

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 $\mu\text{mol/L}$. 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.

POLICY TO CHECK CORRECT DOSE OF GENTAMICIN FOR SURGICAL PROPHYLAXIS IN THEATRES

1. Check: Does this patient need Gentamicin for surgical prophylaxis? Please refer to individual surgical specialty prophylaxis policy for recommended agents for specific surgical procedures.
2. **If yes: Did this 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 $<1\text{mg/L}$. **If no:** proceed to 3.
3. **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 ($\text{eGFR} \leq 59\text{ml/min}$), 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 $\text{eGFR} < 15\text{ml/min}$, 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.

4. 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.
5. **Administer gentamicin dose as slow IV bolus injection over 3-5 minutes. No dilution is required.**
6. These simple steps should not take longer than 5 minutes and prevent dosing errors (mandatory prior to transfer to Theatre and administration of intravenous antibiotics).