

# Cephalosporines

<u>Generation</u>	<u>Drug</u>	<u>Pharmacokinetics</u>	<u>Antimicrobial spectrum</u>	<u>Clinical uses</u>	<u>Adverse effects</u>
1 <sup>st</sup>	Cefazolin, Cephalexin & cephardin	<ul style="list-style-type: none"> <li>*Orally taken <b>except</b> (Cefazolin → IVI or IM).</li> <li>*Excreted mainly through kidney</li> <li>*Can NOT cross BBB</li> <li>*Probenecid increases their plasma level.</li> </ul>	Very effective Vs <b>G +ve only</b> ( except enterococci and MRSA )	<ul style="list-style-type: none"> <li>*UTI.</li> <li>*Minor staph infections : a- cellulites b-soft tissue abscess.</li> <li>* Cefazolin → surgical prophylaxis</li> </ul>	<ul style="list-style-type: none"> <li>* Allergy</li> <li>*Thrombophilbitis</li> <li>*Interstitial nephritis &amp; tubular necrosis mainly → Cephaloradine</li> </ul>
2 <sup>nd</sup>	Cefaclor, cefamandole & cefonicid	<ul style="list-style-type: none"> <li>* Orally or parentally.</li> <li>*Excreted through kidney.</li> <li>*Can NOT cross BBB.</li> <li>*Cefonicid is highly PB.</li> </ul> <p>T 1/2 for ALL Cephalosporins = 30-90 mins</p>	<ul style="list-style-type: none"> <li>-↓effect Vs G +ve</li> <li>- ↑effect Vs G -ve.</li> <li>-No effect: p.aeruginosa</li> </ul>	<ul style="list-style-type: none"> <li>*H.influnzea</li> <li>*Mixed anaerobic infections=&gt;peritonitis</li> <li>*Community acquired pneumonia</li> <li>* URTI's &amp; LRTI's</li> <li>* B.fragilis → cefoxitin</li> </ul>	<ul style="list-style-type: none"> <li>* Cephalosporin with <b>methylthiotetrazole</b> gp as Cefamandole, Cetperazone → <b>hypoprothrombinia = (bleeding disorder) → Vit k</b> Twice weekly can prevent this.</li> </ul>
3 <sup>rd</sup>	Cefoperazone, cefixime & ceftriaxone	<ul style="list-style-type: none"> <li>*Main route (IVI) <b>except</b> (cefixime → orally)</li> <li>*Excreted → kidney <b>except:</b> Ceftriaxone → bile.</li> <li>*Cross BBB</li> <li>* Ceftriaxone → t 1/2 = 4-7 hrs ( Once daily )</li> </ul>	<ul style="list-style-type: none"> <li>* ↑effect Vs G - ve</li> </ul>	<ul style="list-style-type: none"> <li>Serious, P.aeruginosa Meningitis → ceftriaxone (long T 1/2 , adults )</li> <li>Cefixime → Gonorrheal Infections.</li> <li>Cefotaxime → neonates</li> </ul>	<ul style="list-style-type: none"> <li>* Methylthiotetrazole ring → <b>Disulfiram like reaction</b> (cefamandole, cetperazone)</li> <li>*Super infections</li> <li>*Diarrhea</li> </ul>
4 <sup>th</sup>	Cefepime	<ul style="list-style-type: none"> <li>*More resistance to hydrolysis by B- Lactamase enzyme</li> </ul>	*Active Vs G+ ve	Same as 3 <sup>rd</sup> generation on E.coli and K.pneumonia but less for P.aeruginosa	<ul style="list-style-type: none"> <li>*Coombs test +ve hemolytic anemia</li> </ul>