

NHS LANARKSHIRE THEATRES GUIDELINE FOR SURGICAL PROPHYLAXIS WITH GENTAMICIN

BACKGROUND

Renal side effects associated with Gentamicin use include nephrotoxicity. The overall incidence of aminoglycoside nephrotoxicity is 2% to 10%. Acute renal failure due to gentamicin is usually nonoliguric with an average rise in serum creatinine of 88-265 µmol/L. Renal function generally returns to baseline in 7 to 14 days. An increased incidence has been associated with a serum trough gentamicin concentration greater than 2 mg/l (multiple day dosage regimens) and above 1mg/ml (for once daily dosage regimens). Other predisposing factors include advanced age, pre-existing Chronic Kidney Disease, dehydration and concomitant use of other potentially nephrotoxic drugs.

5 STEPS TO ENSURE SAFE PRESCRIBING OF GENTAMICIN FOR SURGICAL PROPHYLAXIS IN THEATRES

- Check if Gentamicin is required for surgical prophylaxis
Please refer to individual surgical specialty prophylaxis guideline for recommended agents for specific surgical procedures.
- Prevention of double dosing
Did the patient have a dose within the last 72 hours? – Check Drug Chart and A&E-Record if applicable.
N.B. Patients with open compound fractures usually receive a dose after admission.
If yes: Check Gentamicin chart and Level post last dose. Do not administer another dose of Gentamicin until level confirmed as <1mg/L. **If no:** proceed to 3.
- Identify correct dose of gentamicin
 - **Orthopaedics/Trauma and Vascular Surgery:** Identify whether this patient is high risk or low risk of acute kidney injury. High risk would involve any one of the following factors: Age > 75 years, CKD (eGFR ≤59ml/min), Cardiac Failure, PVD, Diabetes mellitus, Liver Disease or the concurrent administration of other nephrotoxic drugs. Patients at low risk of AKI should receive a standard prophylactic gentamicin dose of 80mg. Patients at high risk of AKI should receive a reduced gentamicin dose of 40mg.
 - **Gastro-intestinal, Obstetrics and Gynaecology and Urology Surgery:** Gentamicin prophylaxis dose based on patient height and approximates to 3mg/kg ideal body weight, capped at 300mg. Please refer to individual surgical specialty prophylaxis policy for gentamicin dosing table. If eGFR<15ml/min, give half of dose recommended in table (1.5mg/kg ideal body weight). Identify Height from Pre-assessment Chart. If not known measure height with paper measuring tape (available in Theatres) if not already recorded in records.
- Prescribe dose on Anaesthetic Chart **and** the front page of the drug cardex. If the patient is already on Gentamicin and the last level allows administration of a further dose then also record this dose as given on the Gentamicin chart.
Double check dose prescribed with anaesthetic assistant (or second doctor) prior to administration.
- Administer gentamicin dose as slow IV bolus injection over 3-5 minutes. No dilution is required.