

Antibiotics

Drug	Act on	MOA	Pharmacokinetics	Side effects
PENICILLINS (Beta- lactam antibiotics)	Broad spectrum (gm- and gm+ bacteria)	Act by inhibition of cell wall synthesis. Bactericidal.	orally or parenterally Excreted unchanged in urine Half-life 30-60 min	Hypersensitivity reactions Super infections May cause convulsions after high doses by i.v or in renal failure Stevens- Johnson syndrome Anaphylaxis
Cefuroxime axetil Cephalosporin B-Lactam antibiotics	Broad spectrum	Act by inhibition of bacterial cell wall synthesis. Bactericidal	parenterally and orally. unchanged in the urine(lipid soluble) Half-life 30-90	Hypersensitivity reactions Maculopapular rash Thrombophlebitis (i.v admin.) Superinfections Diarrhea-oral cephalosporins
AMINOGLYCOSI-DES Streptomycin Gentamicin	Bactericidal (exclusive for aerobic G- bacteria)	Inhibit protein synthesis (30 s subunit)	Polycations (highly charged) parenteral or topical (not orally) Excreted unchanged in urine Half- life 2-3 hrs	Ototoxicity & nephrotoxicity Monitoring of serum levels
MACROLIDES Azithromycin	Inhibit protein synthesis by binding to the 50 s subunit	absorbed from GIT (Food delays) Widely distributed except CSF Protein binding 51% hepatic metabolism By Biliary route is eliminated Only 10-15% excreted unchanged in the urine Half- life 3 days	Advantage over erythromycin & clarithromycin Once daily dosing No inhibition of cytochrome P- 450	Nausea, vomiting, abdominal pain & diarrhea(AAC) Allergic reactions- urticaria, mild skin rashes Sore mouth
FLUOROQUINO-LONES Ciprofloxacin	Mainly effective against G – bacteria	Inhibit DNA synthesis by inhibiting DNA gyrase.	Well absorbed orally (available i.v) Di & tri- valent cations interfere with its absorption Concentrates in many tissues Do not cross BBB Excreted by kidney Upto 20% metabolized by liver T $\frac{1}{2}$ = 3.3 hrs	Nausea , vomiting & diarrhea CNS effects – confusion, insomnia, headache, dizziness & anxiety. May damage growing cartilage Phototoxicity – avoid excessive sunlight Contraindications Children / adolescents (under 18), pregnancy and lactation