



CONTACT TRACING AND MANAGEMENT

URC

Overview

- Introduction
- Risk evaluation
- Factors to consider
- Managing asymptomatic contacts
- Managing symptomatic contacts

Introduction

- Close contacts of M(X)DR-TB patients are people living in the same household, or spending many hours a day with the patient in the same indoor space
- In Peru, families with many MDR-TB cases have been identified
- Close contacts of M(X)DR-TB do get the disease but further analysis reveals that resistance patterns may be different between the contact and the patient

Risk evaluation of M(X)DR-TB contacts

- Factors to be considered in the management of contacts include:
 1. Likelihood of infection with M(X)DR-TB in contacts thought to be newly infected
 2. Likelihood that the contact, if infected, will develop active M(X)DR-TB

Risk evaluation

- Contacts exposed to M(X)DR-TB patients and who are likely to be newly infected should be evaluated to assess the likelihood of the actual infection being an M(X)DR-TB strain of *M. tuberculosis*

Factors to be considered

- Infectiousness of the M(X)DR-TB source case
- Closeness and intensity of the exposure
- Likelihood of exposure to persons with drug-susceptible TB

Infectiousness

- Patients who are coughing productively and have smear-positive sputum are more infectious than those who do not cough or have smear-negative sputum

Closeness and intensity of MDR-TB exposure

- Sharing air space e.g. living in the same household or sharing a hospital ward with a confirmed MDR-TB case is regarded as higher risk
- Exposure in small, enclosed, poorly ventilated space is more likely to result in transmission than a large, well-ventilated space
- Exposure during cough-inducing procedures has very high risk

Contact history

- Persons exposed to several sources of M. tuberculosis, including infectious TB patients with drug-susceptible TB strains, are less likely to become infected with an M(X)DR-TB case
- Children, especially those under 2 are at increased risk

Contact history (2)

- Impaired immunity is the most important that will determine whether the person infected develops active disease or not
- Medical causes of impaired immunity include:
 1. Malnutrition
 2. Diabetes mellitus
 3. Renal/Endocrine/certain haematological conditions
 4. HIV

Contact history (3)

- Patients receiving immunosuppressive drugs such as steroids, anti-cancer chemotherapy or radiotherapy may also be at increased risk

Managing asymptomatic contacts of MDR-TB patients

- Universal use of second-line drugs for prevention in MDR-TB contacts not recommended
- Asymptomatic contacts of smear-negative MDR-TB patients should be managed according to standard recommendations for contacts of drug-susceptible TB patients

What is a contact investigation?

- Identification of index case
- Evaluating children for LTBI and TB disease (Involve Paediatrician or Experienced Doctor if necessary)
- Evaluating adults/family members for TB disease
- Recording

Steps into a contact investigation

- Patient interview
- Record review
- Field investigation
- Risk assessment for *M. tuberculosis* transmission
- Prioritization of contacts
- Treatment and follow-up contacts

Managing asymptomatic contacts of MDR-TB patients (2)

- Asymptomatic contacts of smear-positive MDR-TB cases should be identified and screened
- Children contacts aged 5 or less should be considered for INH preventive therapy
- Children older than 5 and adults: strongly reactive tuberculin test indicates infection but not necessarily disease
- Decision to start IPT depends on clinical history, examination and investigation

Managing asymptomatic contacts of MDR-TB patients (3)

- Contacts of MDR-TB patients should be observed, assessment required if they have TB symptoms
- Sputum to be tested for smear, culture and DST
- CXR is necessary
- HIV individuals to be watched closely

Managing symptomatic adults who are contacts of M(X)DR-TB patients

- All symptomatic close contacts of M(X)DR-TB need to be examined immediately
- Laboratory tests to be done: Sputum smear, TB culture and DST if active disease suspected
- While waiting for DST results: an empiric regimen based on index case resistance pattern or common resistance pattern in the community if data available (This is an acceptable practice by WHO standard but **NOT RECOMMENDED** by the RSA MDR-TB Guidelines)

Managing symptomatic adults who are contacts of M(X)DR-TB patients (2)

- If TB tests are negative, a trial of broad-spectrum antibiotic that is not active against TB such as cotrimoxazol may be used
- If patient remain symptomatic: Lungs scan may be done, bronchoscopy may be considered (for smear and culture)
- Clinical examinations and TB smear, TB culture and CXR may also be repeated
- Referral to a specialized centre is also an option

Managing symptomatic children who are contacts of M(X)DR-TB patients

- M(X)DR-TB should be suspected in the following situations:
 1. Children who are contacts of a confirmed M(X)DR-TB patient
 2. Children who are contacts of patients who died of tuberculosis while on treatment and there is a reason to suspect it was M(X)DR-TB
 3. Children with bacteriologically proven TB that are not responding to first-line drugs given under DOT

Managing symptomatic children who are contacts of M(X)DR-TB patients (2)

- TB diagnosis is a challenge in children (non-specific symptoms, inability to produce sputum, paucibacillary nature of paediatric TB, increased likelihood of extra-pulmonary TB in children)
- Effort needed to make laboratory diagnosis, although it is often not possible

Managing symptomatic children who are contacts of M(X)DR-TB patients (3)

- Symptomatic paediatric household contacts of M(X)DR-TB patients should receive:
 1. Medical evaluation, incl. hx and physical examination
 2. Skin testing with tuberculin purified protein derivative (PPD)
 3. CXR, CT
 4. TB culture and DST (sputum induction with chest percussion or gastric aspiration may be performed)

Managing symptomatic children who are contacts of M(X)DR-TB patients (4)

- If PPD > 5 mm but symptomatic child has negative TB tests/normal CXR, broad-spectrum antibiotics may be used e.g. cotrimoxazole
- Close follow up of the child is necessary
- Physical examination and tests may be repeated
- **There is room for empiric therapy** (based on the resistance pattern of the index case or the commonest pattern in the community) if all tests are negative, patients clinical condition remains highly suggestive of TB or progressively worsens