PRESCRIBING INFORMATION

CEFAZOLIN

FOR INJECTION, USP

℞ only

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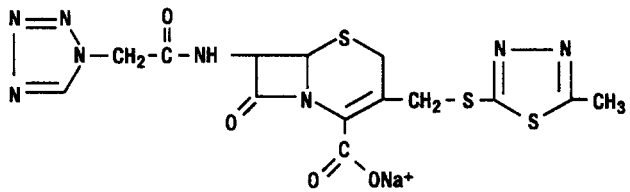
To reduce the development of drug-resistant bacteria and maintain the effectiveness of Cefazolin for Injection and other antibacterial drugs, Cefazolin for Injection should be used only to treat or prevent infections that are proven or strongly suspected to be caused by bacteria.

DESCRIPTION

Cefazolin for Injection is a semisynthetic cephalosporin for parenteral administration. It is the sodium salt of 3-[[(5-methyl-1,3,4-thiadiazol-2-yl)thio]methyl]-8-oxo-7-[2-(1H-tetrazol-1-yl)acetamido]-5-thia-1-azabicyclo [4.2.0]oct-2-ene-2-carboxylic acid.

Structural Formula:



The sodium content is 48 mg (2.1 mEq) per 1 gram of cefazolin sodium. Cefazolin for injection is a white to yellowish powder.
Cefazolin for Injection is supplied in vials equivalent to 500 mg of cefazolin, 1 gram of cefazolin, and 2 grams of cefazolin; and in Pharmacy Bulk Vials equivalent to 10 grams of cefazolin.

CLINICAL PHARMACOLOGY

After intramuscular administration of Cefazolin for Injection to normal volunteers, the mean serum concentrations were 37 mcg/mL at 1 hour and 3 mcg/mL at 8 hours following a 500-mg dose, and 64 mcg/mL at 1 hour and 7 mcg/mL at 8 hours following a 1-gram dose.

Studies have shown that following intravenous administration of Cefazolin for Injection to normal volunteers, mean serum concentrations peaked at approximately 185 mcg/mL and were approximately 4 mcg/mL at 8 hours for a 1-gram dose.

The serum half-life for Cefazolin for Injection is approximately 1.8 hours following IV administration and approximately 2 hours following IM administration.

In a study (using normal volunteers) of constant intravenous infusion with dosages of 3.5 mg/kg for one hour (approximately 250 mg) and 1.5 mg/kg the next 2 hours (approximately 100 mg), Cefazolin for Injection produced a steady serum level at the third hour of approximately 28 mcg/mL.

Studies in patients hospitalized with infections indicate that Cefazolin for Injection produces mean peak serum levels approximately equivalent to those seen in normal volunteers.

Bile levels in patients without obstructive biliary disease can reach or exceed serum levels by up to five times; however, in patients with obstructive biliary disease, bile levels of Cefazolin for Injection are considerably lower than serum levels (< 1 mcg/mL).

In synovial fluid, the level of Cefazolin for Injection becomes comparable to that reached in serum at about 4 hours after drug administration.

Studies of cord blood show prompt transfer of Cefazolin for Injection across the placenta. Cefazolin for Injection is present in very low concentrations in the milk of nursing mothers.

Cefazolin for Injection is excreted unchanged in the urine. In the first 6 hours approximately 60% of the drug is excreted in the urine and this increases to 70% to 80% within 24 hours. Cefazolin for Injection achieves peak urine concentrations of approximately 2,400 mcg/mL and 4,000 mcg/mL, respectively following 500-mg and 1-gram intramuscular doses.

In patients undergoing peritoneal dialysis (2L/hr.), Cefazolin for Injection produced mean serum levels of approximately 10 and 30 mcg/mL after 24 hours' instillation of a dialyzing solution containing 50 mg/L and 150 mg/L, respectively. Mean peak levels were 29 mcg/mL (range 13 to 44 mcg/mL) with 50 mg/L (3 patients), and 72 mcg/mL (range 26 to 142 mcg/mL) with 150 mg/L (6 patients). Intraperitoneal administration of Cefazolin for Injection is usually well tolerated.

Controlled studies on adult normal volunteers, receiving 1 gram 4 times a day for 10 days, monitoring CBC, SGOT, SGPT, bilirubin, alkaline phosphatase, BUN, creatinine, and urinalysis, indicated no clinically significant changes attributed to Cefazolin for Injection.

Microbiology

In vitro tests demonstrate that the bactericidal action of cephalosporins results from inhibition of cell-wall synthesis. Cefazolin has been shown to be active against most strains of the following microorganisms both *in vitro* and in clinical infections as described in the INDICATIONS AND USAGE section:

Aerobic Gram-positive microorganisms:
Staphylococcus aureus (including penicillinase-producing strains)
Staphylococcus epidermidis
Streptococcus pneumoniae
Streptococcus pyogenes and other strains of Streptococci
NOTE: Methicillin-resistant staphylococci are uniformly resistant to cefazolin. Many Enterococcus strains are resistant to cefazolin.

Aerobic Gram-negative microorganisms:
Escherichia coli
Haemophilus influenzae
Klebsiella species
Proteus mirabilis
NOTE: Most strains of indole positive Proteus *(Proteus vulgaris), Enterobacter cloacae, Morganella morganii,* and *Providencia rettgeri* are resistant. *Serratia, Pseudomonas, Mima and Herellea* species are almost uniformly resistant to cefazolin.

Susceptibility Testing:
Dilution Techniques:

Quantitative methods are used to determine antimicrobial minimum inhibitory concentrations (MICs). These MICs provide estimates of the susceptibility of bacteria to antimicrobial compounds. The MICs should be determined using a standardized procedure. Standardized procedures are based on a dilution method[1] (broth) or equivalent with standardized inoculum concentrations and standardized concentrations of cefazolin powder.

The MIC values should be interpreted according to the following criteria:
For *Enterobacteriaceae* and *Staphylococcus* spp.

MIC (mcg/mL)	Interpretation
< 8	Susceptible (S)
16	Intermediate (I)
> 32	Resistant (R)

A report of "Susceptible" indicates that the pathogen is likely to be inhibited if the antimicrobial compound in the blood reaches the concentrations usually achievable. A report of "Intermediate" indicates that the result should be considered equivocal, and, if the microorganism is not fully susceptible to alternative, clinically feasible drugs, the test should be repeated. This category implies possible clinical applicability in body sites where the drug is physiologically concentrated or in situations where high dosage of drug can be used. This category also provides a buffer zone which prevents small uncontrolled technical factors from causing major discrepancies in interpretation. A report of "Resistant" indicates that the pathogen is not likely to be inhibited if the antimicrobial compound in the blood reaches the concentrations usually achievable; other therapy should be selected.

Standardized susceptibility test procedures require the use of laboratory control microorganisms to control the technical aspects of the laboratory procedures. Standard cefazolin powder should provide the following MIC values:

Microorganism		MIC (mcg/mL)
S. aureus	ATCC 29213	0.25 to 1.0
E. coli	ATCC 25922	1.0 to 4.0

Diffusion Techniques:
Quantitative methods that require measurement of zone diameters also provide reproducible estimates of the susceptibility of bacteria to antimicrobial compounds. One such standardized procedure[2] requires the use of standardized inoculum concentrations. This procedure uses paper disks impregnated with 30-mcg cefazolin to test the susceptibility of microorganisms to cefazolin.
Reports from the laboratory providing results of the standard single-disk susceptibility test with a 30-mcg cefazolin disk should be interpreted according to the following criteria:
For Enterobacteriaceae using the 30-mcg cefazolin disk

Zone diameter (mm)	Interpretation
> 18	Susceptible (S)
15 to 17	Intermediate (I)
< 14	Resistant (R)

For *Staphylococcus* spp. using the 30-mcg cefazolin or the 30-mcg cephalothin disks

Zone diameter (mm)	Interpretation
> 18	Susceptible (S)
15 to 17	Intermediate (I)
< 14	Resistant (R)

Interpretation should be as stated above for results using dilution techniques. Interpretation involves correlation of the diameter obtained in the disk test with the MIC for cefazolin. As with standardized dilution techniques, diffusion methods require the use of laboratory control microorganisms that are used to control the technical aspects of the laboratory procedures. For the diffusion technique, the 30-mcg cefazolin disk should provide the following zone diameters in this laboratory test quality control strain:

Microorganism		Zone diameter (mm)
S. aureus	ATCC 25923	29 to 35
E. coli	ATCC 25922	23 to 29

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INDICATIONS AND USAGE

Cefazolin for Injection is indicated in the treatment of the following serious infections due to susceptible organisms:

Respiratory Tract Infections: Due to *S. pneumoniae, Klebsiella* species, *H. influenzae, S. aureus* (penicillin-sensitive and penicillin-resistant), and group A beta-hemolytic streptococci.

Injectable benzathine penicillin is considered to be the drug of choice in treatment and prevention of streptococcal infections, including the prophylaxis of rheumatic fever.

Cefazolin for Injection is effective in the eradication of streptococci from the nasopharynx; however, data establishing the efficacy of Cefazolin for Injection in the subsequent prevention of rheumatic fever are not available at present.

Urinary Tract Infections: Due to *E. coli, P. mirabilis, Klebsiella* species, and some strains of *enterobacter* and *enterococci*.

Skin and Skin Structure Infections: Due to *S. aureus* (penicillin-sensitive and penicillin-resistant), group A beta-hemolytic streptococci, and other strains of streptococci.

Biliary Tract Infections: Due to *E. coli*, various strains of *streptococci, P. mirabilis, Klebsiella* species and *S. aureus*.

Bone and Joint Infections: Due to *S. aureus*.

Genital Infections: (i.e., prostatitis, epididymitis) due to *E. coli, P. mirabilis, Klebsiella* species, and some strains of enterococci.

Septicemia: Due to *S. pneumoniae, S. aureus* (penicillin-sensitive and penicillin-resistant), *P. mirabilis, E. coli,* and *Klebsiella* species.

Endocarditis: Due to *S. aureus* (penicillin-sensitive and penicillin-resistant) and group A beta-hemolytic streptococci.

Perioperative Prophylaxis: The prophylactic administration of Cefazolin for Injection preoperatively, intraoperatively, and postoperatively may reduce the incidence of certain postoperative infections in patients undergoing surgical procedures which are classified as contaminated or potentially contaminated (e.g., vaginal hysterectomy, and cholecystectomy in high-risk patients such as those older than 70 years, with acute cholecystitis, obstructive jaundice, or common duct bile stones).

The perioperative use of Cefazolin for Injection may also be effective in surgical patients in whom infection at the operative site would present a serious risk (e.g., during open-heart surgery and prosthetic arthroplasty).

The prophylactic administration of Cefazolin for Injection should usually be discontinued within a 24-hour period after the surgical procedure. In surgery where the occurrence of infection may be particularly devastating (e.g., open-heart surgery and prosthetic arthroplasty), the prophylactic administration of Cefazolin for Injection may be continued for 3 to 5 days following the completion of surgery.

If there are signs of infection, specimens for cultures should be obtained for the identification of the causative organism so that appropriate therapy may be instituted. (See DOSAGE AND ADMINISTRATION).

To reduce the development of drug-resistant bacteria and maintain the effectiveness of Cefazolin for Injection and other antibacterial drugs, Cefazolin for Injection should be used only to treat or prevent infections that are proven or strongly suspected to be caused by susceptible bacteria. When culture and susceptibility information are available, they should be considered in selecting or modifying antibacterial therapy. In the absence of such data, local epidemiology and susceptibility patterns may contribute to the empiric selection of therapy.

CONTRAINDICATIONS

CEFAZOLIN FOR INJECTION IS CONTRAINDICATED IN PATIENTS WITH KNOWN ALLERGY TO THE CEPHALOSPORIN GROUP OF ANTIBIOTICS.

WARNINGS

BEFORE THERAPY WITH CEFAZOLIN FOR INJECTION IS INSTITUTED, CAREFUL INQUIRY SHOULD BE MADE TO DETERMINE WHETHER THE PATIENT HAS HAD PREVIOUS HYPERSENSITIVITY REACTIONS TO CEFAZOLIN, CEPHALOSPORINS, PENICILLINS, OR OTHER DRUGS. IF THIS PRODUCT IS GIVEN TO PENICILLIN-SENSITIVE PATIENTS, CAUTION SHOULD BE EXERCISED BECAUSE CROSS-HYPERSENSITIVITY AMONG BETA-LACTAM ANTIBIOTICS HAS BEEN CLEARLY DOCUMENTED AND MAY OCCUR IN UP TO 10% OF PATIENTS WITH A HISTORY OF PENICILLIN ALLERGY. IF AN ALLERGIC REACTION TO CEFAZOLIN FOR INJECTION OCCURS, DISCONTINUE TREATMENT WITH THE DRUG. SERIOUS ACUTE HYPERSENSITIVITY REACTIONS MAY REQUIRE TREATMENT WITH EPINEPHRINE AND OTHER EMERGENCY MEASURES, INCLUDING OXYGEN, IV FLUIDS, IV ANTIHISTAMINES, CORTICOSTEROIDS, PRESSOR AMINES, AND AIRWAY MANAGEMENT, AS CLINICALLY INDICATED.

Pseudomembranous colitis has been reported with nearly all antibacterial agents, including cefazolin, and may range in severity from mild to life-threatening. Therefore, it is important to consider this diagnosis in patients who present with diarrhea subsequent to the administration of antibacterial agents.

Treatment with antibacterial agents alters the normal flora of the colon and may permit overgrowth of clostridia. Studies indicate that a toxin produced by *Clostridium difficile* is a primary cause of "antibiotic-associated colitis".

After the diagnosis of pseudomembranous colitis has been established, therapeutic measures should be initiated. Mild cases of pseudomembranous colitis usually respond to drug discontinuation alone. In moderate to severe cases, consideration should be given to management with fluids and electrolytes, protein supplementation, and treatment with an oral antibacterial drug clinically effective against *C. difficile* colitis.

PRECAUTIONS

General: Prolonged use of Cefazolin for Injection may result in the overgrowth of nonsusceptible organisms. Careful clinical observation of the patient is essential.

When Cefazolin for Injection is administered to patients with low urinary output because of impaired renal function, lower daily dosage is required (see DOSAGE AND ADMINISTRATION).

As with other β-lactam antibiotics, seizures may occur if inappropriately high doses are administered to patients with impaired renal function (see DOSAGE AND ADMINISTRATION).

Cefazolin for Injection, as with all cephalosporins, should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

Cephalosporins may be associated with a fall in prothrombin activity. Those at risk include patients with renal or hepatic impairment or poor nutritional state, as well as patients receiving a protracted course of antimicrobial therapy, and patients previously stabilized on anticoagulant therapy. Prothrombin time should be monitored in patients at risk and exogenous vitamin K administered as indicated.

Prescribing Cefazolin for Injection 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.

Drug Interactions: Probenecid may decrease renal tubular secretion of cephalosporins, when used concurrently, resulting in increased and more prolonged cephalosporin blood levels.

Drug/Laboratory Test Interactions: A false positive reaction for glucose in the urine may occur with Benedict's solution, Fehling's solution, or Clinitest® tablets, but not with enzyme-based tests such as Clinistix®.

Positive direct and indirect antiglobulin (Coombs) tests have occurred; these may also occur in neonates whose mothers received cephalosporins before delivery.

Information for Patients: Patients should be counseled that antibacterial drugs including Cefazolin for Injection should only be used to treat bacterial infections. They do not treat viral infections (e.g., the common cold). When Cefazolin for Injection is prescribed to treat a bacterial infection, patients should be told that although it is common to feel better early in the course of therapy, the medication should be taken exactly as directed. Skipping doses or not completing the full course of therapy may: (1) decrease the effectiveness of the immediate treatment, and (2) increase the likelihood that bacteria will develop resistance and will not be treatable by Cefazolin for Injection or other antibacterial drugs in the future.

Carcinogenesis/Mutagenesis: Mutagenicity studies and long-term studies in animals to determine the carcinogenic potential of Cefazolin for Injection have not been performed.

Pregnancy: ***Teratogenic Effects:*** Pregnancy Category B. Reproduction studies have been performed in rats, mice, and rabbits at doses up to 25 times the human dose and have revealed no evidence of impaired fertility or harm to the fetus due to Cefazolin for Injection. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Labor and Delivery: When cefazolin has been administered prior to cesarean section, drug levels in cord blood have been approximately one quarter to one third of maternal drug levels. The drug appears to have no adverse effect on the fetus.

Nursing Mothers: Cefazolin for Injection is present in very low concentrations in the milk of nursing mothers. Caution should be exercised when Cefazolin for Injection is administered to a nursing woman.

Pediatric Use: Safety and effectiveness for use in premature infants and neonates have not been established. See DOSAGE AND ADMINISTRATION for recommended dosage in pediatric patients older than 1 month.

Geriatric Use: Of the 920 subjects who received Cefazolin for Injection in clinical studies, 313 (34%) were 65 years and over, while 138 (15%) were 75 years and over. No overall differences in safety or effectiveness were observed between these subjects and younger subjects. Other reported clinical experience has not identified differences in responses between the elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out.

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 (see PRECAUTIONS, General and DOSAGE AND ADMINISTRATION).

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ADVERSE REACTIONS

The following reactions have been reported:

Gastrointestinal: Diarrhea, oral candidiasis (oral thrush), vomiting, nausea, stomach cramps, anorexia, and pseudomembranous colitis. Onset of pseudomembranous colitis symptoms may occur during or after antibiotic treatment (see WARNINGS). Nausea and vomiting have been reported rarely.

Allergic: Anaphylaxis, eosinophilia, itching, drug fever, skin rash, Stevens-Johnson syndrome.

Hematologic: Neutropenia, leukopenia, thrombocytopenia, thrombocythemia.

Hepatic: Transient rise in SGOT, SGPT, and alkaline phosphatase levels has been observed. As with other cephalosporins, reports of hepatitis have been received.

Renal: As with other cephalosporins, reports of increased BUN and creatinine levels, as well as renal failure, have been received.

Local Reactions: Rare instances of phlebitis have been reported at site of injection. Pain at the site of injection after intramuscular administration has occurred infrequently. Some induration has occurred.

Other Reactions: Genital and anal pruritus (including vulvar pruritus, genital moniliasis, and vaginitis).

Cephalosporin-class Adverse Reactions: In addition to the adverse reactions listed above that have been observed in patients treated with cefazolin, the following adverse reactions and altered laboratory tests have been reported for cephalosporin-class antibiotics:

Adverse Reactions: Allergic reactions, urticaria, serum sickness-like reaction, erythema multiforme, toxic epidermal necrolysis, colitis, renal dysfunction, toxic nephropathy, abdominal pain, reversible hyperactivity, hypertonia, hepatic dysfunction including cholestasis, aplastic anemia, hemolytic anemia, hemorrhage, and superinfection.

Altered Laboratory Tests: Prolonged prothrombin time, positive direct Coomb's test, false-positive test for urinary glucose, elevated bilirubin, elevated LDH, increased creatinine, pancytopenia, and agranulocytosis.

Several cephalosporins have been implicated in triggering seizures, particularly in patients with renal impairment when the dosage was not reduced (See DOSAGE AND ADMINISTRATION). If seizures associated with drug therapy occur, the drug should be discontinued. Anticonvulsant therapy can be given if clinically indicated.

DOSAGE AND ADMINISTRATION

Usual Adult Dosage:

Type of Infection	Dose	Frequency
Moderate to severe infections	500 mg to 1 gram	every 6 to 8 hrs.
Mild infections caused by susceptible gram-positive cocci	250 mg to 500 mg	every 8 hours
Acute, uncomplicated urinary tract infections	1 gram	every 12 hours
Pneumococcal pneumonia	500 mg	every 12 hours
Severe, life-threatening infections (e.g., endocarditis, septicemia)*	1 gram to 1.5 grams	every 6 hours

*In rare instances, doses of up to 12 grams of Cefazolin for Injection per day have been used.

Perioperative Prophylactic Use: To prevent postoperative infection in contaminated or potentially contaminated surgery, the recommended doses are:

a. 1 gram IV or IM administered 1/2 hour to 1 hour prior to the start of surgery.
b. For lengthy operative procedures (e.g., 2 hours or more), 500 mg to 1 gram IV or IM during surgery (administration modified depending on the duration of the operative procedure).
c. 500 mg to 1 gram IV or IM every 6 to 8 hours for 24 hours postoperatively.

It is important that (1) the preoperative dose be given just (1/2 to 1 hour) prior to the start of surgery so that adequate antibiotic levels are present in the serum and tissues at the time of initial surgical incision; and (2) Cefazolin for Injection be administered, if necessary, at appropriate intervals during surgery to provide sufficient levels of the antibiotic at the anticipated moments of greatest exposure to infective organisms.

In surgery where the occurrence of infection may be particularly devastating (e.g., open-heart surgery and prosthetic arthroplasty), the prophylactic administration of Cefazolin for Injection may be continued for 3 to 5 days following the completion of surgery.

Dosage Adjustment for Patients with Reduced Renal Function: Cefazolin for Injection may be used in patients with reduced renal function with the following dosage adjustments: Patients with a creatinine clearance of 55 mL/min. or greater or a serum creatinine of 1.5 mg% or less can be given full doses. Patients with creatinine clearance rates of 35 to 54 mL/min. or serum creatinine of 1.6 to 3 mg% can also be given full doses but dosage should be restricted to at least 8 hour intervals. Patients with creatinine clearance rates of 11 to 34 mL/min. or serum creatinine of 3.1 to 4.5 mg% should be given 1/2 the usual dose every 12 hours. Patients with creatinine clearance rates of 10 mL/min. or less or serum creatinine of 4.6 mg% or greater should be given 1/2 the usual dose every 18 to 24 hours. All reduced dosage recommendations apply after an initial loading dose appropriate to the severity of the infection. Patients undergoing peritoneal dialysis: see CLINICAL PHARMACOLOGY.

Pediatric Dosage: In pediatric patients, a total daily dosage of 25 to 50 mg per kg (approximately 10 to 20 mg per pound) of body weight, divided into 3 or 4 equal doses, is effective for most mild to moderately severe infections. Total daily dosage may be increased to 100 mg per kg (45 mg per pound) of body weight for severe infections. Since safety for use in premature infants and in neonates has not been established, the use of Cefazolin for Injection in these patients is not recommended.

Pediatric Dosage Guide					
Weight		**25 mg/kg/day Divided into 3 Doses**		**25 mg/kg/day Divided into 4 Doses**	
lbs	kg	Approximate Single Dose (mg/q8 h)	Vol. (mL) Needed with Dilution of 125 mg/mL	Approximate Single Dose (mg/q6 h)	Vol. (mL) Needed with Dilution of 125 mg/mL
10	4.5	40 mg	0.35 mL	30 mg	0.25 mL
20	9	75 mg	0.6 mL	55 mg	0.45 mL
30	13.6	115 mg	0.9 mL	85 mg	0.7 mL
40	18.1	150 mg	1.2 mL	115 mg	0.9 mL
50	22.7	190 mg	1.5 mL	140 mg	1.1 mL
Weight		**50 mg/kg/day Divided into 3 Doses**		**50 mg/kg/day Divided into 4 Doses**	
lbs	kg	Approximate Single Dose (mg/q8 h)	Vol. (mL) Needed with Dilution of 225 mg/mL	Approximate Single Dose (mg/q6 h)	Vol. (mL) Needed with Dilution of 225 mg/mL
10	4.5	75 mg	0.35 mL	55 mg	0.25 mL
20	9	150 mg	0.7 mL	110 mg	0.5 mL
30	13.6	225 mg	1 mL	170 mg	0.75 mL
40	18.1	300 mg	1.35 mL	225 mg	1 mL
50	22.7	375 mg	1.7 mL	285 mg	1.25 mL

In pediatric patients with mild to moderate renal impairment (creatinine clearance of 70 to 40 mL/min.), 60 percent of the normal daily dose given in equally divided doses every 12 hours should be sufficient. In patients with moderate impairment (creatinine clearance of 40 to 20 mL/min.), 25 percent of the normal daily dose given in equally divided doses every 12 hours should be adequate. Pediatric patients with severe renal impairment (creatinine clearance of 20 to 5 mL/min.) may be given 10 percent of the normal daily dose given every 24 hours. All dosage recommendations apply after an initial loading dose.

RECONSTITUTION

Preparation of Parenteral Solution: Parenteral drug products should be SHAKEN WELL when reconstituted, and inspected visually for particulate matter prior to administration. If particulate matter is evident in reconstituted fluids, the drug solutions should be discarded.

When reconstituted or diluted according to the instructions below, cefazolin is stable for 24 hours at room temperature or for 10 days if stored under refrigeration (5°C or 41°F). Reconstituted solutions may range in color from pale yellow to yellow without a change in potency.

Single-Dose Vials: For IM injection, IV direct (bolus) injection or IV infusion, reconstitute with Sterile Water for Injection according to the following table. SHAKE WELL.

Vial Size	Amount of Diluent	Approximate Concentration	Approximate Available Volume
500 mg	2 mL	225 mg/mL	2.2 mL
1 gram	2.5 mL	330 mg/mL	3 mL
2 grams	5 mL	330 mg/mL	6 mL

ADMINISTRATION

Intramuscular Administration: Reconstitute vials with Sterile Water for Injection according to the dilution table above. Shake well until dissolved. Cefazolin for Injection should be injected into a large muscle mass. Pain on injection is infrequent with Cefazolin for Injection.

Intravenous Administration: Direct (bolus) injection: Following reconstitution according to the above table, further dilute vials with approximately 5 mL Sterile Water for Injection. Inject the solution slowly over 3 to 5 minutes, directly or through tubing for patients receiving parenteral fluids (see list below).

Intermittent or continuous infusion: Dilute reconstituted Cefazolin for Injection in 50 to 100 mL of 1 of the following solutions:

Sodium Chloride Injection, USP
5% or 10% Dextrose Injection, USP
5% Dextrose in Lactated Ringer's Injection, USP
5% Dextrose and 0.9% Sodium Chloride Injection, USP
5% Dextrose and 0.45% Sodium Chloride Injection, USP
5% Dextrose and 0.2% Sodium Chloride Injection, USP
Lactated Ringer's Injection, USP
Invert Sugar 5% or 10% in Sterile Water for Injection
Ringer's Injection, USP
5% Sodium Bicarbonate Injection, USP

HOW SUPPLIED

Each vial contains cefazolin sodium equivalent to 500 mg or 1 gram cefazolin.

NDC 0781-9338-95	500 mg	packaged in 10s
NDC 0781-9339-96	1 gram	packaged in 25s
NDC 0781-xxxx-xx	2 grams	

As with other cephalosporins, Cefazolin for Injection tends to darken depending on storage conditions; within the stated recommendations, however product potency is not adversely affected.

Before reconstitution protect from light and store at 20°-25°C (68°- 77°F). [See USP Controlled Room Temperature].

REFERENCE

[1] National Committee for Clinical Laboratory Standards, Method for Dilution Antimicrobial Susceptibility Tests for Bacteria that Grow Aerobically - Fifth Edition. Approved Standard NCCLS Document M7-A4, Vol. 20, No. 2, NCCLS, Wayne, PA, January 2000.

[2] National Committee for Clinical Laboratory Standards, Performance Standards for Antimicrobial Disk Susceptibility Tests - Seventh Edition. Approved Standard NCCLS Document M2-A7, Vol. 20, No. 1, NCCLS, Wayne, PA, January 2000.

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