NEW ZEALAND DATA SHEET

1. PRODUCT NAME

CEFUROXIME-AFT 250 mg contains Cefuroxime sodium equivalent to Cefuroxime 250 mg.

CEFUROXIME-AFT 750 mg contains Cefuroxime sodium equivalent to Cefuroxime 750 mg.

CEFUROXIME-AFT 1.5 g contains Cefuroxime sodium equivalent to Cefuroxime 1.5 g.

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

CEFUROXIME-AFT injection contains either, 250 mg 750 mg, or 1.5 g of cefuroxime. Each 750 mg vial contains 41 mg sodium.

For full list of excipients, see Section 6.1 List of Excipients.

3. PHARMACEUTICAL FORM

Powder for injection.

4. CLINICAL PARTICULARS

4.1 Therapeutic Indications

Cefuroxime is a bactericidal cephalosporin antibiotic which is resistant to most β-lactamases and is active against a wide range of Gram-positive and Gram-negative organisms.

It is indicated for the treatment of infections before the infecting organism has been identified or when caused by sensitive bacteria. Susceptibility to cefuroxime sodium will vary with geography and time and local susceptibility data should be consulted where available (see Section 5.1 Pharmacodynamic properties).
Indications include:

- Respiratory tract infections for example, acute and chronic bronchitis, infected bronchiectasis, bacterial pneumonia, lung abscess and post-operative chest infections.
- Ear, nose and throat infections for example, sinusitis, tonsillitis, pharyngitis and otitis media.
- Urinary tract infections for example, acute and chronic pyelonephritis, cystitis and asymptomatic bacteriuria.
- Soft-tissue infections for example, cellulitis, erysipelas and wound infections.
- Bone and joint infections for example, osteomyelitis and septic arthritis.
- Obstetric and gynaecological infections, pelvic inflammatory diseases.
- Gonorrhoea particularly when penicillin is unsuitable.
- Other infections including septicaemia, meningitis and peritonitis.
- Prophylaxis against infection in abdominal, pelvic, orthopaedic, cardiac, pulmonary, oesophageal and vascular surgery where there is increased risk from infection.

Usually CEFUROXIME-AFT will be effective alone, but when appropriate it may be used in

combination with an aminoglycoside antibiotic, or in conjunction with metronidazole (orally or by suppository or injection), especially for prophylaxis in colonic or gynaecological surgery (see Section 4.4 Special warnings and precautions for use).

Where appropriate CEFUROXIME-AFT is effective when used prior to oral therapy with cefuroxime axetil in the treatment of pneumonia and acute exacerbations of chronic bronchitis.

4.2 Dose and method of administration

Dose

CEFUROXIME-AFT Injection for intravenous (IV) and/or intramuscular (IM) administration only.

No more than 750 mg should be injected at one intramuscular site.

General Recommendations

Adults

Many infections respond to 750 mg three times daily by intramuscular or intravenous injection. For more severe infections the dose should be increased to 1.5 g three times daily given intravenously. The frequency of administration may be increased to 6-hourly if necessary, giving total daily doses of 3 to 6 g. Where clinically indicated, some infections respond to 750 mg or 1.5 g twice daily (intravenously or intramuscularly) followed by oral therapy with cefuroxime axetil.

Infants and Children

30 to 100 mg/kg/day given as 3 or 4 divided doses. A dose of 60 mg/kg/day is appropriate for most infections.

Neonates

30 to 100 mg/kg/day given as 2 or 3 divided doses (see Section 5.2 Pharmacokinetic properties).

Gonorrhoea

Adults

1.5 g as a single dose (as 2 x 750 mg injections given intramuscularly with different sites, e.g. each buttock).

Meningitis

CEFUROXIME-AFT is suitable for sole therapy of bacterial meningitis due to sensitive strains.

Adults

3 g given intravenously every eight hours.

Infants and Children

150 to 250 mg/kg/day given intravenously in 3 or 4 divided doses.

Neonates

The dosage should be 100 mg/kg/day given intravenously.

Prophylaxis

Adults

The usual dose is 1.5 g given intravenously with induction of anaesthesia for abdominal, pelvic and orthopaedic operations. This may be supplemented with two 750 mg intramuscular doses eight and sixteen hours later.

In cardiac, pulmonary, oesophageal and vascular operations, the usual dose is 1.5 g given intravenously with induction of anaesthesia, continuing with 750 mg given intramuscularly three times daily for a further 24 to 48 hours.

In total joint replacement, 1.5 g cefuroxime powder may be mixed dry with each pack of methyl methacrylate cement polymer before adding the liquid monomer.

Sequential therapy

Adults

Duration of both parenteral and oral therapy is determined by the severity of the infection and the clinical status of the patient.

Pneumonia: 1.5 g CEFUROXIME-AFT three times daily or twice daily (given intravenously or intramuscularly) for 48 to 72 hours, followed by 500 mg twice daily cefuroxime axetil oral therapy for 7 to 10 days.

Acute exacerbations of chronic bronchitis: 750 mg CEFUROXIME-AFT three times daily or twice daily (given intravenously or intramuscularly) for 48 to 72 hours, followed by 500 mg twice daily cefuroxime axetil oral therapy for 5 to 10 days.

Special populations

Renal Impairment

Cefuroxime is excreted by the kidneys. Therefore, as with all such antibiotics, in patients with markedly impaired renal function it is recommended that the dosage of CEFUROXIME-AFT should be reduced to compensate for its slower excretion.

It is not necessary to reduce the standard dose (750 mg to 1.5 g three times daily) until the creatinine clearance falls to 20 mL/min or below.

In adults with marked impairment (creatinine clearance 10 to 20 mL/min) 750 mg twice daily is recommended and with severe impairment (creatinine clearance <10 mL/min) 750 mg once daily is adequate.

For patients on haemodialysis a further 750 mg dose should be given intravenously or intramuscularly at the end of each dialysis. In addition to parenteral use, cefuroxime can be incorporated into the peritoneal dialysis fluid (usually 250 mg for every 2 liters of dialysis fluid).

For patients in renal failure on continuous arteriovenous haemodialysis or high-flux haemofiltration in intensive therapy units a suitable dosage is 750 mg twice daily. For low-flux haemofiltration follow the dosage recommended under impaired renal function.

Cefuroxime is also available as the axetil ester for oral administration (ZINNAT). This permits parenteral therapy with cefuroxime to be followed by oral therapy in situations where a change from parenteral to oral is clinically indicated.

Method of administration

For instructions on reconstitution of the medicine before administration, see Section 6.6 Special precautions for disposal and other handling.

4.3 Contraindications

Hypersensitivity to cephalosporin antibiotics.

4.4 Special warnings and precautions for use

Special care is indicated in patients who have experienced an allergic reaction to penicillins or other beta-lactams.

Cephalosporin antibiotics at high dosage should be given with caution to patients receiving concurrent treatment with potent diuretics such as furosemide or aminoglycosides, as renal impairment has been reported with these combinations. Renal function should be monitored in these patients, the elderly, and those with pre-existing renal impairment (see Section 4.2 Dose and method of administration).

As with other therapeutic regimens used in the treatment of meningitis, mild-to-moderate hearing loss has been reported in a few paediatric patients treated with cefuroxime sodium. Persistence of positive cerebral spinal fluid (CSF) cultures of Haemophilus influenzae at 18 to 36 hours has also been noted with cefuroxime sodium injection, as well as with other antibiotic therapies; however, the clinical relevance of this is unknown.

As with other antibiotics, use of cefuroxime may result in the overgrowth of Candida. Prolonged use may also result in the overgrowth of other non-susceptible organisms (e.g. enterococci and Clostridium difficile), which may require interruption of treatment.

Pseudomembranous colitis has been reported with the use of antibiotics and may range in severity from mild to life-threatening. Therefore, it is important to consider its diagnosis in patients who develop diarrhoea during or after antibiotic use. If prolonged or significant diarrhoea occurs or the patient experiences abdominal cramps, treatment should be discontinued immediately and the patient investigated further.

Neurotoxicity

There have been reports of neurotoxicity associated with cephalosporin treatment. Symptoms of neurotoxicity include encephalopathy, seizures and/or myoclonus. Risk factors for developing neurotoxicity with cephalosporin treatment include being elderly, renal impairment, central nervous system disorders and intravenous administration. Withdrawal of the medicine should be considered if there are signs of neurotoxicity.

Hypersensitivity reactions

As with all beta-lactam antibacterial agents, serious and occasionally fatal hypersensitivity reactions have been reported. There have been reports of hypersensitivity reactions which progressed to Kounis syndrome (acute allergic coronary arteriospasm that can result in myocardial infarction, see section 4.8). In case of severe hypersensitivity reactions, treatment with cefuroxime must be discontinued immediately and adequate emergency measures must be initiated.

Before beginning treatment, it should be established whether the patient has a history of severe hypersensitivity reactions to cefuroxime, to other cephalosporins or to any other type of beta-lactam agent. Caution should be used if cefuroxime is given to patients with a history of non-severe hypersensitivity to other beta-lactam agents.

Severe cutaneous adverse reactions (SCARS)

Severe cutaneous adverse reactions including: Stevens-Johnson syndrome (SJS), toxic epidermal necrolysis {TEN) and drug reaction with eosinophilia and systemic symptoms (DRESS), which can be life-threatening or fatal, have been reported in association with cefuroxime treatment (see section 4.8).

At the time of prescription patients should be advised of the signs and symptoms and monitored closely for skin reactions. If signs and symptoms suggestive of these reactions appear, cefuroxime should be withdrawn immediately and an alternative treatment considered. If the patient has developed a serious reaction such as SJS, TEN or DRESS with the use of cefuroxime, treatment with cefuroxime must not be restarted in this patient at any time.

Intracameral use and ocular toxicity

Serious ocular toxicity, including corneal opacity, retinal toxicity and visual impairment has been reported following off-label intracameral use of CEFUROXIME-AFT. CEFUROXIME-AFT should not be administered intracamerally.

With a sequential therapy regime the timing of change to oral therapy is determined by severity of the infection, clinical status of the patient and susceptibility of the pathogens involved. If there is no clinical improvement within 72 hours, then the parenteral course of treatment must be continued.

Refer to the relevant prescribing information for cefuroxime axetil before initiating sequential

therapy.

4.5 Interaction with other medicines and other forms of interaction

In common with other antibiotics CEFUROXIME-AFT may affect the gut flora, leading to lower oestrogen reabsorption and reduced efficacy of combined oral contraceptives.

CEFUROXIME-AFT does not interfere in enzyme-based tests for glycosuria.

Slight interference with copper reduction methods (Benedict's, Fehling's, Clinitest) may be observed. However, this should not lead to false-positive results, as may be experienced with some other cephalosporins.

It is recommended that either the glucose oxidase or hexokinase methods are used to determine blood/plasma glucose levels in patients receiving Cefuroxime.

Cefuroxime does not interfere in the alkaline picrate assay for creatinine.

4.6 Fertility, pregnancy and lactation

Pregnancy

There is no experimental evidence of embryopathic or teratogenic effects attributable to cefuroxime, but, as with all medicines, it should be administered with caution during the early months of pregnancy.

Breast-feeding

Cefuroxime is excreted in human milk, and consequently caution should be exercised when CEFUROXIME-AFT is administered to a nursing mother.

Fertility

There are no data on the effects of cefuroxime sodium on fertility in humans.

4.7 Effects on ability to drive and use machines

No studies on the effects on the ability to drive and use machines have been performed. However, based on known adverse reactions, cefuroxime is unlikely to have an effect on the ability to drive and use machines.

4.8 Undesirable effects

Summary of the safety profile

Adverse drug reactions are very rare (<1/10,000) and are generally mild and transient in nature.

Tabulated summary of adverse reactions

The frequency categories assigned to the adverse reactions below are estimates, as for most reactions suitable data for calculating incidence are not available. In addition the incidence of

adverse reactions associated with cefuroxime sodium may vary according to the indication.

Data from clinical trials were used to determine the frequency of very common to rare undesirable effects. The frequencies assigned to all other undesirable effects (i.e., those occurring at <1/10,000) were mainly determined using post- marketing data, and refer to a reporting rate rather than a true frequency.

The following convention has been used for the classification of frequency:

Very common ≥1/10,
Common ≥1/100 to <1/10,
Uncommon ≥1/1000 to <1/100,
Rare ≥1/10,000 to <1/1000,
Very rare <1/10,000.

Infections and infestations

Rare	Candida overgrowth.

Blood and lymphatic system disorders

Common	Neutropenia, eosinophilia.
Uncommon	Leukopenia, decreased haemoglobin concentration, positive Coomb's test.
Rare	Thrombocytopenia.
Very rare	Haemolytic anaemia.

Cephalosporins as a class tend to be absorbed onto the surface of red cell membranes and react with antibodies directed against the drug to produce a positive Coomb's Test (which can interfere with cross matching of blood) and very rarely haemolytic anaemia.

Immune system disorders

Hypersensitivity reactions including:

Uncommon	Skin rash, urticaria and pruritus.
Rare	Drug fever.
Very rare	Interstitial nephritis, anaphylaxis, cutaneous vasculitis.

See also Skin and subcutaneous tissue disorders and Renal and urinary disorders.

Vascular disorders

Common	Thrombophlebitis may follow intravenous injection.

Gastrointestinal disorders

Uncommon	Gastrointestinal disturbance.
Very rare	Pseudomembranous colitis (see Section 4.4 Special warnings and precautions for use).

Hepatobiliary disorders

Common	Transient rise in liver enzymes.
Uncommon	Transient rise in bilirubin.

Transient rises in serum liver enzymes or bilirubin occur, particularly in patients with pre-existing liver disease, but there is no evidence of harm to the liver.

Skin and subcutaneous tissue disorders

Not Known	Erythema multiforme, toxic epidermal necrolysis and Stevens Johnson syndrome, angioneurotic oedema, Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS).

See also Immune system disorders.

Renal and urinary disorders

Very rare	Elevations in serum creatinine, elevations in blood urea nitrogen and decreased creatinine clearance (see Section 4.4 Special warnings and precautions for use).

See also Immune system disorders.

General disorders and administration site conditions

Common	Injection site reactions which may include pain and thrombophlebitis

Pain at the intramuscular injection site is more likely at higher doses. However it is unlikely to be a cause for discontinuation of treatment.

Cardiac disorders

Not known	Kounis syndrome

Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicine is important. It allows continued monitoring of the benefit/risk balance of the medicine. Healthcare professionals are asked to report any suspected adverse reactions via: https://pophealth.my.site.com/carmreportnz/s/

4.9 Overdose

Overdosage of cephalosporins can cause cerebral irritation leading to convulsions. Serum levels of cefuroxime can be reduced by haemodialysis or peritoneal dialysis.

For advice on the management of overdose please contact the National Poisons Centre on 0800 POISON (0800 764766).

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: antibacterial for systemic use, second- generation cephalosporins, ATC code: J01DC02

Mechanism of Action

Cefuroxime is a well characterised and effective antibacterial agent which has bactericidal activity against a wide range of common pathogens, including β-lactamase producing strains.

Cefuroxime has good stability to bacterial β-lactamase, and consequently is active against many ampicillin-resistant or amoxycillin-resistant strains.

The bactericidal action of cefuroxime results from inhibition of cell wall synthesis by binding to essential target proteins.

Pharmacodynamic Effects

The prevalence of acquired resistance is geographically and time dependent and for select species may be very high. Local information on resistance is desirable, particularly when treating severe infections.

In vitro susceptibility of micro-organisms to Cefuroxime

Where clinical efficacy of cefuroxime has been demonstrated in clinical trials this is indicated with an asterisk (*).

Commonly Susceptible Species

Gram-Positive Aerobes:

Staphylococcus aureus (methicillin susceptible)*
Coagulase negative staphylococcus (methicillin susceptible)
Streptococcus pyogenes*
Beta-hemolytic streptococci
Gram-Negative Aerobes:

Haemophilus influenzae including ampicillin resistant strains*

Haemophilus parainfluenzae*
Moraxella catarrhalis*
Neisseria gonorrhoea* including penicillinase and non-penicillinase producing strains
Neisseria meningitidis
Shigella spp.
Gram-Positive Anaerobes:
Peptostreptococcus spp.
Propionibacterium spp.

Spirochetes:
Borrelia burgdorferi*

Organisms for which acquired resistance may be a problem

Gram-Positive Aerobes:

Streptococcus pneumoniae*
Viridans group streptococcus

Gram-Negative Aerobes:

Bordetella pertussis
Citrobacter spp. not including C. freundii
Enterobacter spp. not including E. aerogenes and E. cloacae
Escherichia coli*
Klebsiella spp. including K. pneumoniae*
Proteus mirabilis
Proteus spp. not including P. penneri and P. vulgaris Providencia spp.
Salmonella spp.

Gram-Positive Anaerobes:
Clostridium spp. not including C. difficile

Gram-Negative Anaerobes:
Bacteroides spp. not including B. fragilis
Fusobacterium spp.

Inherrently resistant organisms

Gram-Positive Aerobes:
Enterococcus spp. including E. faecalis and E. faecium
Listeria monocytogenes

Gram-Negative Aerobes:
Acinetobacter spp. Burkholderia cepacia
Campylobacter spp.
Citrobacter freundii
Enterobacter aerogenes
Enterobacter cloacae
Morganella morganii
Proteus penneri
Proteus vulgaris
Pseudomonas spp. including P. aeruginosa Serratia spp.
Stenotrophomonas maltophilia

Gram-Positive Anaerobes:
Clostridium difficile

Gram-Negative Anaerobes:
Bacteroides fragilis

Others:
Chlamydia species Mycoplasma species Legionella specie

5.2 Pharmacokinetic properties

Absorption

Peak levels of cefuroxime are achieved within 30 to 45 minutes after intramuscular administration.

Distribution

Protein binding has been variously stated as 33 to 50% depending on the methodology used.

Concentrations of cefuroxime in excess of the minimum inhibitory levels for common pathogens can be achieved in bone, synovial fluid and aqueous humour. Cefuroxime passes the blood-brain barrier when the meninges are inflamed.

Biotransformation

Cefuroxime is not metabolised and is excreted by glomerular filtration and tubular secretion.

Elimination

The serum half-life after either intramuscular or intravenous injection is approximately 70 minutes.

In the first weeks of life the serum half-life of cefuroxime can be 3 to 5 times that in the adult.

Concurrent administration of probenecid prolongs the excretion of the antibiotic and produces an elevated peak serum level. There is an almost complete recovery (85-90%) of unchanged cefuroxime in urine within 24 hours of administration. The major part is excreted in the first six hours. Serum l e v e l s of cefuroxime are reduced by dialysis.

5.3 Preclinical safety data

No additional data of relevance.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

None.

6.2 Incompatibilities

CEFUROXIME-AFT should not be mixed in the syringe with aminoglycoside antibiotics.

The pH of 2.74% w/v sodium bicarbonate injection BP considerable affects the colour of the solution and therefore this solution is not recommended for the dilution of CEFUROXIME-AFT. However, if required, for patients receiving sodium bicarbonate injection by infusion the CEFUROXIME-AFT may be introduced into the tube of the giving set.

6.3 Shelf life

24 months from date of manufacture stored at or below 25°C protect from light.

Reconstituted solution can be stored for 24 hours at 2° to 8°C (Refrigerate, do not freeze).

6.4 Special precautions for storage

Store below 25 °C. Protect from light.

It is recommended that the reconstituted suspensions or solutions be used immediately after preparation but they are stable for up to 24 hours when stored in the refrigerator.

Some increase in the colour of prepared solutions and suspensions of CEFUROXIME-AFT may occur on storage.

6.5 Nature and contents of container

Cefuroxime-AFT 250 mg, 750 mg and 1.5 g are available in packs containing 1 and 10 vials.

6.6 Special precautions for disposal and other handling

Cefuroxime sodium is a white to off-white powder which when reconstituted with appropriate amounts of water provides either an off-white suspension for intramuscular (I.M) use or a yellow solution for intravenous (I.V.) use. Variations in colour intensity do not indicate any change in the product safety or efficacy.

Instructions for reconstitution

Intramuscular

CEFUROXIME-AFT 250 mg and 750 mg vials are intended for I.M. administration. Add into the vial, 1 mL of Water for Injections to the 250 mg strength or 3 mL of Water for Injections to the 750 mg strength. Shake well to obtain a suspension.

Intravenous

Add 2 mL, 6 mL and 15 mL of Water for Injections to the 250 mg, 750 mg and 1.5 g vials respectively. Shake well to obtain a clear solution.

Intravenous infusion

Dissolve 1.5g of cefuroxime sodium in 15 ml of Water for Injections. Add the reconstituted solution of cefuroxime sodium to 50 or 100 ml of a compatible infusion fluid (see information on Compatibility below). These solutions may be given directly into the vein or introduced into the tubing of the giving set if the patient is receiving parenteral fluids.

Compatibility

1.5 g CEFUROXIME-AFT reconstituted with 15 mL Water for Injections may be added to metronidazole injection (500 mg/100 mL) with both retaining their activity for up to 24 hours when stored below 25°C.

1.5 g CEFUROXIME-AFT is compatible with azlocillin 1 g (in 15 mL) or 5 g (in 50 mL) for up to 24 hours under refrigeration (2-8 °C) or for 6 hours below 25°C.

CEFUROXIME-AFT (5 mg/mL) in 5% w/v or 10% w/v xylitol injection may be stored for up to 24 hours at 25°C.

CEFUROXIME-AFT may be constituted for IM use with aqueous solutions containing up to 1% lignocaine hydrochloride.

CEFUROXIME-AFT is compatible with the more commonly used intravenous infusion fluids. It will retain potency for up to 24 hours at room temperature in:

- Sodium Chloride Injection BP 0.9% w/v.
- 5% Dextrose Injection BP.
- 0.18% w/v Sodium Chloride plus 4% Dextrose Injection BP.
- 5% Dextrose and 0.9% Sodium Chloride Injection.
- 5% Dextrose and 0.45% Sodium Chloride Injection.
- 5% Dextrose and 0.225% Sodium Chloride Injection.
- 10% Dextrose Injection.
- 10% Invert Sugar in Water for Injection.
- Ringer's Injection USP.
- Lactated Ringer's Injection USP.
- M/6 Sodium Lactate Injection.
- Compound Sodium Lactate Injection BP (Hartmann's Solution).

The stability of CEFUROXIME-AFT in Sodium Chloride Injection BP 0.9% w/v and in 5% Dextrose Injection is not affected by the presence of hydrocortisone sodium phosphate.

CEFUROXIME-AFT has been found compatible for 24 hours at room temperature when admixed in intravenous infusion with:

- Heparin (10 and 50 units/mL) in 0.9% Sodium Chloride Injection;
- Potassium Chloride (10 and 40mEqL) in 0.9% Sodium Chloride Injection.

Any unused medicine or waste material should be disposed of in accordance with local requirements.

7. MEDICINE SCHEDULE

Prescription Medicine

8. SPONSOR

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9. DATE OF FIRST APPROVAL

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10. DATE OF REVISION OF THE TEXT

11 May 2026

Summary table of changes:

Section changed	Summary of new information
4.4	Addition of Hypersensitivity reactions
4.8	Addition of cardiovascular adverse effects and Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS)