Cefotaxime and desacetylcefotaxime are widely distributed in body tissues and fluids; therapeutic concentrations are achieved in the CSF particularly when the meninges are inflamed. Cefotaxime crosses the placenta and low concentrations have been detected in breast milk.

After partial metabolism in the liver to desacetylcefotaxime and inactive metabolites, elimination is mainly by the kidneys and about 40 to 60% of a dose has been recovered unchanged in the urine within 24 hours; a further 20% is excreted as the desacetyl metabolite. Relatively high concentrations of cefotaxime and desacetylcefotaxime are achieved in bile and about 20% of a dose has been recovered in the faeces.

Probenecid competes for renal tubular secretion with cefotaxime resulting in higher and prolonged plasma concentrations of cefotaxime and its desacetyl metabolite. Cefotaxime and its metabolites are removed by haemodialysis.

When microbiological assays have been used, reported pharmacokinetic values may relate to cefotaxime plus its active metabolite, desacetylcefotaxime.

Hepatic impairment. References.

1. Höffken G, *et al.* Pharmacokinetics of cefotaxime and desacetylcefotaxime in cirrhosis of the liver. *Chemotherapy* 1984; **30:** 7–17.
2. Graninger W, *et al.* Cefotaxime and desacetyl-cefotaxime blood levels in hepatic dysfunction. *J Antimicrob Chemother* 1984; **14** (suppl B): 143–6.
3. Hary L, *et al.* The pharmacokinetics of ceftriaxone and cefotaxime in cirrhotic patients with ascites. *Eur J Clin Pharmacol* 1989; **36:** 613–16.
4. Ko RJ, *et al.* Pharmacokinetics of cefotaxime and desacetylcefotaxime in patients with liver disease. *Antimicrob Agents Chemother* 1991; **35:** 1376–80.

Renal impairment. References.

1. Matzke GR, *et al.* Cefotaxime and desacetyl cefotaxime kinetics in renal impairment. *Clin Pharmacol Ther* 1985; **38:** 31–6.
2. Paap CM, *et al.* Pharmacokinetics of cefotaxime and its active metabolite in children with renal dysfunction. *Antimicrob Agents Chemother* 1991; **35:** 1879–83.
3. Paap CM, *et al.* Cefotaxime and metabolite disposition in two pediatric continuous ambulatory peritoneal dialysis patients. *Ann Pharmacother* 1992; **26:** 341–3.
4. Paap CM, Nahata MC. The relation between type of renal disease and renal drug clearance in children. *Eur J Clin Pharmacol* 1993; **44:** 195–7.

Uses and Administration

Cefotaxime is a third-generation cephalosporin antibacterial used in the treatment of infections due to susceptible organisms, especially serious and life-threatening infections. They include brain abscess, endocarditis, gonorrhoea, intensive care (selective parenteral and enteral antisepsis regimens), Lyme disease, meningitis, peritonitis (primary or spontaneous), pneumonia, septicaemia, and typhoid fever. It is also used for surgical infection prophylaxis. For details of these infections and their treatment, see under Choice of Antibacterial, p.162.

Administration and dosage. Cefotaxime is given as the sodium salt by deep intramuscular injection or intravenously by slow injection over 3 to 5 minutes or by infusion over 20 to 60 minutes. Doses are expressed in terms of the equivalent amount of cefotaxime; 1.05 g of cefotaxime sodium is equivalent to about 1 g of cefotaxime. It is usually given in doses of 2 to 6 g daily in 2 to 4 divided doses to adults. In severe infections up to 12 g may be given daily by the intravenous route in up to 6 divided doses; pseudomonal infections usually require more than 6 g daily, but a cephalosporin with greater antipseudomonal activity, such as ceftazidime, is preferable. Children may be given 100 to 150 mg/kg (50 mg/kg for neonates) daily in 2 to 4 divided doses, increased in severe infections to 200 mg/kg (150 to 200 mg/kg for neonates) daily if necessary.

For details of reduced doses to be used in patients with severe renal impairment, see below.

In the treatment of gonorrhoea, a single dose of 0.5 or 1 g of cefotaxime is given.

For surgical infection prophylaxis, 1 g is given 30 to 90 minutes before surgery. At caesarean section, 1 g is given intravenously to the mother as soon as the umbilical cord is clamped and two further doses intramuscularly or intravenously 6 and 12 hours later.

Cefotaxime may be used with an aminoglycoside as synergy may occur against some Gram-negative organisms, but the drugs should be given separately. It has sometimes been used with another beta lactam to broaden the spectrum of activity. Cefotaxime has also been used with metronidazole in the treatment of mixed aerobic-anaerobic infections.

◊ General references to third-generation cephalosporins.

1. Neu HC, *et al.*, eds. Third-generation cephalosporins: a decade of progress in the treatment of severe infections. *Am J Med* 1990; **88** (suppl 4A): 1S–45S.

◊ General references to cefotaxime.

1. Todd PA, Brogden RN. Cefotaxime: an update of its pharmacology and therapeutic use. *Drugs* 1990; **40:** 608–51.
2. Gentry LO. Cefotaxime and prophylaxis: new approaches with a proven agent. *Am J Med* 1990; **88** (suppl 4A): 32S–37S.
3. Davies A, Speller DCE, eds. Cefotaxime—recent clinical investigations. *J Antimicrob Chemother* 1990; **26** (suppl A): 1–83.
4. Brogden RN, Spencer CM. Cefotaxime: a reappraisal of its antibacterial activity and pharmacokinetic properties, and a review of its therapeutic efficacy when administered twice daily for the treatment of mild to moderate infections. *Drugs* 1997; **53:** 483–510.

Administration in renal impairment. Doses of cefotaxime should be reduced in severe renal impairment; after an initial loading dose of 1 g, halving the dose while maintaining the usual frequency of dosing has been suggested.

Preparations

BP 2008: Cefotaxime Injection;
USP 31: Cefotaxime for Injection; Cefotaxime Injection.

Proprietary Preparations (details are given in Part 3)

Arg.: Cefacolin; Terasep; Tizoxim†; ***Austral.:*** Claforan†; ***Austria:*** Claforan; Tirotax; ***Belg.:*** Claforan; ***Braz.:*** Cefacolin†; Ceforan; Claforan; Clafordil; Fotax†; Kefoxin†; Taxima; ***Canad.:*** Claforan; ***Chile:*** Grifotaxima†; ***Cz.:*** Cefantral†; Ceftax; Claforan†; Sefotak; Taxcef; ***Denm.:*** Claforan; ***Fin.:*** Claforan; ***Fr.:*** Claforan; ***Ger.:*** Claforan; ***Gr.:*** Ceramil; Ciltiren; Claforan; Flemycin; Letynol; Molelant; Naspor; Phacocef; Solubilax; Spirosine; Stoparen; ***Hong Kong:*** Cetan†; Claforan; Valoran; ***Hung.:*** Cefalekol; Cefotax†; Claforan; Tirotax; ***India:*** Biotax; Claforan; Lyforan; Novatax; Omnatax; Omnicef; Oritaxim; Talcef†; Zetaxim; ***Indon.:*** Baxima; Biocef; Cefor; Cefovell; Cefoxal; Clacef; Claforan; Clatax; Combicef; Efotax; Ethiclaf; Foxim; Goforan; Kalfoxim; Lancef; Lapixime; Procefa; Rycef; Sidaxim; Soclaf; Starclaf; Taxegram; Taximax; Tirdicef; ***Irl.:*** Claforan; ***Israel:*** Claforan; ***Ital.:*** Aximad; Batixim; Cefomit; Centiax; Claforan; Lirgosin; Refotax; Salocef; Spectrocef; Tafocex; Taxime; Xame; Zariviz; Zimanel; ***Malaysia:*** Cetaxima†; Claforan; Claraxim; ***Mex.:*** Benaxima; Biosint; Cefoclin†; Cefotex; Cefradil; Ceftomax; Claforan; Defradil; Fot-Amsa; Fotexina; Sefoxiram; Sepsilem; Taporin; Tebruxim; Tirotax; Viken; Xendin; ***Neth.:*** Claforan; Tirotax; ***Norw.:*** Claforan; ***NZ:*** Claforan; ***Philipp.:*** Cladex; Clafetam; Claforan; Clafoxim; Clavocef; Clinbaxef; Ofetaxim; Pantaxin; Tafoxam; Zefocent; ***Pol.:*** Biotaksym; Rantaksym; Tarcefoksym; Tirotax; ***Port.:*** Antadar; Cefobetox; Forticeporina†; Ralopar; Resibelacta; Totam; ***Rus.:*** Cefosin (Цефосин); Claforan (Клафоран); Intrataxime (Интратаксим); Oritaxim (Оритаксим); Talcef (Талцеф); Tarcefoksym (Тарцефоксим); ***S.Afr.:*** Claforan; Kefotax; Klafotaxim; Reftax; Totam†; ***Singapore:*** Clacef; Claforan; ***Spain:*** Claforan; ***Swed.:*** Claforan; ***Switz.:*** Claforan; ***Thai.:*** Biotaxime†; Cefomic; Ceforan; Cefotax; Ceftaran†; Ceftaxan; Claforan; Claraxim; Fontax; Fortax†; Fotax; Motaxim; Oritaxime†; Valoran†; ***Turk.:*** Betaksim; Claforan; Deforan; Sefagen; Sefoksim; Sefotak; Taxocef; ***UAE:*** Primocef; ***UK:*** Claforan; ***USA:*** Claforan; ***Venez.:*** Baltícina†; Cefam; Cefatox; Cefotas†; Claforan; Novatax; Taxibon†; Tirotax.

Multi-ingredient: ***India:*** Sultax.

Cefotetan *(BAN, USAN, rINN)*

Céfotétan; Cefotetán; Cefotetanum; ICI-156834 (cefotetan or cefotetan disodium); YM-09330 (cefotetan or cefotetan disodium). (7*S*)-7-[(4-Carbamoylcarboxymethylene-1,3-dithietan-2-yl)carboxamido]-7-methoxy-3-[(1-methyl-1*H*-tetrazol-5-yl)thiomethyl]-3-cephem-4-carboxylic acid.

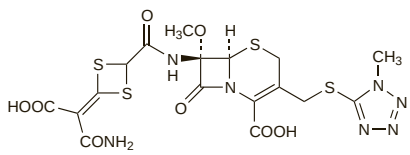
Цефотетан

$C_{17}H_{17}N_7O_8S_4$ = 575.6.

CAS — 69712-56-7.

ATC — J01DC05.

ATC Vet — QJ01DC05.



Pharmacopoeias. In *Jpn* and *US.*
USP 31 (Cefotetan). Store in airtight containers.

Cefotetan Disodium *(BANM, USAN, rINNM)*

Cefotetán disódico; Céfotétan Disodique; Cefotetanum Dinatricum; ICI-156834 (cefotetan or cefotetan disodium); YM-09330 (cefotetan or cefotetan disodium). (7*S*)-7-[(4-Carbamoylcarboxymethylene-1,3-dithietan-2-yl)carboxamido]-7-methoxy-3-[(1-methyl-1*H*-tetrazol-5-yl)thiomethyl]-3-cephem-4-carboxylic acid, disodium salt.

Динатрий Цефотетан

$C_{17}H_{15}N_7Na_2O_8S_4$ = 619.6.

CAS — 74356-00-6.

ATC — J01DC05.

ATC Vet — QJ01DC05.

Pharmacopoeias. In *US.*
USP 31 (Cefotetan Disodium). pH of a 10% solution in water is between 4.0 and 6.5. Store in airtight containers.

Incompatibility and stability. There may be incompatibility with aminoglycosides. Precipitation has been reported with promethazine hydrochloride.

References.

1. Das Gupta V, *et al.* Chemical stability of cefotetan disodium in 5% dextrose and 0.9% sodium chloride injections. *J Clin Pharm Ther* 1990; **15:** 109–14.
2. Erickson SH, Ulici D. Incompatibility of cefotetan disodium and promethazine hydrochloride. *Am J Health-Syst Pharm* 1995; **52:** 1347.

Adverse Effects and Precautions

As for Cefalotin Sodium, p.219.

Cefotetan contains an *N*-methylthiotetrazole side-chain and has the potential to cause hypoprothrombinaemia and bleeding.

Cefotetan, especially at high doses, may interfere with the Jaffé method of measuring creatinine concentrations to produce falsely elevated values; this should be borne in mind when measuring renal function.

Effects on the blood. Reviews[1,2] and a case report[3] of haemolytic anaemia associated with cefotetan.

1. Moes GS, MacPherson BR. Cefotetan-induced hemolytic anemia: a case report and review of the literature. *Arch Pathol Lab Med* 2000; **124:** 1344–6.
2. Viraraghavan R, *et al.* Cefotetan-induced haemolytic anaemia: a review of 85 cases. *Adverse Drug React Toxicol Rev* 2002; **21:** 101–7.
3. Robinson HE, *et al.* Cefotetan-induced life-threatening haemolysis. *Med J Aust* 2006; **184:** 251.

Sodium content. Each g of cefotetan disodium contains about 3.2 mmol of sodium.

Interactions

As for Cefamandole, p.221.

Antimicrobial Action

Cefotetan is a cephamycin antibiotic with a mode of action and spectrum of activity similar to those of cefoxitin (p.230). It is generally much more active *in vitro* than cefoxitin against the Gram-negative Enterobacteriaceae, but has similar activity against *Bacteroides fragilis* and may be less active against some other *Bacteroides* spp.

Pharmacokinetics

On intramuscular injection of cefotetan, peak plasma concentrations of about 70 micrograms/mL at 1 hour and 90 micrograms/mL at 3 hours have been reported after doses of 1 and 2 g, respectively. The plasma half-life of cefotetan is usually in the range of 3.0 to 4.6 hours and is prolonged in patients with renal impairment. About 88% of cefotetan may be bound to plasma proteins, depending on the plasma concentration.

Cefotetan is widely distributed in body tissues and fluids. It crosses the placenta and low concentrations have been detected in breast milk. High concentrations are achieved in bile.

Cefotetan is excreted in the urine, primarily by glomerular filtration, as unchanged drug; 50 to 80% of a dose has been recovered in the urine in 24 hours and high concentrations are achieved. Small amounts of the tautomeric form of cefotetan have been detected in both plasma and urine.

Biliary excretion of cefotetan probably accounts for nonrenal clearance.

Some cefotetan is removed by dialysis.

◊ References.

1. Martin C, *et al.* Clinical pharmacokinetics of cefotetan. *Clin Pharmacokinet* 1994; **26:** 248–58.

Uses and Administration

Cefotetan is a cephamycin antibacterial generally classified with the second-generation cephalosporins and used similarly to cefoxitin (p.230) in the treatment and prophylaxis of anaerobic and mixed bacterial infections, especially intra-abdominal and pelvic infections.

It is given as the disodium salt by deep intramuscular injection or intravenously by slow injection over 3 to 5 minutes or by infusion. Doses are expressed in terms of the equivalent amount of cefotetan; 1.08 g of cefotetan disodium is equivalent to about 1 g of cefotetan. The usual dose is 1 or 2 g every 12 hours. For the treatment of life-threatening infections, 3 g every 12 hours may be given intravenously. Doses of cefotetan should be reduced in patients with moderate to severe renal impairment (see below).

For infection prophylaxis during surgical procedures, an intravenous dose of 1 or 2 g is given 30 to 60 minutes before surgery or, in caesarean section, as soon as the umbilical cord is clamped.

Administration in renal impairment. Dosage of cefotetan should be reduced in patients with moderate to severe renal impairment. US licensed product information gives the following dosing guidelines based on creatinine clearance (CC):

- CC 10 to 30 mL/minute: the usual dose every 24 hours or one-half the usual dose every 12 hours
- CC less than 10 mL/minute: the usual dose every 48 hours or one-quarter the usual dose every 12 hours

In patients undergoing haemodialysis, one-quarter the usual dose may be given every 24 hours on days between dialysis and one-half the usual dose on the day of dialysis.

Preparations

USP 31: Cefotetan for Injection; Cefotetan Injection.

Proprietary Preparations (details are given in Part 3)

Austral.: Apatef†; ***Belg.:*** Apacef†; ***Canad.:*** Cefotan†; ***Fr.:*** Apacef†; ***Ital.:*** Apatef†; ***Jpn:*** Yamatetan†; ***NZ:*** Apatef†; ***Port.:*** Apatef†; ***USA:*** Cefotan.

Cefotiam Hydrochloride *(BANM, USAN, rINNM)*

Abbott-48999; Céfotiam, Chlorhydrate de; Cefotiami Hydrochloridum; CGP-14221E (cefotiam or cefotiam hydrochloride); Hidrocloruro de cefotiam; SCE-963. 7-[2-(2-Amino-1,3-thiazol-4-yl)acetamido]-3-[1-(2-dimethylaminoethyl)-1*H*-tetrazol-5-ylthiomethyl]-3-cephem-4-carboxylic acid dihydrochloride.

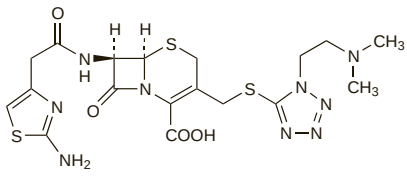
Цефотиама Гидрохлорид

$C_{18}H_{23}N_9O_4S_3,2HCl$ = 598.6.

CAS — 61622-34-2 (cefotiam); 66309-69-1 (cefotiam hydrochloride).

ATC — J01DC07.

ATC Vet — QJ01DC07.



(cefotiam)

Pharmacopoeias. In *Jpn* and *US*. *Jpn* also includes cefotiam hexetil hydrochloride.
USP 31 (Cefotiam Hydrochloride). Store in airtight containers.

Profile

Cefotiam is a third-generation cephalosporin antibacterial with actions and uses similar to those of cefamandole (p.220). It is given intravenously or intramuscularly as the hydrochloride but doses are expressed in terms of the base; 1.14 g of cefotiam hydrochloride is equivalent to about 1 g of cefotiam. The usual dose is the equivalent of up to 6 g of cefotiam daily in divided doses, according to the severity of the infection.

Cefotiam hexetil hydrochloride, a prodrug of cefotiam, is given orally in doses equivalent to 200 to 400 mg of cefotiam twice daily.

◊ References.

1. Brogard JM, *et al.* Clinical pharmacokinetics of cefotiam. *Clin Pharmacokinet* 1989; **17:** 163–74.

Preparations

USP 31: Cefotiam for Injection.

Proprietary Preparations (details are given in Part 3)

Austria: Spizef; ***Fr.:*** Taketiam; Texodil; ***Ger.:*** Spizef; ***Indon.:*** Aspil; Cefradol; Ceradolan; Ethidol; Fodiclo; Fotaram; ***Jpn:*** Pansporin; ***Philipp.:*** Ceradolan; ***Singapore:*** Ceradolan; ***Thai.:*** Ceradolan.

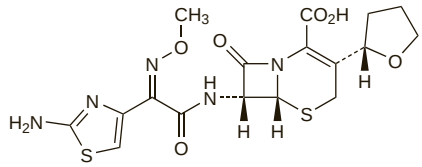
Cefovecin Sodium *(USAN, rINNM)*

Cefovecina sódica; Céfovécine Sodique; Natrii Cefovecinum; UK-287074-02. Sodium (6*R*,7*R*)-7-{[(2*Z*)-(2-aminothiazol-4-yl)(methoxyimino)acetyl]amino}-8-oxo-3-[(2*S*)-tetrahydrofuran-2-yl]-5-thia-1-azabicyclo[4.4.0]oct-2-ene-2-carboxylate.

Натрий Цефовецин

$C_{17}H_{18}N_5NaO_6S_2$ = 475.5.

CAS — 234096-34-5 (cefovecin); 141195-77-9 (cefovecin sodium).



(cefovecin)

Profile

Cefovecin sodium is a third-generation cephalosporin antibacterial used in veterinary medicine.

Cefoxitin Sodium *(BANM, USAN, rINNM)*

Cefoksitino natrio druska; Cefoksytyna sodowa; Cefoxitin sodná sůl; Cefoxitina sódica; Céfoxitine sodique; Cefoxitinnatrium; Cefoxitin-nátrium; Cefoxitinum natricum; Kefoksitiininatrium; L-620388; MK-306; Natrii Cefoxitinum. Sodium 3-carbamoyloxymethyl-7-methoxy-7-[2-(2-thienyl)acetamido]-3-cephem-4-carboxylate.

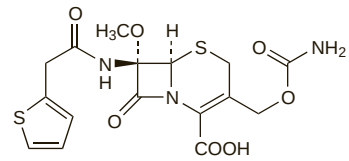
Натрий Цефокситин

$C_{16}H_{16}N_3NaO_7S_2$ = 449.4.

CAS — 35607-66-0 (cefoxitin); 33564-30-6 (cefoxitin sodium).

ATC — J01DC01.

ATC Vet — QJ01DC01.



(cefoxitin)

Pharmacopoeias. In *Eur.* (see p.vii) and *US*.
Ph. Eur. 6.2 (Cefoxitin Sodium). A white or almost white, very hygroscopic, powder. Very soluble in water; sparingly soluble in alcohol. A 1% solution in water has a pH between 4.2 and 7.0. Store in airtight containers.
USP 31 (Cefoxitin Sodium). White to off-white, somewhat hygroscopic, granules or powder, having a slight characteristic odour. Very soluble in water; slightly soluble in acetone; insoluble in chloroform and in ether; sparingly soluble in dimethylformamide; soluble in methyl alcohol. pH of a 10% solution in water is between 4.2 and 7.0. Store in airtight containers at a temperature not exceeding 8°.

Adverse Effects and Precautions

As for Cefalotin Sodium, p.219.

Cefoxitin may interfere with the Jaffé method of measuring creatinine concentrations to produce falsely high values; this should be borne in mind when measuring renal function.

Breast feeding. Cefoxitin is distributed into breast milk but is detectable only in low concentrations. In a study[1] in which cefoxitin was given prophylactically in doses of 2 to 4 g to 18 women undergoing caesarean section, only one sample of breast milk contained measurable concentrations of cefoxitin, 19 hours after the last dose. No adverse effects have been observed in breast-fed infants whose mothers were receiving cefoxitin, and the American Academy of Pediatrics considers[2] that it is therefore usually compatible with breast feeding.

1. Roex AJM, *et al.* Secretion of cefoxitin in breast milk following short-term prophylactic administration in caesarean section. *Eur J Obstet Gynecol Reprod Biol* 1987; **25:** 299–302.
2. American Academy of Pediatrics. The transfer of drugs and other chemicals into human milk. *Pediatrics* 2001; **108:** 776–89. Correction. *ibid.*; 1029. Also available at: http://aappolicy.aappublications.org/cgi/content/full/pediatrics%3b108/3/776 (accessed 25/05/04)

Effects on the gastrointestinal tract. Marked changes in anaerobic, facultative, and aerobic faecal flora have been noted with cefoxitin.[1]

1. Mulligan ME, *et al.* Alterations in human fecal flora, including ingrowth of Clostridium difficile, related to cefoxitin therapy. *Antimicrob Agents Chemother* 1984; **26:** 343–6.

Sodium content. Each g of cefoxitin sodium contains about 2.2 mmol of sodium.

Interactions

Probenecid reduces the renal clearance of cefoxitin.

Antimicrobial Action

Cefoxitin is a cephamycin antibacterial which, like the other beta lactams, is bactericidal and is considered to act through the inhibition of bacterial cell wall synthesis.

It has a similar spectrum of activity to cefamandole (p.221) but is more active against anaerobic bacteria, especially *Bacteroides fragilis*.

Cefoxitin can induce the production of beta-lactamases by some bacteria, and use of cefoxitin with other beta lactams have been shown to be antagonistic *in vitro*.

Cefoxitin itself is considered to be resistant to a wide range of beta-lactamases, including those produced by *Bacteroides* spp. However, acquired resistance to cefoxitin has been reported in *B. fragilis* (see Anaerobic Bacterial Infections, p.163) and has been attributed to beta-lactamase as well as to alterations in penicillin-binding proteins or to outer membrane proteins; there may be cross-resistance to other antibacterials.

◊ References.

1. Cuchural GJ, *et al.* Transfer of β-lactamase-associated cefoxitin resistance in Bacteroides fragilis. *Antimicrob Agents Chemother* 1986; **29:** 918–20.
2. Piddock LJV, Wise R. Cefoxitin resistance in Bacteroides species: evidence indicating two mechanisms causing decreased susceptibility. *J Antimicrob Chemother* 1987; **19:** 161–70.
3. Brogan O, *et al.* Bacteroides fragilis resistant to metronidazole, clindamycin and cefoxitin. *J Antimicrob Chemother* 1989; **23:** 660–2.
4. Wexler HM, Halebian S. Alterations to the penicillin-binding proteins in the Bacteroides fragilis group: a mechanism for non-β-lactamase mediated cefoxitin resistance. *J Antimicrob Chemother* 1990; **26:** 7–20.
5. Cherubin CE, Appleman MD. Susceptibility of cefoxitin-resistant isolates of bacteroides to other agents including β-lactamase inhibitor/β-lactam combinations. *J Antimicrob Chemother* 1993; **32:** 168–70.

Pharmacokinetics

Cefoxitin is not absorbed from the gastrointestinal tract; it is given parenterally as the sodium salt. After 1 g by intramuscular injection a peak plasma concentration of up to 30 micrograms/mL at 20 to 30 minutes has been reported whereas concentrations of 125, 72, and 25 micrograms/mL have been achieved after intravenous doses of 1 g over 3, 30, and 120 minutes respectively. Cefoxitin is about 70% bound to plasma proteins. It has a plasma half-life of 45 to 60 minutes which is prolonged in renal impairment. Cefoxitin is widely distributed in the body but there is normally little penetration into the CSF, even when the meninges are inflamed. It crosses the placenta and has been detected in breast milk. Relatively high concentrations are achieved in bile.

The majority of a dose is excreted unchanged by the kidneys, up to about 2% being metabolised to descarbamylcefoxitin which is virtually inactive. Cefoxitin is excreted in the urine by glomerular filtration and tubular secretion and about 85% of a dose is recovered within 6 hours; probenecid slows this excretion. After an intramuscular dose of 1 g, peak concentrations in the urine are usually greater than 3 mg/mL.

Cefoxitin is removed to some extent by haemodialysis.

Uses and Administration

Cefoxitin is a cephamycin antibacterial that differs structurally from the cephalosporins by the addition of a 7-α-methoxy group to the 7-β-aminocephalosporanic acid nucleus.

It is generally classified with the second-generation cephalosporins and can be used similarly to cefamandole (p.221) for the treatment of susceptible infections. However, because of its activity against *Bacteroides fragilis* and other anaerobic bacteria, it is used principally in the treatment and prophylaxis of anaerobic and mixed bacterial infections, especially intra-abdominal and pelvic infections. Indications include endometritis (prophylaxis at caesarean section), pelvic inflammatory disease, and surgical infection (prophylaxis). It may also be used in the treatment of gonorrhoea and