

First line of drugs

	Isoniazid (INH)	Rifampin	Ethambutol	Pyrazinamide	Streptomycin
Mechanism Of Action	<p>Bacteriostatic for resting bacilli.</p> <p>Bactericidal for rapidly dividing bacilli.</p> <p>Is a prodrug, activated by mycobacterial enzyme</p> <p>Inhibits synthesis of mycolic acid----(component of mycobacterial cell wall).</p>	<p>Bactericidal</p> <p>Inhibits RNA synthesis.</p>	<p>Bacteriostatic</p> <p>Inhibits mycobacterial arabinoglycan a component of mycobacterial cell wall</p>	<p>Prodrug.</p> <p>Bactericidal</p>	<p>Bactericidal</p> <p>Inhibitors of protein synthesis by binding to 30 S ribosomal subunits.</p>
Clinical uses	<p>Mycobacterial infections</p> <p>Latent tuberculosis in patients with positive tuberculin skin test</p> <p>Prophylaxis against active TB in individuals who are in great risk .</p>	<p>Mycobacterial infections</p> <p>Prophylaxis of active tuberculosis.</p> <p>Treatment of serious staphylococcal infections.</p> <p>Meningitis by highly resistant penicillin pneumococci</p>	<p>Treatment of tuberculosis in combination with other drugs.</p>	<p>Mycobacterial infections mainly in multidrug resistance cases.</p> <p>It is important in short –course (6 months) regimen.</p> <p>Prophylaxis of TB .</p>	<p>Severe , life-threatening form of T.B. as meningitis, disseminated disease.</p>
Adverse effects	<p>Peripheral neuritis</p> <p>Optic neuritis & atrophy.(Pyridoxine should be given)</p> <p>Allergic reactions</p> <p>systemic lupus erythematosus</p> <p>Hepatitis</p>	<p>Harmless red-orange discoloration of body secretions .</p> <p>Hepatitis</p> <p>Flu-like syndrome</p> <p>Hemolytic anemia</p>	<p>Optic neuritis causing loss of visual acuity</p> <p>red-green color blindness.</p> <p>(Relatively contraindicated in children under 5 years).</p> <p>Hyperuricemia</p>	<p>Hepatotoxicity</p> <p>Hyperuricemia</p> <p>Drug fever & skin rash</p>	<p>Ototoxicity</p> <p>Nephrotoxicity</p> <p>Neuromuscular block</p>
Drug Interactions	<p>Inhibits the hepatic microsomal enzymes, cytochrome P450 .</p>	<p>Potent inducer of hepatic microsomal enzymes (cytochrome P450)</p>	<p>_____</p>	<p>_____</p>	<p>_____</p>
Site of Action	<p>Is effective against intracellular as well as extracellular bacilli</p>	<p>Intracellular bacilli</p> <p>Extracellular bacilli</p>	<p>Intracellular & Extracellular bacilli</p>	<p>Active against Intracellular Bacilli</p>	<p>Active mainly on extracellular bacilli</p>

Second line of drugs

	Ethionamide	Cycloserine	Fluoroquinolones (Ciprofloxacin &Levofloxacin)	Rifabutin	Aminosalicylic Acid (PAS).
Mechanism Of Action	Inhibits the synthesis of mycolic acid (Bacteriostatic-> in low does Bactericidal -> in high does)	Inhibitor of cell wall synthesis (Bactericidal)	Block DNA bacterial synthesis (Bactericidal)	RNA inhibitor. (Bactericidal) Cross –resistance with rifampin is complete.	(Bacteriostatic) Inhibits Folic acid synthesis.
Clinical uses	As a secondary line agent.		Effective against multidrug- resistant tuberculosis.	Effective in prevention &treatment of T.B. in AIDS patients.	AS a second line agent is used in the treatment of pulmonary & other forms of tuberculosis.
Adverse effects	Poorly tolerated Because of : Severe gastric irritation & Neurological manifestations	The most serious side effects are peripheral neuropathy and CNS dysfunction. <i>(Pyridoxine should be given.)</i>	Nausea , vomiting , diarrhea Prolong QT interval Damage growing cartilage (arthropathy)	GIT intolerance Orange-red discoloration of body secretions.	GIT upset (anorexia, nausea, diarrhea, epigastric pain). Hypersensitivity reactions Crystalluria
Drug Interactions				Enzyme inducer for P450 (hepatic enzymes).	
contraindicat ion		Contraindicated in epileptic patients.			

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