

Gentamicin

Indication	Infections due to Gram negative organisms and some staphylococci.										
Dose	5mg/kg 36 hourly for all babies <7 days of age 5mg/kg 24 hourly for babies ≥7 days of age Dose must be adjusted on the basis of frequent blood levels. In some circumstances (e.g. gram negative septicaemia) it may be appropriate to give gentamicin more frequently than 36 hourly.										
Route of administration	IV bolus over 3-5 minutes										
To prepare	20mg in 2mL vials (10mg/mL) Draw up required dose and give by slow intravenous injection over 3-5 minutes. Note that 40mg/mL gentamicin exists – be careful when checking strength.										
Compatibilities	Glucose 5%, sodium chloride 0.9%, alprostadil, amiodarone, atracurium, clarithromycin, fluconazole, insulin, magnesium sulphate, meropenem, metronidazole, midazolam, milrinone, morphine sulphate, parenteral nutrition – vamin only, pancuronium, ranitidine, remifentanil, vasopressin, vecuronium, zidovudine										
Known incompatibilities	Aciclovir, amoxicillin, amphotericin B, flucloxacillin, furosemide, heparin, parenteral nutrition – lipid only, propofol.										
Notes	<p>Monitor trough levels before 2nd dose (level and give in most babies, level and hold if clinically indicated e.g. extreme prematurity or renal impairment). In a newborn infant, levels must be repeated frequently as renal function is changing. In an older infant in whom renal function is normal and stable, levels can be measured every 3rd dose.</p> <table border="1"> <thead> <tr> <th>Pre-dose level</th> <th>Action required</th> </tr> </thead> <tbody> <tr> <td><1mg/L</td> <td>Target trough level for courses of ≥3 doses</td> </tr> <tr> <td><2mg/L</td> <td>Target for first trough level</td> </tr> <tr> <td>2-3mg/L</td> <td>Extend interval between doses by 12 hours & check renal function</td> </tr> <tr> <td>>3mg/L</td> <td>Extend interval by 12 hours & check trough level and renal function before giving next dose</td> </tr> </tbody> </table> <p>If very abnormal results (e.g. trough <0.3mg/L or >2mg/L) then check prescription and renal function and discuss with pharmacist before next dose is due.</p> <p>Consider peak levels (1 hour post-dose) in babies who are macrosomic, oedematous, not responding to treatment, or have a confirmed Gram negative infection. Reference range 5-10mg/L. Increase dose by 10% if <5mg/L or decrease dose by 10% if >10mg/L. NICE recommends >8mg/L in Gram negative and staphylococcal infections.</p> <p>If there is no compatibility information for specific drugs, do not assume compatibility. For incompatible drugs or those with no compatibility information use a separate line or, for short infusions, flush well between drugs.</p> <p>For side-effects see the BNFC - Gentamicin BNFC</p>	Pre-dose level	Action required	<1mg/L	Target trough level for courses of ≥3 doses	<2mg/L	Target for first trough level	2-3mg/L	Extend interval between doses by 12 hours & check renal function	>3mg/L	Extend interval by 12 hours & check trough level and renal function before giving next dose
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References	Leeds teaching Hospitals Gentamicin Prescribing Guideline for Neonates, Medusa, BNFC, Handbook on Injectable Drugs Trissel et al, Medicines Complete, Thames Valley Y-site IV Drugs Compatibility Chart.										

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Produced by Yorkshire and Humber Neonatal Operational Delivery Network.
Clinicians must accept individual responsibility for using this information and prescribing safely.