3rd Generation Cephalosporin

Cephalosporins are beta-lactam antibiotics that are derived from Acremonium fungus. Like other beta-lactams, these antibiotics work by inhibiting bacterial cell wall synthesis. However, they are not as susceptible to penicillinases. There are traditionally five generations of cephalosporins classified based on their antimicrobial characteristics. Each new generation provides a more extended spectrum and has greater gram-negative bactericidal properties than the previous generation. Third generation cephalosporins such as ceftriaxone, cefotaxime, and ceftazidime are especially known for their broad spectrum of activity and further increased activity against gram-negative organisms resistant to other beta-lactams compared to the older generations. Ceftriaxone, especially, is commonly used for gonorrhea infections.



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Drug Names

Cefotaxime
Chef-taxi
This third-generation cephalosporin antibiotic (trade name: Claforan) is used to treat infections of the respiratory tract, connective tissues, urinary tract, genital tract, meninges, and blood. It can cross the blood-brain barrier. It offers coverage against most gram-negative bacteria, except for Pseudomonas. It is also effective against gram-positive cocci, except for enterococcus.

Ceftriaxone
Chef-tri-axes
This third-generation cephalosporin antibiotic (trade name: Rocephin) is used for community-acquired pneumonia, Haemophilus influenzae infection, and can be used for bacterial meningitis. More commonly, a single intramuscular injection can be given to effectively treat gonorrhea. Furthermore, ceftriaxone can cross the blood-brain barrier (BBB).

Cefdinir
Chef-dinner
Cefdinir (trade name: Omnicef) is a third-generation cephalosporin commonly used to treat pneumonia, bronchitis, ear infections, sinusitis, pharyngitis, tonsillitis, and skin infections. The pediatric formulation of cefdinir may bind to iron in the digestive tract, which can cause red discoloration of the stool in rare instances. Other side effects include diarrhea, vaginal infections or inflammation, nausea, headache, and abdominal pain.

Ceftazidime
Chef-tazmanian
This third-generation cephalosporin (trade name: Fortaz) is used to treat gram-positive and gram-negative bacteria. However, unlike most third-generation agents, it is active against Pseudomonas.

Pseudomonas
Sumo-Mona
Ceftazidime is the third-generation cephalosporin that has antimicrobial coverage of Pseudomonas aeruginosa.

Indications

Serious Gram-Negative Bacteria Resistant to Other Beta-Lactams
Graham-cracker Negative-devil wearing Resistance-bandana on Black Beta-fish
Third-generation cephalosporins are commonly used to combat serious gram-negative infections that are typically resistant to other beta-lactam antibiotics.

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