

5.1. ANTI-TUBERCULAR DRUGS

5.1.1. Introduction

Tuberculosis (TB) is an infectious disease caused by various species of *Mycobacteria* such as *M. tuberculosis* and *M. bovis*. It spreads by droplets which get delivered from the patients of pulmonary or laryngeal TB during sneezing, coughing, singing, and talking. These droplets are smaller in size, so can remain in air for a few hours.

PAS (*p*-aminosalicylic acid) was the first chemotherapeutic agent discovered. Isoniazid, streptomycin, ethambutol, and rifampin were discovered later. Tuberculosis can be cured if the treatment is done on time.

M. avium complex (MAC) are the non-tuberculosis mycobacterial infections caused by *M. avium*, *M. kansasii*, *M. murinum*, and *M. scrofulaceum*. Newer agents like fluoroquinolones, amikacin, clarithromycin, azithromycin, or rifabutin are used for these organisms as they are resistant to the commonly used anti-tubercular drugs.

5.1.2. Classification

Anti-tubercular drugs are classified as follows:

1) First Line Drugs

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|-------------------------|----------------------|------------------------|
| i) Isoniazid (H), | ii) Rifampin (R), | iii) Pyrazinamide (Z), |
| iv) Ethambutol (E), and | v) Streptomycin (S). | |

2) Second Line Drugs

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|-------------------------|------------------------------------|-------------------------|
| i) Thiacetazone (Tzn), | ii) Paraaminosalicylic acid (PAS), | iii) Ethionamide (Etm), |
| iv) Cycloserine (Cys), | v) Kanamycin (Kmc), | vi) Amikacin (Am), and |
| vii) Capreomycin (Cpr). | | |

3) Newer Drugs

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|-----------------------|----------------|----------------------|
| i) Ciprofloxacin, | ii) Ofloxacin, | iii) Clarithromycin, |
| iv) Azithromycin, and | v) Rifabutin. | |

5.1.3. Individual Compounds

The following drugs are studied in detail:

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| 1) Isoniazid, | 2) Para-Aminosalicylic Acid (PAS), |
| 3) Streptomycin, | 4) Rifampicin, |
| 5) Ethambutol, | 6) Thiacetazone, |
| 7) Ethionamide, | 8) Cycloserine, and |
| 9) Pyrazinamide. | |