased incidence of infection, delayed healing and gingival bleeding.

References:

LITTLE, J. W., FALACE, D., MILLER, C. & RHODUS, N. L. 2012. *Dental Management of the Medically Compromised Patient - E-Book*, Elsevier Health Sciences.