

## Antibiotics

Disease	Drug	Caused by	Adverse reactions for the drugs	Notes on drug or disease
Meninginitis	- Pencillin G= benzylpencillin (+ gentamicin )	-Strep.coccil pneumo. -Nesseria meningitides <b>( Rifampin )</b> - 3 <sup>rd</sup> generation of cephalospo. - chloramphenecol - ampicillin ( 1 <sup>st</sup> choice )		Gentamicin : IM/IV/IT .. rapidly .. 3-5mg..8 h
Atypical pneumonia	- Erythromycin / Clarithromycin	Mycoplasma pneumonia		Serious drug reaction with Terfenadine ( non-sedative antihistamine )
	- Tetracyclines			Bacterstatic / inhibition of protein syn ( 30s ) / interaction with Iron at absorption site
Legionerrosis	- Tetracyclines - Erythromycin / Clarithromycin	Legonnaries		Masking may happen when use ery. Or clari.
Pseudomembranous colitis	Vancomycin Metranidazole	Clostridium Difficle	( duo to take some drugs like : Lincomycin, clindamycin, amoxicillin, ampicillin, cephalosporins)	In elderly ppl , characterized by : abdominal pain / diarrhea / fever / vomiting
Acne Vulgaris	Tetracyclines			
UTI ( ureniray... )	- Ampicillin	E.coli / klebslia		T ½ = 6 h
	- Co- trimoxizole			As a chemoprophylaxis , Specially in girls with recurrent UTI
	- 1 <sup>st</sup> generation of cephalo. Injectable			As pen. G activity ( G + ) and some G - ( e.coli , klebsilla , pneumonia , proteus ) / little penetrate BBB
	- oral cephalo			Absorbed very well / distribute to bones , cns , soft tissue , placenta / excreted as pen . ( unchanged via renal tubules )
	Ciprofloxin  Quinaloamines ( for cystitis and urithritis )			

Follicular Tonsillitis	Pencillin		- Allergy ( duo to metabolite penicilloic acid ) treated by : epinephrine / antihis. / hydrocortizine - GIT upset / - Na and K overload / - local pain and thrombophlebitis / - Nephritis / - Neurotoxicity / - platelets dysfunction and coagulation problems	/ lipid soluble / bactericidal / inhibition of cell wall syn. ( transpeptidation reaction is inhibited ) / Drug interaction with Probenecid at elimination
Acute osteomyelitis	Colxacillin / Linco. And clnido. / Fluroquinones	Staph.aures		
Typhus	Tetracylcines			
Leprosy	Dapson + Rifampicin			Rifampicin have a drug interaction with oral contraceptive at metabolism site
Segmental pneumonia	Benzylpencillin	Strept.pneumonia		In young man
Rheumatic fever prevention	Benzathaine pencillin			A chemoprophylaxis
Brochitis in cystic fibrosis	Doxycline			A chemoprophylaxis / prevention of exacerbation
Hepatic coma	Neomycin			A chemoprophylaxis
Gonorrhea	- pencillin G -erythromycin - cephalo. - ciprofloxin ( DOC ) - co- trimoxizole	Neisseria Gonorrhea		
Anthrax	- pencillin G - Fluoroquinolones	Bacillus Anthrax		
Gas gangeria	Pencillin G	Clostridium perfringens	Allergy / salt overload ( 1 gram contain 2.8 mmol Na and 1.7 k ) / massive doses : convulsion , hallucination , coma ( 40 mega daily )	- / IM , IV , IT / 1 U = 0.6 Mg / excreted by kidneys / t ½ = 30 min / G +
Tetanus	- Pencillin G - Erythromycin	Clostridium Tetani		
Syphilis	-pencillin G ( DOC ) - Erythromycin	Trepaneuma pallidum		
Leptospirosis	Pencillin G	Leptospira		
Actionomycosis	Pencillin G	Actinomyces Israeli		

Tonsillitis	- Pencillin G (DOC)		If there is allergy to penclilin give erythromycin	
Diphtheriae	- pencillin G - Erythormycin ( DOC )			
STD ( sexual... )	- Procaine pencillin G		<b>IM only</b> / once or twice daily / outpatient / dentistry prophylaxis	
	- Fluoroquinolones			
Acute strep.inf	- Benzathaine - oral cephalo.			
Mild strep.inf	- pencillin V			Orally / empty stomach / 6 h
Beta lactamase producing staph.aureus	Semi syn. Pencillin ( cloxacillin / dicloxicillin / flucloxacillin / oxacillin / nafcillin )			Highly pro. Bound / orally , parentally
h.influenzae infection	- Aminopenicillin		Diarrhea ( 12% in ampicillin more than amoxicillin ) / rash / GIT upset / neutropenia if given more than 10 days / haemolytic anaemia / super inf.	G+ , G- cocci / G – bacilli / DOC in G + bacillus / destroyed by B-lactamase / appear in bile
	- 2 <sup>nd</sup> generation cephalo			Less active to G+ cocci / more active to G – ( H.inf / enterobacter / klebsillea / proteus / Bcateriodes fragilis )
	- 3 <sup>rd</sup> generation cephlao			G – ( ( H.inf / enterobacter / klebsillea / pseudo. Arge. / Bcateriodes fragilis )
	- Rifampin			
Salmonella infections ( Typhoid )	- Amino pencillin - co-trimoxzaole - cephalo. -chloramphenicol (DOC) - Fluoroquinolones	Salmonella		
Shigella infections ( shigellosis )	- amino pencillin -co-trimoxzaole - Fluoroquinolones			
Beta lactamase producing staph.aureus	Augmentin			Amoxicillin (250mg ) + clavulanic acid ( 125mg )
Vibro cholira	Gentamicin Tetracyclines			

Pseudomonas aerogena infections ( a G – rod )	- carboxypencillin	Pseudomonas aerogena		Same activity as ampicillin ( Ticarcillin > carbenicilin )
	- ureidopencillin			Parentrally / excreted by kidney and bile / more active than carbenicilin / should be given with aminogly.
	- Fluoroquinolones			
	- Aztronam		Skin rashes / elevated liver enzymes / super inf.	A monobactam / can be given to a patient allergic to pencillin ! / resistant to B-lactamase / IV or IM
	- 3 <sup>rd</sup> generation cephalo			
	- aminoglycosides			
	Carbapenam ( imipenam / meropenam / ertapenam ) (B-lactamase resistant )		GIT upset / neutopenia / fits	Broadest spectrum of penicillin ( g+ , g- , anaerobic , pseudomonas aerogena ) / IV / penetrate well to tissues / synthetic
Skin & soft tissue infections	- 1 <sup>st</sup> generation cephalo injectable			
	- Tigecycline		GIT upset / photosensitivity / discoloration of teeth / ( should be not given in pregnancy ) / ( can be given in R.F )	Derivative from minocycline / G+ multi drug resis. , G- and anaerobic / Used with complicated intraabdominal infections
RTI ( respiratory tract infections )	- 1 <sup>st</sup> generation cephalo - Azithromycin - co-trimoxazole	h.influenzae		
GITI ( gastrointestinal tract inf. )	- aminoglycosides ( IM/IV .. 2-3h t1/2 .. Narrow therapeutic index )		- ototoxicity / nephrotoxicity / neutrotoxicity / rashes , fever , eosinophilia , bone – marrow depression , haemolytic anaemia , bleeding	Bactericidal / inhibit protein syn. ( 30S ) / water soluble / excreted by glomerular filtration CAN'T BE USED WITH RENAL FAILURE ! instead we use 3 <sup>rd</sup> generation cephalo
Klebsiella infection	1 <sup>st</sup> cephalo			
	2 <sup>nd</sup> cephalo			

Proteus infection	1 <sup>st</sup> cephalo 2 <sup>nd</sup> cephalo carboxypencillin			
Bacteroides fragilis	- 2 <sup>nd</sup> cephalo -3 <sup>rd</sup> cephalo			
	- lincomycin & clindomycin - chloramphenicol			- Clin. > linco. In ( H. inf + g + cocci + bacteroids ) - in patient allergic to pen.
COAD ( chronic obstructive airways disease )	- oral cephalo - tetracyclines	H.inf		
Septecimia	- cephalo			
	- gentamicin ( with pen. & metranidazole )			G - / IM , IV , IT , topically / Tobramycin similar to it but more active in pseudomonas argenousa
Mixed aerobic and anaerobic inf.	Cephalo		To all cephalo preparations ( allergy , cross with pencillin 5 – 15 % ) / more than 2 weeks : thrombocytopenia / neutopenia / interstitial nephritis , abnormal liver function / haemolytic anemia with positive coombs test / diarrhea / false positive glucose reaction / disulfiram like reaction if taken with alcohol / bleeding hypo prothrombinemia ( anti vitamin K effect )	
Plague	Streptomycin	Yersina proteus		
TB ( Tuberculosis )	-1 <sup>st</sup> line of drugs (1 <sup>st</sup> phase) = isonized , rifampicin , ethambutol , pyrazinamide  - 2 <sup>nd</sup> line of drugs ( aminoglycosides /Fluoroquinolones / macrolides /capreomycin / cucleserine	Mycobac. TB	* ethambutol : optic neuritis / pruritis / joint pain / GIT upset / anaphylaxis / increase urate [ ] in blood  * pyrazinamide : Jaudince 2-3 % /	2 <sup>nd</sup> phase is ( isonized , rifampicin )
Brucellosis	- Streptomycin - tetracyclines			
Tularemia	- Streptomycin			

Bacterial endocarditis	Streptomycin ( with pen. G or ampicillin )			
PUO ( <i>pyrexia of unknown</i> )	- Pencillin G + gentamicin			
Resistant strains to gentamicin	Amikacin & Netilmicin			Boardet spectrum
Burn , wounds , ulcers , on the eyes	Neomycin ( for sterilization)		- hypersensitivity reaction - rash - ototoxicity & nephrotoxicity - malabsorption syndrome ( diarrhea ..) - decrease in plasma cholesterol concentration due to necrosis of crypt-cells ( cholesterol syn. )	topically
Preparation to bowel syrgery	Neomycin			Orally
Chlamydia infection	- erythromycin ( a macrolide ) - tetracyclines			Chlamydia infection Include ( lymphogranuloma / Trachoma / no-specific urethritis )
Ulcer	- erythromycin & clarythromycin	Helicobacter pylori	GIT upset / allergic reaction / acute cholestatic hepatitis ( usually by erythromycin ) / ototoxicity	Macrolides ( ALTERNATIVE TO PENCILLIN )/ bacterstatic / inhibition of protein syn (50S ) inactivated by gastric juice , must be enteric coated / after food / cross placenta / largely excreted in bile
Whooping cough	Erythromycin	Pertussos		Is prior to dental procedure
Cold and allergic reaction & non-sedative antihistamine	- astimazole - terfinadine			
Urethritis	- Azithromycin = terithromycin	- Chlamydia trochmatis - mycobacterium ovium		Less active than ery. In strep and staph / more active to respiratory inf. Due to H.inf / Once daily / no effect on CYP3A4
Osteomyelitis	- linco. & clinda. - Fluoroquinolones			

Purulent osteitis	- linco. & clinda. ( clinda > linco )		GIT upset / over growth of fungi in oral cavity . GIT , vagina with glossitis , stomatitis , vaginitis / allergy reaction mild ( rash ) / haematological / impaired LFT / Thrombophlebitis	MOA similar to ery. And identical to chloram. (50S )/ resemble ery. In activity / absorb in GIT / excellent penetration to bone /
Anaerobic or mixed inf. In the CNS ( Brain abscess )	- chloramphenicol		-GIT upset / allergic / reversible erythroid suppression of bone marrow with anaemia high serum of iron , leucopenia , thrombocytopenia / irreversible pancytopenia ( aplastic anaemia ) with leukopenia anaemia and thrombocytopenia / <b>gray baby syndrome</b> / blurred vision / inhibition of cytochrome P-450	Bacteriostatic / inhibit pro. Syn (50s ) / G+ , G - , most anaerobes / metabolized in liver / excreted via kidney
Bacterial conjunctivitis ( inf. Of eye )	- Chloram			
Rickettsia inf. ( Typhus )	- Tetracyclines		GIT upset / super inf. / brown discolouration of teeth / hepatic toxicity / renal toxicity / phototoxicity / vestibular reaction / black hairy tongue  Can be given in renal failure	Bacteriostatic / inhibition of protein syn. (30s ) / absorb impaired by milk , aluminum hydroxide , Na-bic , Ca , Mg - salt , and iron preparations / cross BBB poorly / excreted in urine ( except for doxycycline, via faeces )
Q. Fever	- Tetracyclines			
Lyme disease	- Tetracyclines			
Cholera	- Tetracyclines			
Ulcerative colitis = inf. Of bowel	- sulphasalazine		May precipitate megaloblastic anaemia , leucopenia .. etc , due to folate deficiency / skin rashes / nausea , vomiting , diarrhea / allergic / CNS disturbances / renal damage / transient cholestatic jaundice / patient with AIDS , will have fever , rashes , leucopenia , diarrhea	Poorly absorb / solution 10% or ointment 30% to eyes
Crohns disease	- sulphasalazine			
Pneumocystic carinii	- co-trimoxazole			Happened with AIDS patients
Legionella pneumophila	- co-trimoxazole - Fluoroquinolones			

Genitourinary tract inf . ( GTI )	- Fluoroquinolones		GIT upset / CNS disturbance ( headache , dizziness , confusion ... etc ) / hypersensitivity reaction / phototoxicity / acute renal failure / raised liver enzyme / leucopenia / haematuria / arthropyathy and tendonitis	Bactericidils / inhibit DNA gyrase / most G - ( new generation against G + ) and anaerobic / oral absorb varied , impaired by Al , Mg , Fe , antacids , Zn , Ca , sucralfate / excreted by kidneys
Klebsillea pneumonia	- Fluoroquinolones			
Tuberculosis meningitis	Isoniazid		Rash 2% , fever 1.2% , jaundice 0.6% m peripheral neuritis 0.2% ( most common )/ hypersensitivity lead to fever , skin eruptions / hepatitis , maculopapular , pruritis and urticarial rashes / agranulocytosis , eosinophilia , thrombocytopenia , anemia / vasculitis / arthritic symptoms / hepatitis with jaundice	Static for resting bacilli , cidil for rapidly dividing / inhibit syn. Of mycolic acid / orally , parentrally
Prevention of contact with pulmonary TB	Isonized			
Prophylax meningococcal & H.inf	Rifampicin		Well tolerated / patients with TB will have rash 0.8% , fever 0.5% , nausea and vomiting 1.5% / jaundice / flu like syndrome 20% / CNS disturbance / GIT upset / hypersensitivity / hemolysis . hemoglobinuria / haematuria , renal insufficiency / thrombocytopenia , transient leucopenia , anemia	Cidil / G + and G - / inhibit RNA polymerase by forming a stable drug enzyme complex , suppression of chain formation / eliminated in bile / (( potent inducer of hepatic microsomal enzymes ))
MRSA	Vancomycin			
Severe Rickettsial inf	- Chloram. - Tetracycl.			
Prostitis	- trimethprim / flouroq. / ampicillin / amoxicillin / clindamycin / aminogly. /			