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Cefuroxime

From Wikipedia, the free encyclopedia

Cefuroxime, sold under the brand name **Zinacel** among others, is an **antibiotic** used to treat and prevent a number of bacterial infections.^[1] These include pneumonia, meningitis, otitis media, sepsis, urinary tract infections, and Lyme disease.^[2] It is used by mouth or by injection into a vein or muscle.^[2]

Common side effects include nausea, diarrhea, allergic reactions, and pain at the site of injection.^[2] Serious side effects may include *Clostridium difficile* infection, anaphylaxis, and Stevens-Johnson syndrome.^[2] Use in pregnancy and breastfeeding is believed to be safe.^[3] It is a second-generation cephalosporin and works by interfering with a bacteria's ability to make a cell wall resulting in its death.^[2]

Cefuroxime was patented in 1971, and approved for medical use in 1977.^[4] It is on the World Health Organization's List of Essential Medicines, which lists the safest and most effective medicines needed in a health system.^[5] It is available as a generic medication.^[1] A week of treatment when taken by mouth in the United Kingdom costs the NHS about £18 as of 2019.^[1] In the United States, the wholesale cost of this amount is about US\$8.50.^[6] In 2016, it was the 291st most prescribed medication in the United States, with more than a million prescriptions.^[7]

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Medical uses [edit]

As with the other cephalosporins, it is susceptible to beta-lactamase, although as a second-generation variety, it is less so. Hence, it may have greater activity against *Haemophilus influenzae*, *Neisseria gonorrhoeae*, and Lyme disease. Unlike other second-generation cephalosporins, cefuroxime can cross the blood-brain barrier.^[8]

A systematic review found high quality evidence that injecting the eye with cefuroxime after cataract surgery will lower the chance of developing endophthalmitis after surgery.^[9]

Side effects [edit]

Cefuroxime is generally well-tolerated and its side effects are usually transient. If ingested after food, this antibiotic is both better absorbed and less likely to cause its most common side effects of diarrhea, nausea, vomiting, headaches/migraines, dizziness, and abdominal pain compared to most antibiotics in its class.^[medical citation needed]

Although a widely stated cross-allergic risk of about 10% exists between cephalosporins and penicillin, recent^{when?} assessments have shown no increased risk for a cross-allergic reaction for cefuroxime and several other second-generation or later cephalosporins.^[10]

Chemistry [edit]

Cefuroxime axetil is an acetoxyethyl ester prodrug of cefuroxime which is effective when taken by mouth.^[11] It is a second-generation cephalosporin.

Trade names [edit]

In the U.S. it is marketed as *Zinacel* by Covis Pharmaceuticals since the company acquired the U.S. rights to the product from GSK.^[12] GSK had continued marketing a pediatric oral suspension as *Ceftin*; however, this presentation was discontinued as of 24 June 2017.^[13]

In Bangladesh, it is available as *Kilbac* by Incepta and *Xorimax* by Sandoz. In India, it is available as *Ceftum* in tablet form and *Supacel* in injection form by GSK.^[14] In Poland, it is available as *Zamur* by Mepha, subsidiary of Teva Pharmaceutical Industries.^[15] In Australia, the "first generic" form of Cefuroxime axetil, *Pharmacor Cefuroxime* (tablets) from Pharmacor Pty Ltd, was registered on 27 March 2017, by the Therapeutic Goods Administration.^[16] Cefuroxime axetil is also available (in two strengths) as granules for oral suspension from Aspen Pharmacare Australia Pty Ltd under the brand name *Zinnat cefuroxime*.^[17]

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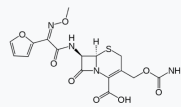
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- Drug information from the NIH

V T E	Antibiotics active on the cell wall and envelope (J01C-J01D)	[show]
V T E	GlaxoSmithKline	[show]
	Medicine portal	

Categories: Acetaldehyde dehydrogenase inhibitors | Carbamates | Cephalosporin antibiotics | Enantiopure drugs | Furans | Ketoximes | World Health Organization essential medicines

Cefuroxime



Clinical data
Trade names Zinacel, Cefin, others
AHFS/Drugs.com Monograph
MedlinePlus 6697206
Pregnancy category B
Routes of administration Intramuscular, intravenous, by mouth
Drug class Second-generation cephalosporin
ATC code J01DC02 [WHO] S01AA27 [WHO] QJ51DC02 [WHO]
Legal status
Legal status In general: x (Prescription only)
Pharmacokinetic data
Bioavailability 37% on an empty stomach, up to 52% if taken after food
Elimination half-life 80 minutes
Excretion Urine 66–100% unchanged
Identifiers
IUPAC name [show]
CAS Number 53829-76-5 ✓
PubChem CID 5381202
DrugBank 0801112 ✓
ChemSpider 4514099 ✓
UNII 01B9F935E9
KEGG 030292 ✓
CHEMBL CHEMBL468 ✓
CompTox Dashboard (EPA) DTXSID5022774 ✓
ECHA InfoCard 100.054.127 ✓
Chemical and physical data
Formula C ₁₆ H ₁₄ N ₄ O ₆ S
Molar mass 424.38 g·mol ^{−1}
3D model (JSmol) [interactive image]
SMILES [show]
InChI [show]
(verify)