SOTAXIM Injection

(Cefotaxime Sodium USP)

سوٹیگزم انجیکشن

(سیفوٹیگزم سوڈیم - یو ایس پی)

COMPOSITION

Sotaxim Injection 250mg
Each vial contains:
Cefotaxime sodium eq. to cefotaxime (USP)…….....250mg
Sotaxim Injection 500mg
Each vial contains:
Cefotaxime sodium eq. to cefotaxime (USP)…….....500mg
Sotaxim Injection 1g
Each vial contains:
Cefotaxime sodium eq. to cefotaxime (USP)…….....1g
Sotaxim Injection 2g
Each vial contains:
Cefotaxime sodium eq. to cefotaxime (USP)…….....2g
Product complies USP specs.

DESCRIPTION:

Cefotaxime sodium is a semisynthetic, broad spectrum cephalosporin antibiotic for parenteral administration. It has broad spectrum activity against Gram positive and Gram negative bacteria.

INDICATIONS:

Sotaxim is indicted in the following:

Lower respiratory tract infections: including pneumonia, caused by Streptococcus pneumoniae (formerly Diplococcus pneumoniae), Streptococcus pyogenes (Group A streptococci) and other streptococci (excluding enterococci, e.g., Enterococcus faecalis), Staphylococcus aureus (penicillinase and non-penicillinase producing), Escherichia coli, Klebsiella species, Haemophilus influenzae (including ampicillin resistant strains), Haemophilus parainfluenzae, Proteus mirabilis, Serratia marcescens, Enterobacter species, indole positive Proteus and Pseudomonas species (including P. aeruginosa).

Genitourinary infections: Urinary tract infections caused by Enterococcus species, Staphylococcus epidermidis, Staphylococcus aureus, (penicillinase and non-penicillinase producing), Citrobacter species, Enterobacter species, Escherichia coli, Klebsiella species, Proteus mirabilis, Proteus vulgaris, Providencia stuartii, Morganella morganii, Providencia rettgeri, Serratia marcescens and Pseudomonas species (including P. aeruginosa). Also, uncomplicated gonorrhea (cervical/urethral and rectal) caused by Neisseria gonorrhoeae, including penicillinase producing strains.

Gynecologic infections: including pelvic inflammatory disease, endometritis and pelvic cellulitis caused by Staphylococcus epidermidis, Streptococcus species, Enterococcus species, Enterobacter species, Klebsiella species, Escherichia coli, Proteus mirabilis, Bacteroides species (including Bacteroides fragilis), Clostridium species, and anaerobic cocci (including Peptostreptococcus species and Peptococcus species) and Fusobacterium species (including F. nucleatum). Cefotaxime, like other cephalosporins, has no activity against Chlamydia trachomatis. Therefore, when cephalosporins are used in the treatment of patients with pelvic inflammatory disease and C. trachomatis is one of the suspected pathogens, appropriate anti-chlamydial coverage should be added.

Bacteremia/Septicemia: caused by Escherichia coli, Klebsiella species, and Serratia marcescens, Staphylococcus aureus and Streptococcus species (including S. pneumonia).

Skin and skin structure infections: caused by Staphylococcus aureus (penicillinase and nonpenicillinase producing), Staphylococcus epidermidis, Streptococcus pyogenes (Group A streptococci) and other streptococci, Enterococcus species, Acinetobacter species, Escherichia coli, Citrobacter species (including C. freundii), Enterobacter species, Klebsiella species, Proteus mirabilis, Proteus vulgaris, Morganella morganii, Providencia rettgeri, Pseudomonas species, Serratia marcescens, Bacteroides species, and anaerobic cocci (including Peptostreptococcus species and Peptococcus species).

Intra-abdominal infections: including peritonitis caused by Streptococcus species, Escherichia coli, Klebsiella species, Bacteroides species, and anaerobic cocci (including Peptostreptococcus species and Peptococcus species) Proteus mirabilis, and Clostridium species.

Bone and/or joint infections: caused by Staphylococcus aureus (penicillinase and non-penicillinase producing strains), Streptococcus species (including S. pyogenes), Pseudomonas species (including P. aeruginosa), and Proteus mirabilis.

Central nervous system infections: e.g., meningitis and ventriculitis, caused by Neisseria meningitidis, Haemophilus influenzae, Streptococcus pneumoniae, Klebsiella pneumoniae and Escherichia coli.

MECHANISM OF ACTION

Cefotaxime is a β-lactam antibiotic, inhibit bacterial cell wall synthesis by binding to one or more of the penicillin-binding proteins (PBPs). This inhibits the final transpeptidation step of peptidoglycan synthesis in bacterial cell walls, thus inhibiting cell wall biosynthesis. Bacteria eventually lyse due to ongoing activity of cell wall autolytic enzymes (autolysins and murein hydrolases) in the absence of cell wall assembly. Due to the mechanism of their attack on bacterial cell wall synthesis, β-lactams are considered to be bactericidal.

DOSAGE & ADMINISTRATION

Adults

Dosage and route of administration should be determined by susceptibility of the causative organisms, severity of the infection, and the condition of the patient. CEFOTAXIME may be administered IM or IV after reconstitution. Premixed CEFOTAXIME Injection is intended for IV administration after thawing. The maximum daily dosage should not exceed 12 grams.

Type of Infection	Daily Dose (grams)	Frequency and Route
Gonococcal urethritis/ cervicitis in males and females	0.5	0.5 gram IM (single dose)
Rectal gonorrhea in females		0.5 gram IM (single dose)
Rectal gonorrhea in males	1	1 gram IM (single dose)
Uncomplicated infections	2	1 gram every 12 hours IM or IV
Moderate to severe infections	3-6	1-2 grams every 8 hour IM or IV
Infections commonly needing antibiotics in higher dosage (e.g., septicemia)	6-8	2 grams every 6 -8 hours IV
Life-threatening infections	up to 12	2 grams every 4 hours IV

If C. trachomatis is a suspected pathogen, appropriate anti-chlamydial coverage should be added, because cefotaxime sodium has no activity against this organism. To prevent postoperative infection in contaminated or potentially contaminated surgery, the recommended dose is a single 1 gram IM or IV administered 30 to 90 minutes prior to start of surgery.

Cesarean Section Patients

The first dose of 1 gram is administered intravenously as soon as the umbilical cord is clamped. The second and third doses should be given as 1 gram intravenously or intramuscularly at 6 and 12 hours after the first dose.

Neonates, Infants, and Children

The following dosage schedule is recommended:
Neonates (birth to 1 month):
0-1 week of age 50 mg/kg per dose every 12 hours IV
1-4 weeks of age 50 mg/kg per dose every 8 hours IV
It is not necessary to differentiate between premature and normal-gestational age infants.

Infants and Children (1 month to 12 years):

For body weights less than 50 kg, the recommended daily dose is 50 to 180 mg/kg IM or IV body weight divided into four to six equal doses. The higher dosages should be used for more severe or serious infections, including meningitis. For body weights 50 kg or more, the usual adult dosage should be used; the maximum daily dosage should not exceed 12 grams.

Geriatric Use

This drug is known to be substantially excreted by the kidney, and the risk of toxic reactions to this drug may be greater in patients with impaired renal function. Because elderly patients are more likely to have decreased renal function, care should be taken in dose selection, and it may be useful to monitor renal function.

PREPARATION OF SOLUTION

Compatible diluent for IM and IV preparation is sterile water for injection.

Strength(mg)	Volume of diluent(ml)
250mg IM	2
500mg IM	2
1g IM	4
250mg IV	2
500mg IV	2
1g IV	4
2g IV	10

Reconstitute the vial with the appropriate volume of sterile water for injection and shake to dissolve. Use freshly Prepared solution.

NOTE: Solutions of cefotaxime must not be admixed with aminoglycoside solutions. If cefotaxime and aminoglycosides are to be administered to the same patient, they must be administered separately and not as mixed injection.

PHARMACOKINETICS

Following IM administration of a single 500 mg or 1 g dose of cefotaxime to normal volunteers, mean peak serum concentrations of 11.7 and 20.5 mcg/mL respectively were attained within 30 minutes and declined with an elimination half-life of approximately 1 hour. There was a dose-dependent increase in serum levels after the IV administration of 500 mg, 1 g, and 2 g of CEFOTAXIME (38.9, 101.7, and 214.4 mcg/mL respectively) without alteration in the elimination half-life. There is no evidence of accumulation following repetitive IV infusion of 1 g doses every 6 hours for 14 days as there are no alterations of serum or renal clearance. About 60% of the administered dose was recovered from urine during the first 6 hours following the start of the infusion. Approximately 20-36% of an intravenously administered dose of 14C-cefotaxime is excreted by the kidney as unchanged cefotaxime and 15-25% as the desacetyl derivative, the major metabolite. The desacetyl metabolite has been shown to contribute to the bactericidal activity. Two other urinary metabolites (M2 and M3) account for about 20-25%. They lack bactericidal activity.

A single 50 mg/kg dose of cefotaxime was administered as an intravenous infusion over a 10- to 15 minute period to 29 newborn infants grouped according to birth weight and age. The mean half-life of cefotaxime in infants with lower birth weights (≤ 1500 grams), regardless of age, was longer (4.6 hours) than the mean half-life (3.4 hours) in infants whose birth weight was greater than 1500 grams. Mean serum clearance was also smaller in the lower birth weight infants. Although the differences in mean half-life values are statistically significant for weight, they are not clinically important. Therefore, dosage should be based solely on age.

PRECAUTIONS

Prescribing CEFOTAXIME in the absence of a proven or strongly suspected bacterial infection or a prophylactic indication is unlikely to provide benefit to the patient and increases the risk of the development of drug-resistant bacteria. cefotaxime should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis. Because high and prolonged serum antibiotic concentrations can occur from usual doses in patients with transient or persistent reduction of urinary output because of renal insufficiency, the total daily dosage should be reduced when cefotaxime is administered to such patients. Continued dosage should be determined by degree of renal impairment, severity of infection, and susceptibility of the causative organism. Although there is no clinical evidence supporting the necessity of changing the dosage of cefotaxime sodium in patients with even profound renal dysfunction, it is suggested that, until further data are obtained, the dose of cefotaxime sodium be halved in patients with estimated creatinine clearances of less than 20 mL/min/1.73 m^2. When only serum creatinine is available, the following formula5 (based on sex, weight, and age of the patient) may be used to convert this value into creatinine clearance. The serum creatinine should represent a steady state of renal function.

Weight (kg) x (140 - age)
Males: 72 x serum creatinine
Females: 0.85 x above value

As with other antibiotics, prolonged use of cefotaxime may result in overgrowth of non-susceptible organisms. Repeated evaluation of the patient's condition is essential. If superinfection occurs during therapy, appropriate measures should be taken.

As with other beta-lactam antibiotics, granulocytopenia and, more rarely, agranulocytosis may develop during treatment with cefotaxime, particularly if given over long periods. For courses of treatment lasting longer than 10 days, blood counts should therefore be monitored.

Cefotaxime, like other parenteral anti-infective drugs, may be locally irritating to tissues. In most cases, perivascular extravasation of cefotaxime responds to changing of the infusion site. In rare instances, extensive perivascular extravasation of cefotaxime may result in tissue damage and require surgical treatment. To minimize the potential for tissue inflammation, infusion sites should be monitored regularly and changed when appropriate.

Pregnancy

Pregnancy Category B

Although cefotaxime has been reported to cross the placental barrier and appear in cord blood, the effect on the human fetus is not known. There are no well-controlled studies in pregnant women. Because animal reproductive studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing mothers

Cefotaxime is excreted in human milk in low concentrations. Caution should be exercised when cefotaxime is administered to a nursing woman.

DRUG INTERACTIONS

- Increased nephrotoxicity has been reported following concomitant administration of cephalosporins and aminoglycoside antibiotics. Probenecid interferes with the renal tubular transfer of cefotaxime, decreasing the total clearance of cefotaxime by approximately 50% and increasing the plasma concentrations of cefotaxime. Administration of cefotaxime in excess of 6 grams/day should be avoided in patients receiving probenecid.
- Cephalosporins, including cefotaxime sodium, are known to occasionally induce a positive direct Coombs' test.

SIDE EFFECTS

Cefotaxime is generally well tolerated. The most common adverse reactions have been local reactions following IM or IV injection. Other adverse reactions have been encountered infrequently.

- The most frequent adverse reactions (greater than 1%) are:

Local (4.3%) - Injection site inflammation with IV administration. Pain, induration, and tenderness after IM injection.
Hypersensitivity (2.4%) - Rash, pruritus, fever, eosinophilia.
Gastrointestinal (1.4%) - Colitis, diarrhea, nausea, and vomiting.
Symptoms of pseudomembranous colitis can appear during or after antibiotic treatment. Nausea and vomiting have been reported rarely.

- Less frequent adverse reactions (less than 1%) are:

Hematologic System - Neutropenia, transient leukopenia, have been reported. Some individuals have developed positive direct Coombs Tests during treatment with cefotaxime and other cephalosporin antibiotics.
Genitourinary System - Moniliasis, vaginitis.
Central Nervous System - Headache.
Liver - Transient elevations in AST, ALT, serum LDH, and serum alkaline phosphatase levels have been reported.
Kidney - As with some other cephalosporins, transient elevations of BUN have been occasionally observed with cefotaxime.

CONTRAINDICATIONS

Cefotaxime is contraindicated in patients who have shown hypersensitivity to cefotaxime sodium, or the cephalosporin group of antibiotics.

STORAGE & INSTRUCTIONS

Store between 15-25°C. Protect from heat, sunlight and moisture. Keep away from the reach of the children. Reconstituted solution is stable for 24 hours when stored in a refrigerator (2-8°C) & protected from light.

To be sold on precscription of a registered medical practitioner only.

HOW SUPPLIED

Sotaxim Injection 250mg
1 vial
Sotaxim Injection 500mg
1 vial
Sotaxim Injection 1g
1 vial
Sotaxim Injection 2g
1 vial

خوراک وطریقہ استعمال:
ڈاکٹر کی ہدایات کے مطابق استعمال کریں۔

ہدایات:

دوا کو ۱۵-۲۵ ڈگری سینٹی گریڈ درجہ حرارت کے درمیان رکھیں۔ دھوپ، گرمی اور نمی سے بچائیں۔

بچوں کی پہنچ سے دور رکھیں۔ انجیکشن کے لیے تازہ تیار کردہ محلول استعمال کریں۔ تیار شدہ محلول ریفریجریٹر میں رکھنے کی صورت میں ۲۴ گھنٹے تک قابلِ استعمال رہتا ہے صرف معتمد ڈاکٹر کے نسخہ پر فروخت کریں۔

Manufactured by:
PHARMASOL PRIVATE LIMITED
Plot # 549,Sundar Industrial Estate,
Lahore, Pakistan.