Antituberculosis drugs →

⇒ caused by several species of Mycobacteria ⇒ Mycobacterium tuberculosis, Myc. bovis,

⇒ Meningitis tuberculosis, Disseminated T.B, Pericardial T.B, spinal T.B, intestinal T.B, Genito-urinary T.B, Bilateral or extensive Pleurisy and smear +ve, -ve Pulmonary T.B.

DoTS → Directly observed Treatment short course.

BCG vaccine → Bacille calmette Guerine, a strain of bovine tubercular bacilus ∈ greatly attenuated virulance

⇒ M/TC → Non tuberculosis Mycobacterium tuberculosis. these infections are caused by organism such as Mycobo Kansasii, Myc. abitum, Myc. marinum and Mycobacterium scrofulaceum they are grped under the term Mycobacterium Avium Complex.

⇒ Myc. scrofulaceum causes cervical lymphadenitis (in children)

⇒ Myc. marinum causes skin disease.

Tuberculosis during Pregnancy → should be treated ∈ isoniazide, Rifampicin, pyrazinamide and Ethambutal together ∈ pyridoxin (B6) for 9 month but streptomycin should be damage 8th cranial nerve so the (cochlear damage) is possible.

classification drugs →

1. Standard category → (a) Bactericidal

isonicotinic acid Hydrazide (INH / H) / Isoniazide
Rifampicin (R), Streptomycin (S), Pyrizinamide (Z)

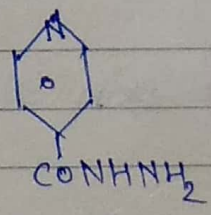
(b) Bacteriostatic → Ethambutol, Thiacetazole (T)

2. Reserved drugs → (a) Bactericidal :-

capreomycin (A)
Kenamycin, Amikacin
Fluroquinolones :- ofloxacin, levofloxacin
(inhibit Bacterial DNA Gyrase) ciprofloxacin.

(b) Bacteriostatic :- Ethionamide (Et), cycloserine (C)
clofazimine (also used as antileprotic agent)

isoniazide →



M.O.A → inhibits synthesis of mycholic acid which are unique fatty acids of cell wall.
A gene ~~INH~~ inh-A, which encoded for a fatty acid synthesis Enz is target of INH drug.

Pharmacokinetic → Absorbed orally, Penetrate all body tissue, Metabolised in liver by acetylation.

dose dependent →

Adverse effects → Peripheral neuritis :- Mental disturbance convulsion, Numbness, Paresthesia,

Note → Neurotoxicity caused by INH is treated by (B6) Pyridoxin (100mg/day)

⇒ Hepatotoxicity. (old patient)

Drug interaction → INH, inhibit Phenytoin, carbamazepin, Diazepam, warfarin metabolism, Raised the concentration

(Para amino salicylic acid)

⇒ PAS inhibits, INH metabolism and prolong its t1/2.

Rifampicine → isolated from Streptomycin medi terranei.
(R-cin, Rimactane, Refadine)

⇒ Rifampicine or Rifampicine semisyn, deri. of Rifamycin-B

⇒ zwitterion ione, Soluble in water at acidic PH.

MoA → Bacteriocidal, act by inhibiting bacterial DNA dependent RNA polymerase, interfere & RNA synthesis.

⇒ Selective toxicity because Mammalian RNA Polymerase are not affected by the drug.

⇒

Pharmacokinetic → Metabolised by de-acetylation and excreted mainly in the bile, and undergo Enterohepatic circulation.

Toxicity → The urin, Saliva and body secretion are coloured orange (Pink) also cause Immunotoxicity.

Rule

A purpose of combinal drug resistance in T.B to delay the emergence of drug delay, which is common if single drug is used.

Contra-indication -> Hepatic toxicity, Respiratory syndrome, Renal failure Thrombocytopenia.

interaction ->

=> Rifampicin induces hepatic microsomal activity can accelerated the metabolism of several drug. like as oestrogen, corticosteroid, sulphonyl urea and anticoagulant.

So it may ↓ the action of contraceptic thus pregnancy is possible.

Ethambutal -> (Myambutal, Themibutal)

MoA -> inhibit Arabinogalactone synthesis and interfere in Mychalic acid incorporation in Micobacterial cell-wall.

Toxicity -> (ocular toxicity) loss of visual activity due to Retrobulbar neuritis (all think see white colour) and loss of colour vision.

dose -> 800mg.

in high dose Pruritis, Rashes, joint-pain abdominal pain hallucination, Peripheral neuritis hyper-uricemia (due to ↓ rate of urate excretion from the kidney.

Ethionamide -> same as INH, MOA.

Adverse effects -> Metalic taste, Gynacomastia, Anorexia, Diarrhoea, depression, Menstrual irregulation, optic neuritis, Hypothyroidism.

Cycloserine (AE) → Broad spectrum imp antibiotic isolated
(Seromycine) from streptomycin orchidaceous

MoA → it is analogue of D-Alanine and act by inhibiting the Enz (Alanin Recemace) interfare & incorporation of D-Alanine into Mucopeptide of bacterial cell wall.

Toxicity → May Psychotic states like a Suicidal, Grandmal seizures. Dysarthia, vertigo, confusion.

Contraindication → in Epilepsy, Depression Psychotic patients, alcoholism

☆ Convulsion may be prevented by pyridoxin. (100mg/day)

Bio Viomycin → it is Aminoglycoside.

MoA → inhibit protein synthesis.
Toxicity → impairing vestibular cochlear (8th cranial nerve damage)
☆ More severe than streptomycin toxicity
☆ Kidney damage.

Thiacetazone → cause Hepatotoxicity
(Amithyazone) exfoliative dermatitis
Steven Johnson syn.