Stability:
Intact vials should be stored at controlled room temperature and protected from light. The drug is present as a white to off-white powder. Reconstituted solutions may range in color from light yellow to amber. Both the powder and solutions of cefuroxime sodium darken, depending on storage conditions, without affecting their potency.

The reconstituted suspension is stable for 24 hours at room temperature and 48 hours when refrigerated at 5°C.

Extemporaneously prepared solutions of cefuroxime 750mg is stable for six months at -20°C. It is not recommended to use water baths or microwaves for thawing. Following thawing at room temperature, the solution is stable for 24 hours at room temperature or seven days under refrigeration. The thawed solutions should not be frozen.

Incompatibilities:
Cefuroxime sodium should not be mixed in the syringe with aminoglycoside antibiotics or metronidazole.

The pH of 2.74% w/v sodium bicarbonate injection considerably affects the color of solutions and therefore this solution is not recommended for the dilution of cefuroxime sodium. If required, the cefuroxime sodium solution in water for injections can be introduced into the tubing of the giving set in patients receiving sodium bicarbonate solution by infusion.

Compatibilities:
Cefuroxime sodium is chemically and physically compatible with the following IV solutions: 0.9% sodium chloride injection, 5% or 10% dextrose, 5% dextrose containing 0.2%, 0.225%, 0.45% or 0.9% sodium chloride injection, 10% invert sugar, Ringer's injection, Lactated Ringer's injection, M/6 sodium lactate injection.

Administration:
The reconstituted Injection is given by deep IM injection into a large muscle mass (such as the gluteus or lateral part of the thigh). Before injecting intramuscularly, aspiration is necessary to avoid inadvertent injection into a blood vessel.

For direct intermittent IV administration, slowly inject into a vein over a period of 3 to 5 minutes or give it through the tubing system by which the patient is also receiving other IV solutions.

For intermittent IV infusion with a Y-type administration set, dosing can be accomplished through the tubing system by which the patient may be receiving other IV solutions. However, during infusion of the solution containing Cefuroxime, it is advisable to temporarily discontinue administration of any other solutions at the same site.

Availability: USP Type I Glass Vial with secondary box (Box of 1 vial)

Date of First Authorization: September 2006
Registration No.: DR-XY32247
Revision Date: July 2019

STORE AT TEMPERATURES NOT EXCEEDING 30°C.
KEEP IN COOL DRY PLACE

Manufactured by
Samjin Pharm. Co., Ltd
52, Jeyakgongdan 1-gil,
Hyangnam-eup, Hwaseong-si,
Gyeonggi-do, Korea
Imported, Repacked and Distributed by
Natrapharm, Inc.
The Patriot Building,
Km. 18, West Service Road,
SLEX, Parañaque City

NTZTX750001IN1801

Natrapharm

Cefuroxime

Zoltax®

750 mg Powder for Injection (I.M./I.V.)
Antibacterial

Formulation:
Each vial contains:
Cefuroxime (as sodium) ..... 750 mg

Cefuroxime is a white to faintly-yellow powder to which appropriate water are added to prepare a solution for intramuscular or intravenous administration.

Indications:
Cefuroxime is a second-generation cephalosporin antibiotic used in the treatment of susceptible infections. These have included bone and joint infections, bronchitis (and other lower respiratory-tract infections) gonorrhea, meningitis (although treatment failures have been reported in *Haemophilus influenza* meningitis), otitis media, peritonitis, pharyngitis, sinusitis, skin infections (including soft-tissue infection) and urinary tract infections.

Cefuroxime is also used for surgical infection prophylaxis

Microbiological actions:
Cefuroxime for Injection is indicated for the treatment of patients with infections caused by susceptible strains of the designated organisms in the following diseases:

1. Lower Respiratory Tract Infections, including pneumonia, caused by *Streptococcus pneumoniae, Haemophilus influenzae* (including ampicillin-resistant strains), *Klebsiella* spp., *Staphylococcus aureus* (penicillinase- and non-penicillinase-producing strains), *Streptococcus pyrogenes*, and *Escherichia coli*.
2. Urinary Tract Infections caused by *Escherichia coli* and *Klebsiella* spp.
3. Skin and Skin-Structure Infections caused by *Staphylococcus aureus* (penicillinase- and non-penicillinase-producing strains), *Streptococcus pyogenes, Escherichia coli, Klebsiella* spp., and *Enterobacter* spp.
4. Septicemia caused by Staphylococcus aureus (penicillinase- and non-penicillinase-producing strains), *Streptococcus pneumoniae, Escherichia coli, Haemophilus influenzae* (including ampicillin-resistant strains), and *Klebsiella* spp.
5. Meningitis caused by *Streptococcus pneumoniae, Haemophilus influenzae* (including ampicillin-resistant strains), *Neisseria meningitidis*, and *Staphylococcus aureus* (penicillinase- and non-penicillinase-producing strains).
6. Gonorrhea: Uncomplicated and disseminated gonococcal infections due to *Neisseria gonorrhoeae* (penicillinase- and non-penicillinase-producing strains) in both males and females.
7. Bone and Joint Infections caused by *Staphylococcus aureus* (penicillinase- and non-penicillinase producing strains).

Clinical microbiological studies in skin and skin-structure infections frequently reveal the growth of susceptible strains of both aerobic and anaerobic organisms. Cefuroxime has been used successfully in these mixed infections in which several organisms have been isolated.
In certain cases of confirmed or suspected Gram-positive or Gram-negative sepsis or in patients with other serious infections in which the causative organism has not been identified, cefuroxime may be used concomitantly with an aminoglycoside. The recommended doses of both antibiotics may be given depending on the severity of the infection and the patient's condition.

Prevention: It is also used for surgical infection prophylaxis.
The preoperative prophylactic administration of Cefuroxime may prevent the growth

*TO COMPLY WITH AO 2016-0008

of susceptible disease-causing bacteria and thereby may reduce the incidence of certain postoperative infections in patients undergoing surgical procedures (e.g. vaginal hysterectomy) that are classified as clean-contaminated or potentially contaminated procedures. Effective prophylactic use of antibiotics in surgery depends on the time of administration. Cefuroxime should usually be given one-half to 1 hour before the operation to allow sufficient time to achieve effective antibiotic concentrations in the wound tissues during the procedure. The dose should be repeated intra-operatively if the surgical procedure is lengthy.

Prophylactic administration is usually not required after the surgical procedure ends and should be stopped within 24 hours. In the majority of surgical procedures, continuing prophylactic administration of any antibiotic does not reduce the incidence of subsequent infections but will increase the possibility of adverse reactions and the development of bacterial resistance.

The preoperative use of Cefuroxime has also been effective during open heart surgery for surgical patients in whom infections at the operative site would present a serious risk. For these patients it is recommended that cefuroxime therapy be continued for at least 48 hours after the surgical procedure ends. If an infection is present, specimens for culture should be obtained for the identification of the causative organism, and appropriate antimicrobial therapy should be instituted.

Pharmacokinetics:
Cefuroxime sodium is given by intramuscular or intravenous injection. Peak plasma concentrations of about 27 *u*g per mL, have achieved 45 minutes after an intramuscular dose of 750mg with measurable amounts present 8 hours after a dose. Up to 50% of cefuroxime in the circulation is bound to plasma proteins. The plasma half-life is about 70 minutes and is prolonged in patients with renal impairment and in neonates.

Cefuroxime is widely distributed in the body including pleural fluid, sputum, bone, synovial fluid, and aqueous humour, but only achieves therapeutic concentrations in the CSF when the meninges are inflamed. It crosses the placenta and has been detected in breast milk.

Cefuroxime is excreted unchanged, by glomerular filtration and renal tubular secretion, and high concentration are achieved in the urine. Following injection most of a dose of cefuroxime is excreted within 24 hours, the majority within 6 hours. Probenecid competes for renal tubular secretion with cefuroxime resulting in higher and more prolonged plasma concentration of cefuroxime. Small amounts of cefuroxime is excreted in the bile.

Drug Interactions:
A false-positive reaction for glucose in the urine may occur with copper reduction tests (Benedict's or Fehling's solution or with Clinitest•'5f tablets) but not with enzyme-based tests for glycosuria. As a false-negative result may occur in the ferricyanide test, it is recommended that either the glucose oxidase or hexokinase method be used to determine blood plasma glucose levels in patients receiving cefuroxime.

Cefuroxime does not interfere with the assay of serum and urine creatinine by the alkaline picrate method.

Overdose: Overdosage of cephalosporins can cause cerebral irritation leading to convulsions. Serum levels of cefuroxime can be reduced by hemodialysis and peritoneal dialysis.

Contraindications: Cefuroxime is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Caution: Foods, Drugs, Devices and Cosmetics Act prohibits dispensing without prescription

For suspected adverse drug reaction, report to the FDA: www.fda.gov.ph

Dosage:
Adults: The usual adult dosage range for cefuroxime is 750 mg to 1.5 grams every 8 hours, usually for 5 to 10 days. In uncomplicated urinary tract infections, skin and skin-structure infections, disseminated gonococcal infections, and uncomplicated pneumonia, a 750 mg dose every 8 hours is recommended. In severe or complicated infections, a 1.5 gram dose every 8 hours is recommended.

In bone and joint infections, a 1.5 gram dose every 8 hours is recommended. In clinical trials, surgical intervention was performed when indicated as an adjunct to cefuroxime therapy. A course of oral antibiotics was administered when appropriate following the completion of parenteral administration of cefuroxime.

In life-threatening infections or infections due to less susceptible organisms, 1.5 grams every 6 hours may be required. In bacterial meningitis, the dosage should not exceed 3 grams every 8 hours. For preventive use for clean-contaminated or potentially contaminated surgical procedures, a 1.5 gram dose administered intravenously just before surgery (approximately one-half to 1 hour before the initial incision) is recommended. Thereafter, give 750 mg intravenously every 8 hours when the procedure is prolonged.

For preventive use during open heart surgery, a 1.5 gram dose administered intravenously at the induction of anesthesia and every 12 hours thereafter for a total of 6 grams is recommended.

Impaired Renal Function: A reduced dosage must be employed when renal function is impaired. Dosage should be determined by the degree of renal impairment and the susceptibility of the causative organism

Since cefuroxime is dialyzable, patients on hemodialysis should be given a further dose at the end of the dialysis.

Note:
As with antibiotic therapy in general, administration of Cefuroxime for Injection should be continued for a minimum of 48 to 72 hours after the patient becomes asymptomatic or after evidence of bacterial eradication has been obtained; a minimum of 10 days of treatment is recommended in infections caused by *Streptococcus pyogenes* in order to guard against the risk of rheumatic fever or glomerulonephritis; frequent bacteriologic and clinical appraisal is necessary during therapy of chronic urinary tract infection and may be required for several months after therapy has been completed; persistent infections may require treatment for several weeks; and doses smaller than those indicated above should not be used. In staphylococcal and other infections involving a collection of pus, surgical drainage should be carried out where indicated.

Pediatric Patients Above 3 Months of Age: Administration of 50 to 100 mg/kg/day in equally divided doses every 6 to 8 hours has been successful for most infections susceptible to cefuroxime. The higher dosage of 100 mg/kg/day (not to exceed the maximum adult dosage) should be used for the more severe or serious infections. In bone and joint infections, 150 mg/kg/day (not to exceed the maximum adult dosage) is recommended in equally divided doses every 8 hours. In clinical trials, a course of oral antibiotics was administered to pediatric patients following the completion of parenteral administration of cefuroxime.

In cases of bacterial meningitis, a larger dosage of cefuroxime is recommended, 200 to 240 mg/kg/day intravenously in divided doses every 6 to 8 hours.

In pediatric patients with renal insufficiency, the frequency of dosing should be modified consistent with the recommendations for adults.

Directions for Reconstitution:
For IM Injection: In a 750mg vial add 3mL Sterile water for Injection. Shake gently the vial.

For IV Injection: In a 750mg vial add 6mL Sterile water for Injection. Shake gently the vial.

Each 750mg vial may be reconstituted with 100ml Sterile Water for Injection, or with other commonly used IV infusion fluids.