



Monographs for Commonly Administered Intravenous Medications in Home and Community Care

Cloxacillin

Drug Class¹	Antibiotic – Penicillin	
Spectrum^{1,2}	Refer to product monograph for complete spectrum Staphylococcal species and Streptococcal species	
Cross Sensitivities / Allergies¹	Cross sensitivities with penicillins and possibly cephalosporins	
Indications^{1,3}	<ul style="list-style-type: none"> • Skin and skin structure • Septicemia 	<ul style="list-style-type: none"> • Osteomyelitis • Endocarditis • Other conditions based on culture and sensitivity results
Outpatient Considerations³	<ul style="list-style-type: none"> • Must be able to access laboratory monitoring (either at outpatient laboratory or by arranging in-home lab) if using an interacting oral medication (see Potential Drug Interactions section) or receiving long term therapy. • Administration via central venous access device is preferred, as cloxacillin is an irritant. If treatment duration is greater than 7 days, prescriber to arrange order central line access. • Oral cloxacillin may an option, and step down from IV to oral should be considered after 3-5 days, based on indication, gastrointestinal absorption and clinical status. IM dosing is also an option. 	
Prescribing Considerations and Dosage in Adults^{1,3}	Usual dose is 500 mg – 2 g IV q6h Maximum dose is 8 - 12 g IV per day (e.g., 2 g IV q4h) <i>No renal dose adjustment is necessary</i>	
Administration	<ul style="list-style-type: none"> • Dispensed in an ambulatory cassette/multi-dose bag intended for an infusion pump, programmed to deliver the total daily dose via preprogrammed boluses over 24 hours. • Prior to connecting the patient to therapy, double check the pump programming versus the order. Recheck after each order change. • Contact pharmacy infusion provider for specific questions pertaining to administration. 	
Stability / Compatibilities¹	<i>Compatible with:</i> <ul style="list-style-type: none"> • 0.9% Sodium chloride (NS) • Dextrose 5% in Water (D5W) • Ringer’s Lactate (RL) 	Follow the stability as specified by the infusion provider (as it is based on the dilution). Ensure appropriate storage conditions as specified are being met.



Monographs for Commonly Administered Intravenous Medications in Home and Community Care

Cloxacillin

Monitoring Parameters^{1,3}	<p>Laboratory:</p> <ul style="list-style-type: none"> • During long term therapy (i.e., greater than 2 weeks), serum creatinine, liver function test and complete blood count should be checked periodically • See Potential Drug Interactions section below for additional monitoring information. 	<p>Clinical by Nurse:</p> <ul style="list-style-type: none"> • Check allergy status prior to administration – do not give cloxacillin if the patient has a history of penicillin allergy (also possible cross-sensitivity to cephalosporins) • If infusion causes irritation at the site of infusion, extending the infusion time or using a more dilute solution may help • Nausea, vomiting, epigastric discomfort and loose stools • Although dose adjustment is not required for renal impairment, serum levels may accumulate, possibly causing seizures, change in level of consciousness Review home medications and compare against the selected drug interactions listed below. Report to prescriber if patient is using an interacting drug and obtain further orders. For more comprehensive drug interaction screening, contact the patient’s community pharmacist(s).
Selected Clinically Significant Drug interactions¹	<p>Warfarin^{1,4,5} – case reports demonstrating both increased and decreased effectiveness of warfarin have been reported when combined with cloxacillin. International Normalized Ratio (INR) should be checked more frequently after initiating cloxacillin. INR can increase within days of cloxacillin initiation. The increased frequency of INR testing should continue even after discontinuation of cloxacillin, with warfarin dosage adjustments as required until stable.</p> <p>Methotrexate⁶ – penicillin-type antibiotics may reduce the renal clearance of methotrexate causing hematological or gastrointestinal toxicity. Complete blood counts should be checked weekly and monitoring of gastrointestinal toxicity (e.g., mouth sores, nausea) should be assessed daily.</p>	
Patient Education	<p><i>Advise patient to report to their doctor or nurse if they have:</i></p> <ul style="list-style-type: none"> • Previously experienced an allergy to a penicillin or cephalosporin • Pain, redness or swelling at the infusion site 	
Other	<p>For information on pregnancy and nursing please contact the Motherisk Helpline found at http://www.motherisk.org/women/contactUs.jsp</p>	



Monographs for Commonly Administered Intravenous Medications in Home and Community Care

References:

1. Cloxacillin product monograph. Toronto (ON): Teva Canada Ltd; 2013 Aug [cited 2016 Feb 16]. Obtained through Health Canada Drug Product Database; search term “cloxacillin” as active ingredient, available from: <http://webprod5.hc-sc.gc.ca/dpd-bdpp/index-eng.jsp>
2. Cloxacillin [monograph]. Pittsburgh (PA): Antimicrobe.org. [cited 2016 Feb 16]. Available from: <http://antimicrobe.org/new/drugpopup/Cloxacillin.pdf>
3. Cloxacillin [monograph]. In: Bedard M, Gergoure N, Massicotte A, Editors. Parenteral Drug Therapy Manual. Ottawa (ON); 2015.
4. Marusic S, Gojo-Tomic N, Bacic-Vrca V, Franic M. Enhanced anticoagulant effect of warfarin in a patient treated with cloxacillin [abstract]. Int J Clin Pharmacol Ther. 2012;50(6):431-3.
5. Khalili H, Nikvarz N, Najmeddin F, Dashti-Khavidaki S. A probable clinically significant interaction between warfarin and cloxacillin: three case reports. Eur J Clin Pharmacol. 2013;69(3):721-4.
6. Methotrexate product monograph. Kirkland (QC): Pfizer Canada Inc.; 2015 Oct 14 [cited 2016 Apr 8]. Obtained through Health Canada Drug Product Database; search term “methotrexate” as active ingredient, available from: <http://webprod5.hc-sc.gc.ca/dpd-bdpp/index-eng.jsp>

Disclaimer: This monograph is intended to be used as a reference to support healthcare professionals in the home and community setting. It supplements, but does not replace: clinical judgement, the information provided by the product manufacturers, and the need to consult with the prescriber.

All reasonable precautions have been taken by the Institute for Safe Medication Practices Canada (ISMP Canada) to verify the information contained in this document. However, ISMP Canada does not guarantee the quality, accuracy, completeness or timeliness of such information. Accordingly, the information is shared without warranty or representation of any kind (express, implied or statutory). The responsibility for the interpretation and use of the information provided hereby lies with the reader. In no event shall ISMP Canada be liable for damages arising from the use or misuse of such information.

© ISMP Canada 2016

Developed with support from Health Quality Ontario