NHS
Greater Glasgow and Clyde

CLINICAL GUIDELINE

Adult high dose Temocillin (for I sensitivity) dosing for patients with Renal Impairment

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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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.

Advice on Adult *High* Dose Temocillin (for I sensitivity)

Dosing for Patients with Renal Impairment

- Reporting of antibiotic susceptibility from microbiology laboratories has changed in line with EUCAST[1] recommendations. Antibiotic susceptibility is now reported as **I** as well as **S** (susceptible at standard dose) and **R** (resistant even with increased dose) [2].

  I is classified as Susceptible at Increased exposure (increased dose) [2].

- For patients with normal renal function (creatinine clearance >60ml/min), the recommended temocillin **increased dose** is **2g 8 hourly**.[3-5]

- Temocillin is excreted unchanged by the kidneys[5]. Temocillin dosing is usually reduced in renal impairment to avoid adverse effects related to high penicillin doses e.g. neurological toxicity including convulsions.

- There is no official guidance on the increased dose of temocillin to use in patients with renal impairment.

- Clinical teams should review the individual patient clinical situation and give consideration to the factors below:
  - Site and severity of infection
  - Does the patient have established CKD?
  - Does the patient have an AKI that may rapidly reverse after treatment of sepsis where early dose reduction may not be required? It may be more appropriate to dose adjust if renal function does not improve quickly.
  - The care setting and monitoring available

- It is recommended that renal function is monitored daily and that creatinine clearance is calculated to inform dosing decisions, rather than using eGFR. Creatinine clearance calculator is available from https://scottish.sharepoint.com/sites/GGC-ClinicalInfo or via the GGC Medicines App

- The table below has been taken from Renal Drug Database[6] guidance, based on an expert discussion and consensus of published recommendations[7, 8] on high dose temocillin for patients with renal impairment. Note that some of the suggested dosing guidance in the table is 'off label'.

Table 1: Temocillin doses recommended for adults with renal impairment where susceptibility reported as 'I'

Creatinine Clearance (ml/min)	**Temocillin dose**
40-60	2 g 12 hourly.
20-39	2 g stat then 1 g 12 hourly.
<20	2 g stat then 1 g 24 hourly**.**

Temocillin is a Protected Antimicrobial and should only be used on advice of Microbiology/Infectious Diseases

References

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2. NHS Greater Glasgow and Clyde. *Changes to antimicrobial susceptibility reporting from microbiology laboratory from 3rd May 2022*. Available at: https://clinicalguidelines.nhsggc.org.uk/microbiology/adults-guidelines/reporting-interpretation-guidelines/changes-to-antimicrobial-susceptibility-reporting-from-microbiology-laboratory-from-3rd-may-2022/ (Accessed June 2023)
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