



Mersey and West Lancashire
Teaching Hospitals
NHS Trust

Neonatal Gentamicin dosing chart

**** Gentamicin must not be used in patients with Myasthenia Gravis ****

Ward: _____

AFFIX ADDRESSOGRAPH LABEL HERE

Name: _____

Date of Birth: _____

Address: _____

Hospital number: _____

All gentamicin prescriptions must be entered on the inpatient Kardex with a note to “see additional chart” regarding dose regime.

Patient Age	Starting dose and frequency	Tick one		Date & Time	Signature
<7 days	5mg/kg every 36 hrs (Bolos)		Blood Culture Taken:		
≥7 –28 days	5mg/kg every 24 hrs (Bolos)		Blood Culture Result Due:		

Babies < 32 weeks of gestation with risk factors* for reduced clearance contact consultant for advice

Indication: _____

Weight _____Kg

ALWAYS CONFIRM THAT LEVELS ARE TAKEN AT THE CORRECT TIME. SEE BACK OF PAPER CHART FOR APPROPRIATE RANGES.

Initial Prescription						Administration			Pharm
Dose	Date	Day of week	Dose (mg)	Time (24hr)	Signature	Date	Time	Signature	
1st dose				:			:		
Blood Culture Review		Result:		Continue: Y/N		Signature:			
Take a pre-dose level up to 4 hours prior to the second dose*									
Time Level Taken: :						Signature:			
2nd dose				:			:		
Review trough level before giving third dose									
Gentamicin Level:.....(mg/L)						Reviewed by:			
3rd dose				:			:		

*Take and give - no need to wait for this result before administering the next dose unless there is evidence of renal dysfunction (e.g. elevated serum urea or creatinine, or anuria, or a reduced urine output)

Continuation Prescription <small>(to be used if further doses required)</small>						Administration			Monitoring*	
Dose	Date	Day of week	Gentamicin dose (mg)	Time (24hr)	Signature	Date Given	Time Given	Signature	Time taken	Level
4th				:			:			
5th				:			:			
6th				:			:			
7th				:			:			

*Repeat pre-dose level before every third dose or more frequently if indicated.

All patients/carers/parents must be counselled on the potential for **ototoxicity** to occur, even at normal doses. Ototoxicity more likely if gentamicin continued for > 7 days

When prescribing gentamicin, please arrange the timing of doses and levels during working hours where possible.
 Andrew Lewis (Principal Clinical Pharmacist), Jade Pickup (Antimicrobial Pharmacist), Rachael Moan (Antimicrobial Pharmacist), June 2023

Risk factors for reduced clearance

- o Preterm \leq 32 weeks
- o Undergoing therapeutic hypothermia (cooling)
 - o Renal impairment
 - o Birthweight $<1\text{kg}$
- o Concurrent NSAID therapy

Gentamicin levels and monitoring

- **If further doses are indicated take a pre-dose level no more than 4 hours prior to the second dose**
 - o Review this “trough” level before giving a third dose.
 - o Initial target level is **less than 2mg/L**.
 - o If high the interval between doses should be extended.
 - o Do not withhold a dose if the pre-dose level is not available unless there is evidence of renal dysfunction (e.g. elevated serum urea or creatinine, or anuria, or a reduced urine output).
 - o Prescribe using the 24 hour clock format. **Always block off unused timeslots on the chart when writing the prescription to prevent erroneous administration.**
- **Pre-dose “trough” levels** should be **repeated before every third dose** of gentamicin (no more than 4 hours prior to the next dose), or more frequently if necessary (e.g. if there was concern about previous trough levels or renal function)
 - o For courses lasting more than three doses the target level is **less than 1mg/L**.
- **Post-dose “peak” levels** should be considered in neonates with poor response to treatment, with oedema, with proven gram-negative infection, or with birthweight greater than 4.5kg.
 - o Post-dose “peak” levels should be taken one hour after starting the gentamicin infusion.
 - o In a baby with a Gram-negative or staphylococcal infection consider a dose increase if “peak” levels are less than 8mg/L.

Therapeutic range and dose adjustment

Trough level	Interpretation	Action
<0.5	Safe but low; is dose adequate?	<ul style="list-style-type: none">• No change needed in dosing if baby clinically well / improving.• Consider checking a PEAK level (see above)
0.5 – 0.9	Safe, and good levels, little / no risk of toxic accumulation	<ul style="list-style-type: none">• No change needed in dosing if baby clinically improving.• Consider checking a PEAK level (see above)
1.0 – 1.9	Acceptable, but some risk of toxic accumulation	<ul style="list-style-type: none">• If 1st trough; no change needed in dosing if baby clinically improving; consider checking a PEAK level (see above)• If baby has received 3 or more doses of Gentamicin, trough should be <1.0; consider reasons for accumulation / increase dose interval / does the gentamicin need to continue?
2.0 – 2.5	Some accumulation, potentially toxic	Can Gentamicin be discontinued? If not, increase the dose interval by at least 12 hours, but do ‘trough and hold’: i.e. repeat trough level before next dose due, BUT WITHOLD DOSE until the result is known to be acceptable.
>2.5	Potentially toxic accumulation.	DISCONTINUE GENTAMICIN if at all possible (discuss with consultant). OMIT THE NEXT DOSE, and repeat the level 12 hours after the next dose was due. Restart only when level is <2 , and ensure dosing interval is increased by at least 12 hours.

Peak level	Interpretation	Action
< 8.0mg/l	Risk of poor clinical efficiency	<ul style="list-style-type: none">• Consider increasing dose
\geq 8.0mg/l	Good levels	<ul style="list-style-type: none">• No change needed in dosing if baby clinically improving.

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