TREATMENT OF TUBERCULOSIS

ABOUT TUBERCULOSIS

What is TB?

Tuberculosis (TB) is a disease caused by Mycobacterium tuberculosis. TB most often affects the lungs (pulmonary TB), but it can also affect other organs (extrapulmonary TB). When a person develops active TB, the symptoms (cough, fever, night sweats, weight loss etc.) may be mild and unspecific for many months.

How is TB spread?

TB is spread from person to person through the air. When people with active pulmonary TB cough, sneeze or spit, they need to inhale only a few of these germs to become infected.

Prevention of TB

A major part of the prevention of TB is to stop the spread of the bacteria from one adult to another. This is done by firstly finding the adults who have TB, then providing them with effective treatment means that they will no longer infect others and they will also recover from being sick.

Essential 1st-Line Antituberculosis Drugs

Drug

Administration

Contraindication

Adverse effects

Isoniazid

- Normally taken orally
- but may be administered intramuscularly or intrathecally to critically ill patients

- Known hypersensitivity to isoniazid

- Active, unstable hepatic disease

- (with jaundice)

- Generally well tolerated at recommended doses

- Adverse cutaneous or cutaneous hypersensitivity reactions occasionally occur during the first weeks of treatment

- Liver and sometimes fatal hepatic toxicity associated with isoniazid therapy has been reported and may occur or may develop even after many months of treatment.

- Risk of developing hepatitis is age related.

- Sleepiness or lethargy can be managed by reassurance or adjustment of the timing or duration of the treatment

Rifampicin

- Should preferably be given immediately after injection

- Should preferably be given intramuscularly or intrathecally with other effective drugs

- Available for intramuscular administration in critically patients

- Known hypersensitivity to Rifampicin

- Active, unstable hepatic disease

- (with jaundice)

- - Rifampicin has been shown to produce liver dysfunction

- - May cause gastrointestinal reactions (abdominal pain, nausea, vomiting) and pruritus with or without rash

- - Other adverse effects (fever, influenza-like syndrome and hepatitis) are more likely to occur

- - Dose-dependent optic neuritis can result in partial or both eyes. Early changes are usually reversible, but if treatment is continued, permanent damage can occur

- - Other adverse effects include gastrointestinal reactions, arthralgia and, very rarely, hepatitis

Pyrazinamide

- Administered orally

- Known hypersensitivity to Pyrazinamide

- Active, unstable hepatic disease

- (with jaundice)

- - Pyrazinamide may cause gastrointestinal intolerance

- - Hypersensitivity reactions are rare, but some patients may experience slight pricking of the skin

- - Pyrazinamide concentrations are common during the early phases of treatment

Streptomycin

- Must be administered by deep intramuscular injection

- It is also available for intramuscular administration in critically patients

- Known hypersensitivity to Streptomycin

- Active, unstable hepatic disease

- (with jaundice)

- - Vestibular disturbances (nausea, vomiting, and vertigo), paralysis of face, hand and foot, urticaria, angioedema and anaphylaxis, seizures are potentially life-threatening

- - Other adverse effects include incoherence, confusion, disorientation, dialysis, or delirium disorders can form at injection sites

- - Cataracts are also reported

- - Cutaneous hypersensitivity reactions can occur

Ethambutol

- Administered orally

- Known hypersensitivity to Ethambutol

- Pre-existing optic atrophy

- (from any cause)

- - Dose-dependent optic neuritis can result in impairment of visual acuity and colour vision in one or both eyes. Early changes are usually reversible, but if treatment is continued, permanent damage can occur

- - Other adverse effects include gastrointestinal reactions, arthralgia and, very rarely, hepatitis

About rifampicin- and MDR-TB:

Rifampicin

Rifampicin is a rifamycin antibiotic and is one of the most valuable anti-tuberculous agents available. It is very effective against all forms of the Mycobacterium tuberculosis. It is used in the treatment of primary and secondary forms of tuberculosis. Rifampicin is often used in combination with other antituberculous agents such as isoniazid and pyrazinamide.

In populations with known or suspected high levels of isoniazid resistance:

- Isoniazid + rifampicin

- Isoniazid + rifampicin + pyrazinamide

- Isoniazid + rifampicin + ethambutol

- 4 months

In settings where rapid molecular-based DST is available, the results should guide the choice of regimen

HIV/TUBERCULOSIS CO-INFECTION

The first priority for HIV-positive TB patients is to initiate TB treatment, followed by co-trimoxazole and ART

Recommended dosing frequency for new TB patients

In all patients with drug-susceptible pulmonary TB, daily dosing is recommended dosing frequency in both the intensive and continuation phases of therapy. Twice-weekly dosing should not be used.

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In settings where rapid molecular-based DST is available, the results should guide the choice of regimen

In patients who require TB retreatment, the 2HRZES/1HRZE/5HRE regimen should no longer be prescribed and DST should be conducted to inform the choice of treatment regimen

Recommended dosing frequency for previously treated TB patients

- ARV reduces TB rates by up to 90% at an individual level

- ART should be started in all TB patients living with HIV regardless of their CD4 cell count

- TB treatment should be initiated first, followed by ART as soon as possible within the first 8 weeks of treatment

- ART reduces TB rates by up to 90% at an individual level

- HIV-positive patients with profound immunosuppression (e.g., CD4 cell counts less than 50 cells/mm³) should receive ART within the first 2 weeks of initiation of TB treatment

- In HIV-positive patients with drug-susceptible pulmonary TB who are receiving ART during TB treatment, a 6-month standard treatment regimen is recommended over an extended treatment for 8 months or more

- TB drugs can have drug interactions with ARV drugs, and this should be checked individually in every case. You can check it on http://www.hiv-druginteractions.org/

Antiretroviral treatment (ART)

- Infection prevention for HIV-positive TB patients is to initiate TB treatment, followed by co-trimoxazole and ART

- The use of fixed dose formulation tablets is recommended over separate drug formulations in the treatment of patients

- In settings where rapid molecular-based DST is available, the results should guide the choice of regimen

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