Cloxacillin [kloks-uh-sil-in] 

**Canadian drug name.**

**Genetic Implication.** CAPI TALS indicate life-threatening, underlines indicate most frequent. Strikethrough Discontinued.

**Indications**

Treatment of the following infections due to penicillinase-producing staphylococci: respiratory tract infections, sinusitis, endocarditis, osteomyelitis, skin and skin structure infections.

**Action**


**Pharmacokinetics**

- **Absorption:** IV administration results in complete bioavailability. Moderately absorbed (50%) following oral administration.
- **Distribution:** Widely distributed, penetration into CSF is minimal but sufficient in the presence of inflamed meninges; crosses the placenta and enters breast milk.
- **Metabolism and Excretion:** Some metabolism by the liver (9–22%) and some renal excretion of unchanged drug (20%).
- **Half-life:** 0.5–1.1 hr (increased in severe hepatic, renal dysfunction and in neonates).

**TIME/ACTION PROFILE**

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**Contraindications/Precautions**

- **Contraindicated in:** Previous hypersensitivity to penicillins (cross-sensitivity exists with cephalosporins and other beta-lactam antibiotics).
- **Use Cautiously in:** Severe renal or hepatic impairment; OB: Safe use in pregnancy has not been established; Pedi: Safe use in premature and newborn infants has not been established.

**Adverse Reactions/Side Effects**

- **CNS:** SEIZURES.
- **GI:** PSEUDOMEMBRANOUS COLITIS, diarrhea, epigastric distress, nausea, vomiting.
- **GU:** interstitial nephritis.
- **Derm:** rash, urticaria.
- **Hemat:** eosinophilia, leukopenia.
- **Misc:** allergic reactions including ANAPHYLAXIS and SERUM SICKNESS, superinfection.

**Interactions**

- **Drug-Drug:** Cloxacillin may effect oral contraceptive agents. Probenecid may increase blood levels of cloxacillin (therapy may be combined for this purpose). Neomycin may decrease oral absorption of cloxacillin. Concurrent use with methotrexate may increase methotrexate elimination and risk of serious toxicity.
- **Drug-Food:** Food increases oral absorption by 50%.

**Route/Dosage**

- **PO (Adults):** 250–500 mg q 6 hr.
- **PO (Children):** 50–100 mg/kg/day divided q6h up to a maximum of 4 g/day.
- **IM, IV (Adults):** 25–50 mg/kg/day in 4 equally divided doses every 6 hr.
- **IM, IV (Children up to 20 kg):** 25–50 mg/kg/day in 4 equally divided doses every 6 hr.

**NURSING IMPLICATIONS**

- **Assessment:** Monitor for infection (vital signs, appearance of wound, sputum, urine, and stool; WBC at beginning of and throughout therapy.)

**MISCELLANEOUS**

- **Canadian drug name.
- **Generic Implication.
- **CAPITAL indicates high-frequency, underline indicates most frequent.
- **Discontinued.**
Obtain a history before initiating therapy to determine previous use of and reactions to cephalosporins or other beta-lactam antibiotics. Persons with no history of penicillin sensitivity may still have an allergic response.

Obtain specimens for culture and sensitivity prior to initiating therapy. First dose may be given before receiving results.

Observe patient for signs and symptoms of anaphylaxis (rash, pruritus, larvated edema, wheezing, abdominal pain). Discontinue drug and health care professional immediately if these occur. Keep epinephrine, an antihistamine, and resuscitation equipment close by in event of an anaphylactic reaction.

Monitor bowel function. Diarrhea, abdominal cramping, fever, and bloody stools should be reported to health care professional promptly as a sign of pseudomembranous colitis. May begin up to several weeks following cessation of therapy.

Lab Test Considerations:

- May cause leukopenia and neutropenia, especially with prolonged therapy or hepatic impairment.
- May cause positive direct Coombs’ test result.
- May cause increases in AST, ALT, LDH, and serum alkaline phosphatase concentrations.

Potential Nursing Diagnoses

Risk for infection (Indications) (Side Effects)
Noncompliance (Patient/Family Teaching)

Implementation

PO:
- Administer around the clock on an empty stomach at least 1 hr before or 2 hr after meals. Take with a full glass of water, acidic juices may decrease absorption of penicillins. Swallow capsules whole, do not crush, chew or open capsules.
- Use calibrated measuring device for liquid preparations. Shake well. Solution is stable for 14 days if refrigerated.

IM:
- Reconstitute by adding 1.9 mL and 1.7 mL Sterile Water to 250 mg and 500 mg respectively, for concentrations of 125 mg/mL and 250 mg/mL. Shake well to dissolve. Stable for 24 hr at room temperature or 48 hr if refrigerated.

IV:
- For IV use, reconstitute 250 mg vial with 4.9 mL, 500 mg vial with 4.8 mL, and 1000 mg vial with 9.6 mL Sterile Water for concentrations of 50 mg/mL, 100 mg/mL, and 100 mg/mL respectively. Shake well. Use reconstituted solution immediately. Infuse over 2-4 min.

IV:
- Reconstitute for infusion with Sterile Water for injection using 5.4 mL for 1000 mg, 8.8 mL for 2000 mg, and 33.4 mL for 10,000 mg. Add to an appropriate solution that is in contact with the tubing. Use solution immediately. Infuse over 30-40 min.

Y-Site Compatibility:
- Epinephrine, ketamine.

Y-Site Incompatibility:
- Pantoprazole, rocuronium.

Patient/Family Teaching

- Instruct patient to take medication around the clock and to finish the drug completely as directed, even if feeling better. Missed doses should be taken as soon as remembered. Advise patient that stopping the medication may be dangerous.
- Advise patient to report signs of superinfection (black, furry overgrowth on the tongue; vaginal itching or discharge; loose or foul-smelling stools) and allergy.
- Instruct patient to notify health care professional if fever and diarrhea develop, especially if stool contains blood, pus, or mucus. Advise patient not to treat diarrhea without consulting health care professional.
- Instruct patient to notify health care professional if symptoms do not improve.

Evaluation/Desired Outcomes

- Resolution of the signs and symptoms of infection. Length of time for complete resolution depends on the organism and site of infection.

Why was this drug prescribed for your patient?