NHS
Greater Glasgow and Clyde

CLINICAL GUIDELINE

Flucloxacillin Continuous Intravenous Infusion for Suspected/ Confirmed Staphylococcus aureus Infective Endocarditis

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

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Approval Group:	Antimicrobial Utilisation Committee

Important Note:

The Intranet version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

Continuous Intravenous Infusion Flucloxacillin for Suspected/ Confirmed *Staphylococcus aureus* Infective Endocarditis

Background and Indication

Flucloxacillin is a beta-lactam antibiotic and the treatment choice for suspected or confirmed *Staphylococcus aureus infective* endocarditis. Clinical efficacy of beta-lactam antibiotics corresponds with time (T) the free drug exceeds the minimum inhibitory concentration (MIC) of the organism (T > MIC). Administration of flucloxacillin by continuous infusion may therefore be associated with better clinical outcomes when compared with intermittent infusions especially in critically ill patients. This method of administration also reduces nursing time spent preparing and administering this antibiotic, reduces the risk of missed doses and minimises the interruption for patients during unsociable hours (midnight – 6am).

If considering continuous infusion flucloxacillin please ensure:

- intravenous access is available 24 hours/ day
- infusion pump is available 24 hours/ day
- patient is not leaving the ward for extended periods of time
- renal function; Creatinine Clearance ≥ 30 ml/min

Contraindications include:

- history of true beta-lactam allergy or any excipients
- renal function; Creatinine Clearance < 30 ml/min

Dosing Information

Loading dose:

Indication	Loading Dose
If patient has received any flucloxacillin within the previous 4 hours	No loading dose required
If patient has NOT received any flucloxacillin within the previous 4 hours	Intravenous infusion 2000 mg over 30 minutes

Maintenance dose:
Start immediately after loading dose or within 4 hours of previous flucloxacillin dose.

Actual body weight	Dose amount and duration of intravenous infusion	Total daily dose
< 85 kg	4 g over 12 hours	8 g in 24 hours
≥ 85 kg	6 g over 12 hours	12 g in 24 hours

Created by: Antimicrobial Pharmacists
Approved by: Antimicrobial Utilisation Committee, Nov 2021. Review date: Nov 2024

Instructions for Preparation and Administration

Reconstitution:
Dissolve the contents of 500 mg vials in 5 – 10 ml water for injection
Dissolve the contents of 1 g vials in 15 – 20 ml water for injection

Dilution and suitable diluents:
Following reconstitution of the required number of vial(s), dilute the required dose with sodium chloride 0.9 %. Please see the recommended infusion volumes below:

Flucloxacillin dose	Infusion volume (sodium chloride 0.9 %)
4 g	250 ml
6 g	500 ml

References:

1. Adult Intravenous Medicine Monographs. Available from https://medusa.wales.nhs.uk (accessed November 2021).
2. Gould FK et al. Guidelines for the diagnosis and antibiotic treatment of endocarditis in adults: a report of the Working Party of the British Society for Antimicrobial Chemotherapy. Journal of Antimicrobial Chemotherapy, 2012; 67: 269 – 289.
3. Leder K et al. The Clinical Efficacy of Continuous-Infusion Flucloxacillin in Serious Staphylococcal Sepsis. Journal of Antimicrobial Chemotherapy, 1999; 43: 113 – 118.
4. South Eastern Sydney Local Health District. Administration of antibiotics by prolonged or continuous infusion in the inpatient setting, Apr 2021. Available from https://www.seslhd.health.nsw.gov.au/sites/default/files/documents/SESLHDPR%20687.pdf (accessed November 2021).