Tupime Injection
Cefepime USP

Composition:

Tupime 1 gm IM/IV Injection: Each vial contains Cefepime Hydrochloride with L-Arginine sterile powder equivalent to Cefepime USP 1 gm.

Description:

Cefepime is a fourth generation cephalosporin, acts by inhibition of bacterial cell wall synthesis and is active against a wide range of gram-positive and gram-negative aerobic organisms. Against gram-positive cocci, its activity is similar to that of cefotaxime and includes staphylococci (but not methicillin-resistant *Staphylococcus aureus*) and streptococci. Against Enterobacteriaceae, it has a broader spectrum of activity than other cephalosporins, including activity against organisms producing chromosomally mediated beta-lactamases such as Enterobacter species and *Proteus vulgaris.*

Indication:

Pneumonia (moderate to severe): caused by *Streptococcus pneumoniae,* including cases associated with concurrent bacteremia*, Pseudomonas aeruginosa, Klebsiella pneumoniae* or Enterobacter species.

Febrile neutropenia: Cefepime as monotherapy is indicated for empiric treatment of febrile neutropenic patients. In patients at high risk for severe infection (including patients with a history of recent bone marrow transplantation, with hypotention at presentation, with an underlying haematologic malignancy, or with severe or prolonged neutropenia), antimicrobial monotherapy may not be appropriate. Insufficient data exist to support the efficacy of cefepime monotherapy in such patients.

Uncomplicated and complicated urinary tract infections (including pyelonephritis): caused by *Escherichia coli* or *Klebsiella pneumoniae*, when the infection is severe, or caused by *Escherichia coli*, *Klebsiella pneumoniae*, or *Proteus mirabilis*, when the infection is mild to moderate, including cases associated with concurrent bacteremia with these microorganisms.

Uncomplicated skin and skin structure infections: caused by *Staphylococcus aureus* (methicillin-susceptible strains only) or *Streptococcus pyogenes*.

Complicated intra-abdominal infections (used in combination with metronidazole): caused by *Escherichia coli*, viridans group streptococci, *Pseudomonas aeruginosa, Klebsiella pneumoniae*, Enterobacter species or *Bacteroides fragilis*.

Dosage and Administration:

Cefepime should be administered intravenously very slowly over approximately 30 minutes.

Recommended dosage schedule for adults with normal renal function:

Type of Infection	Dose	Frequency	Duration (Days)
Moderate to severe Pneumonia	1-2 g IV	12 hourly	10
Empiric Therapy for Febrile Neutropenic Patients	2 g IV	8 hourly	7
Mild to moderate Uncomplicated or Complicated Urinary Tract Infections (including pyelonephritis)	0.5-1 g IV/IM	12 hourly	7-10
Severe Uncomplicated or Complicated Urinary Tract Infections (including pyelonephritis)	2 g IV	12 hourly	10
Moderate to severe Uncomplicated Skin and Skin Structure Infections	2 g IV	12 hourly	10
Complicated Intra-abdominal Infections	2 g IV	12 hourly	7-10

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Pediatric Patients (2 months up to 16 years): The usual recommended daily dosage of Tupime in pediatric patients weighing up to 40 kg is 50 mg/kg 8 or 12 hourly for 7 to 10 days. The maximum dose for pediatric patients should not exceed the recommended adult dose.

Type of Infection	Pediatric patients up to 40 kg body weight	Dose Frequency	Duration (Days)
Pneumonia	50 mg/kg	12 hourly	10
Febrile Neutropenic Patients	50 mg/kg	8 hourly	7
Uncomplicated and Complicated Urinary Tract Infections (including pyelonephritis)	50 mg/kg	12 hourly	7-10
Uncomplicated Skin and Skin Structure Infections	50 mg/kg	12 hourly	10

Impaired Hepatic Function - No adjustment is necessary for patients with impaired hepatic function.

Impaired Renal Function - In patients with impaired renal function (creatinine clearance <60 ml/min), the dose of Cefepime should be adjusted. The recommended initial dose of Cefepime should be the same as in patients with normal renal function except in patients undergoing hemodialysis. The maintenance doses of cefepime in patients with renal insufficiency are-

Creatinine clearance (ml/min)	Recommended Maintenance Dosage			
> 60, Usual dose, no adjustment necessary	500 mg 12 hourly	1 g 12 hourly	2 g 12 hourly	2 g 8 hourly
30-60	500 mg 24 hourly	1 g 24 hourly	2 g 24 hourly	1 g 8 hourly
11-19	500 mg 24 hourly	500 mg 24 hourly	1 g 24 hourly	1 g 12 hourly
<11	250 mg 24 hourly	500 mg 24 hourly	500 mg 24 hourly	1 g 12 hourly

Side-effects:

The most common adverse effects are hypersensitivity reactions, including skin rashes, urticaria, eosinophilia, fever, reactions resembling serum sickness and anaphylaxis, increased sweating, peripheral oedema, blurred vision, taste disturbance and hyponatremia.

Drug Interaction:

Renal function should be monitored carefully if high doses of aminoglycosides are to be administered with cefepime, because of the increased potential of nephrotoxicity and ototoxicity of aminoglycoside antibiotics. Nephrotoxicity has been reported following concomitant administration of other cephalosporins with potent diuretics such as frusemide.

Contraindication:

Cefepime is contraindicated in patients who have demonstrated hypersensitivity to this product.

Precaution:

Cefepime should not be given to patients who are hypersensitive to it or other cephalosporins. About 10% of penicillin sensitive patients may also be allergic to cephalosporins although the true incidence is uncertain; great care should be taken if it is to be given to such patients. Care is also necessary in patients with a history of allergy. It should be given with caution to patients with renal impairment; a dosage reduction may be necessary.

Over dosage:

Patients who receive an overdose should be carefully observed and given supportive treatment. In the presence of renal insufficiency, hemodialysis, not peritoneal dialysis, is recommended to aid in the removal of cefepime from the body. Accidental overdosing might occur if large doses are given to patients with reduced renal function. In clinical trials, cefepime overdosage has occurred in a patient with renal failure (creatinine clearance <11 ml/min) who received 2 gm 24 hourly for 7 days. The patient has exhibited seizures, encephalopathy and neuromuscular excitability.

Preparation of Solutions of Tupime Injection:

Single-dose vial Administration - Amount of WFI to be added 1 gm IM 2.4 ml & 1 gm IV 10 ml.

Pharmaceutical Precaution:

Tupime Injection should be stored in a cool & dry place, away from light.

Commercial Pack:

Tupime 1 gm IM/IV Injection: Each combipack contains one vial with one ampoule of 10 ml Water for Injection BP, a 10 ml disposable syringe, a butterfly needle and an alcohol prep. pad.

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KEMIKO PHARMACEUTICALS LTD.
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