

# PHARMACOLOGY TABLES -CELL WALL INHIBITORS-



<https://t.me/pharmaacafe>

3rd year -2nd course  
pharmacy college



# Pencillins

DRUG	TYPE	PENICILLINASE SUSCEPTIBILITY	TREATMENT FOR	RESISTANT PARASITE	SIDE EFFECTS
<i>Penicillin G</i>	narrow spectrum	susceptible	<ul style="list-style-type: none"><li>• streptococci</li><li>• meningococci</li><li>• <b>gram +ve bacilli</b></li><li>• spirochetes</li><li>• <b>syphilis</b></li></ul>	<ul style="list-style-type: none"><li>• S.pneumoniae strains</li><li>• staphylococcus aureus</li><li>• neisseria gonorrhoeae</li></ul>	/
<i>penicillin V (oral)</i>	narrow spectrum	susceptible	<ul style="list-style-type: none"><li>• oropharyngeal infections</li></ul>	/	/
<i>methicillin</i>	very narrow spectrum	resistant	<ul style="list-style-type: none"><li>• staphylococcal infections</li></ul>	<ul style="list-style-type: none"><li>• staphylococcus aureus</li><li>• S.epidermidis</li></ul>	intestinal nephritis
<i>nafcillin +oxacillin</i>	very narrow spectrum	resistant	/	/	<b>nafcillin</b> neutropenia

DRUG	TYPE	PENICILLINASE SUSCEPTIBILITY	TREATMENT FOR	RESISTANT PARASITE	SIDE EFFECTS
<i>Ampicillin +Amoxicillin</i>	wider spectrum	susceptible	<ul style="list-style-type: none"><li>• listeria monocytogens</li><li>• escherichia coli</li><li>• proteus mirabilis</li><li>• haemophilus influenza</li><li>• moraxella catarrhalis</li></ul>	<ul style="list-style-type: none"><li>• staphylococcus aureus</li><li>• S.epidermidis</li></ul>	<b>ampicillin</b> <ul style="list-style-type: none"><li>• nausea</li><li>• diarrhea</li></ul>
<i>Piperacillin +ticarcillin</i>	wider spectrum	susceptible	<ul style="list-style-type: none"><li>• <b>gram -ve bacilli</b></li><li>• psuedomonas</li><li>• enterobacter</li><li>• klebsiella</li></ul>	/	<ul style="list-style-type: none"><li>• urticaria</li><li>• pruritus</li><li>• fever</li><li>• joint swelling</li><li>• hemolytic anemia</li><li>• nephritis</li><li>• anaphylaxis</li><li>• GIT upset</li><li>• nausea + diarrhea</li></ul>





# Cephalosporins



DRUG	TYPE	ADMINISTRATION / ABSORPTION	TREATMENT FOR	CLINICAL USE
<i>cefazolin</i>	1st gen	parenteral	<ul style="list-style-type: none"><li>• gram +ve cocci</li><li>• staphylococci</li><li>• E coli</li><li>• K pneumoniae</li></ul>	<ul style="list-style-type: none"><li>• treatment of infections</li><li>• surgical prophylaxis</li></ul>
<i>cephalexin</i>	1st gen	oral	<ul style="list-style-type: none"><li>• gram +ve cocci</li><li>• staphylococci</li><li>• E coli</li><li>• K pneumoniae</li></ul>	<ul style="list-style-type: none"><li>• treatment of infections</li><li>• surgical prophylaxis</li></ul>
<i>cefotetan</i> <i>cefoxitin</i>	2nd gen	/	infections caused by anaerobe BACTERIODE FRAGILIS	<ul style="list-style-type: none"><li>• treatment of infections</li></ul>
<i>Cefamandole</i> <i>cefuroxime</i> <i>cefaclor</i>	2nd gen	/	Sinus + ear + respiratory infections by <ul style="list-style-type: none"><li>• H influenzae</li><li>• M catarrhalis</li></ul>	<ul style="list-style-type: none"><li>• treatment of infections</li></ul>

DRUG	TYPE	ADMINISTRATION	TREATMENT FOR
<i>ceftazidime</i>	3rd gen	parenteral IV	<ul style="list-style-type: none"><li>pseudomonas</li><li>provedinca</li><li>serratia marcescens</li><li>beta lactamase producing strains of H influenzae +niesseria</li></ul>
<i>cefoperazone</i>	3rd gen	parenteral IV	<ul style="list-style-type: none"><li>pseudomonas</li><li>provedinca</li><li>serratia marcescens</li><li>beta lactamase producing strains of H influenzae +niesseria</li></ul>
<i>cefotaxime</i>	3rd gen	parenteral IV	<ul style="list-style-type: none"><li>B.fragilis</li><li>PRSP strains</li><li>provedinca</li><li>serratia marcescens</li><li>beta lactamase producing strains of H influenzae +niesseria</li></ul>
<i>ceftriaxone</i>	3rd gen	parenteral IV	<ul style="list-style-type: none"><li>PRSP strains</li><li>gonorrhea</li></ul>
<i>cefixime</i>	3rd gen	oral	<ul style="list-style-type: none"><li>gonorrhea</li></ul>

## DRUG

## TYPE

## TREATMENT FOR

## ADVERSE EFFECT

*cefepime*

4th gen

- gram -ve
- enterobacter
- haemophilus
- neisseria
- penicillin resistant pneumococci

- allergy
- skin rash
- anaphylaxis
- cross hypersensitivity

*ceftaroline*

4th gen

- methicillin resistant staphylococci

- allergy
- skin rash
- anaphylaxis
- cross hypersensitivity



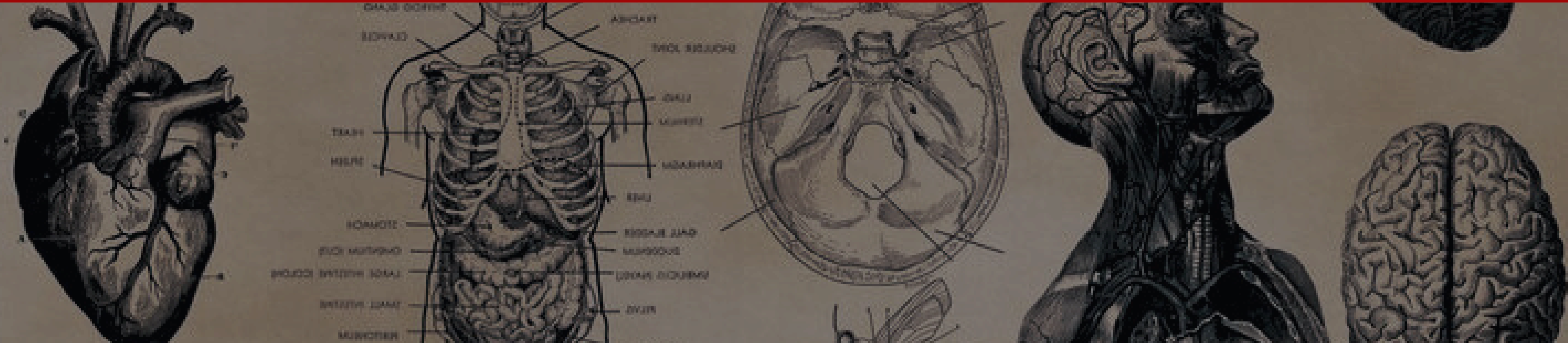



# Beta-lactam drugs

DRUG	TYPE	ADMINISTRATION	TREATMENT FOR	MECHANISM	ADVERSE EFFECTS
<i>Aztreonam</i>	monobactam	parenterally IV excretion = urine renal tubule	<ul style="list-style-type: none"><li>Gram -ve rods</li><li>klebsiella</li><li>pseudomonas</li><li>serratia</li></ul>	<ul style="list-style-type: none"><li>resistance to beta lactamases from gram -ve rods</li></ul>	<ul style="list-style-type: none"><li>GIT upset</li><li>superinfection</li><li>vertigo</li><li>headache</li><li>rarely hepatotoxicity</li><li>skin rash</li></ul>
<i>Imipenem</i>	carbapenems	parenterally	<ul style="list-style-type: none"><li>gram +ve cocci</li><li>penicillin resistant pneumococci</li><li>gram -ve rods</li><li>anaerobes</li></ul>	<ul style="list-style-type: none"><li>administered with Cilastatin that inhibits Renal dihydropeptidase-I</li><li>cilastatin inhibit formation of nephrotoxic metabolites</li></ul>	Imipenem-cilastatin : <ul style="list-style-type: none"><li>GIT distress</li><li>skin rash</li><li>very high plasma Levels</li><li>CNS toxicity</li><li>confusion</li><li>encephalopathy</li><li>seizures</li><li>partial cross-allergenicity with pencillins</li></ul>
<i>Doripenem</i> <i>Meropenem</i> <i>Ertapenem</i>	carbapenems	parenterally	<ul style="list-style-type: none"><li>gram +ve cocci</li><li>penicillin resistant pneumococci</li><li>gram -ve rods</li><li>anaerobes</li></ul>	/	<ul style="list-style-type: none"><li>partial cross- allergenicity with pencillins</li></ul>
<i>clavulanic acid</i> <i>sulbactam</i> <i>tazobactam</i>	beta lactamase inhibitors	parenterally	<ul style="list-style-type: none"><li>plasmid encoded beta lactamases</li><li>gonococci</li><li>streptococci</li><li>E coli</li><li>H influenzae</li></ul>	/	/



# other drugs



DRUG	TYPE	ADMINISTRATION / ABSORPTION	TREATMENT FOR	ADVERSE EFFECTS
<i>Vancomycin</i>	bactericidal works on cell wall glycoprotein narrow spectrum	oral / IV (Depend on infection location)	<ul style="list-style-type: none"> <li>MRSA</li> <li>vancomycin + ceftriaxone = PRSP treatment</li> <li>Backup drug for (clostridium difficile)</li> </ul>	<ul style="list-style-type: none"> <li>chills</li> <li>fever</li> <li>ototoxicity</li> <li>nephrotoxicity</li> <li>phlebitis</li> <li><b>RED MAN SYNDROME</b> diffuse flushing (from rapid infusion)</li> </ul> 
<i>Fosfomycin</i>	bactericidal works on cell wall Antimetabolite inhibitor	oral (once daily) excreted through kidney has high conc in urine	urinary tract infections (UTI) by: <ul style="list-style-type: none"> <li>E Coli</li> <li>E faecalis</li> </ul>	<ul style="list-style-type: none"> <li>nausea</li> <li>diarrhea</li> <li>vaginitis</li> <li>Headache</li> </ul>
<i>Daptomycin</i>	bactericidal works on cell wall cyclic lipopeptide	parenteral I.V	<ul style="list-style-type: none"> <li>complicated skin and skin structure infections</li> <li>Bacteremia (S.aureus)</li> </ul>	<ul style="list-style-type: none"> <li>myopathy</li> </ul>
<i>Polymyxins</i> <i>(polymyxin B)</i> <i>(polymyxin E -colistin-)</i>	bactericidal works on cell membrane !!!! cation polypeptide	see next page ↓	<ul style="list-style-type: none"> <li>P.aeruginosa</li> <li>E.coli</li> <li>K.pneumoniae</li> <li>acinobacter</li> <li>enterobacter</li> </ul>	<ul style="list-style-type: none"> <li>Nephrotoxicity</li> <li>neurotoxicity</li> <li>slurred speech</li> <li>muscle weakness</li> </ul>

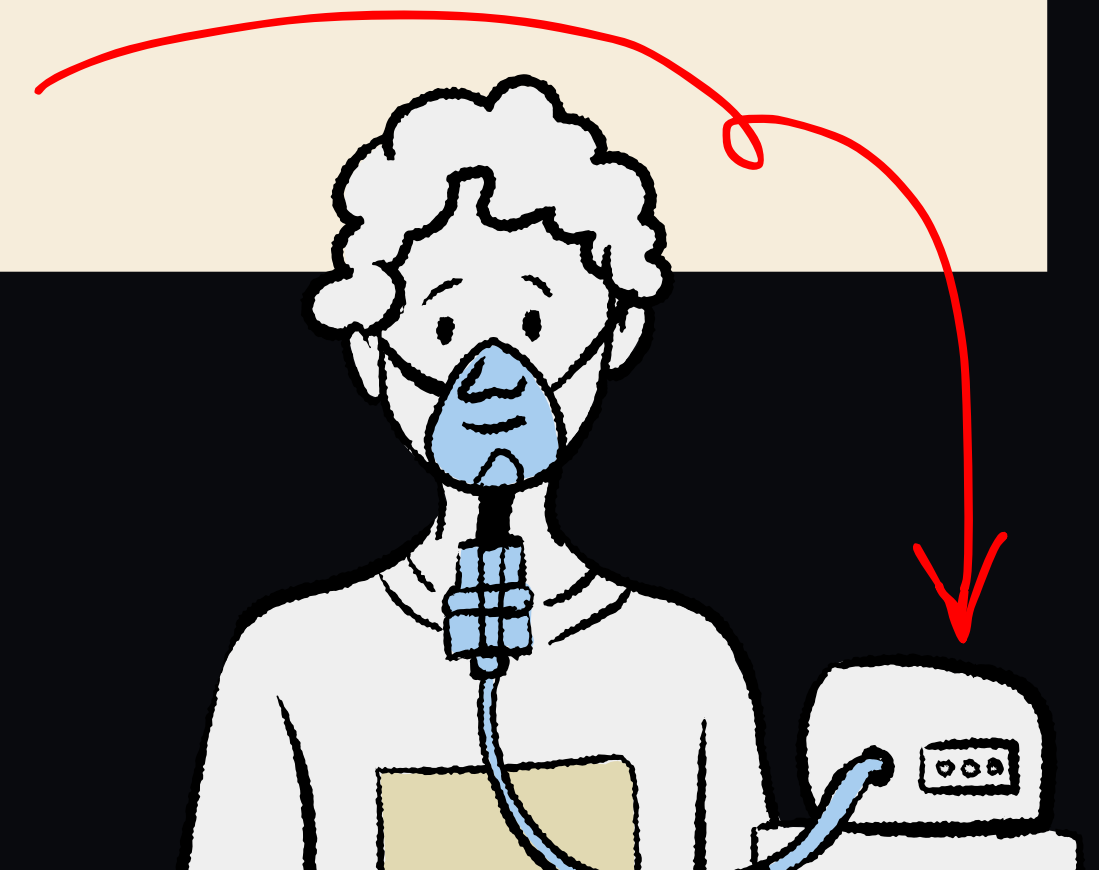
*(polymyxin B)*

- parenteral
- optic
- ophthalmic
- topical

*(polymyxin E -colistin-)*

available as (**colistimethate sodium**) = prodrug

- IV
- inhaled (nebulizer)







# GOOD LUCK

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