

NEONATAL GENTAMICIN: < 44 WEEKS POSTMENSTRUAL AGE

Patient ID label -

Also prescribe "Gentamicin" on the "Regular Prescription" part of the treatment card and add "see attached sheet". Sign this entry.

Mothers Hospital Number _____

Dose and frequency calculation	Weight	Dose	Postnatal age at date and time of first dose	Dose frequency
 Kg	5mg/kg day(s)	<7 days = 36 hourly

If there are signs of renal function impairment, poor cardiac output, dehydration/starvation, other nephrotoxic drugs prescribed e.g. NSAID, cephalosporins, furosemide OR if dose adjustment is required in response to a level then check trough level before EACH dose and wait for result

FIRST DOSE DUE ____ / ____ / ____ (date) at ____:____ (time using 24 hour clock)

Day to be given:	Drug: Gentamicin	Route: IV bolus slowly over 3-5 minutes		Pharmacy check:
Monday	Dose: _____ mg (rounded DOWN to the nearest 0.5mg)	Date given: ____/____/____		Given by:
Tuesday				
Wednesday				
Thursday				
Friday	Prescriber signature:	Date Prescribed: ____/____/____	Time given: ____:____	Checked by:
Saturday				
Sunday				

**Serum levels to be taken around 3 hours PRE SECOND DOSE
Level must be reviewed BEFORE second dose administered.**

Date + time pre-dose serum level taken: ____/____/____ ____:____	Pre-dose serum level result:	Action:	Date:	Sign:
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SECOND DOSE DUE ____ / ____ / ____ (date) at ____:____ (time using 24 hour clock)

Day to be given:	Drug: Gentamicin	Route: IV bolus slowly over 3-5 minutes		Pharmacy check:
Monday	Dose: _____ mg (rounded DOWN to the nearest 0.5mg)	Date given: ____/____/____		Given by:
Tuesday				
Wednesday				
Thursday				
Friday	Prescriber signature:	Date Prescribed: ____/____/____	Time given: ____:____	Checked by:
Saturday				
Sunday				

THIRD DOSE DUE ____ / ____ / ____ (date) at ____:____ (time using 24 hour clock)

Day to be given:	Drug: Gentamicin	Route: IV bolus slowly over 3-5 minutes		Pharmacy check:
Monday	Dose: _____ mg (rounded DOWN to the nearest 0.5mg)	Date given: ____/____/____		Given by:
Tuesday				
Wednesday				
Thursday				
Friday	Prescriber signature:	Date Prescribed: ____/____/____	Time given: ____:____	Checked by:
Saturday				
Sunday				

**Serum levels to be taken around 3 hours PRE FOURTH DOSE
Level must be reviewed BEFORE fourth dose administered.**

Date + time pre-dose serum level taken: ____/____/____ ____:____	Pre-dose serum level result:	Action:	Date:	Sign:
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FOURTH DOSE DUE ___ / ___ / ___ (date) at ___ : ___ (time using 24 hour clock)

Day to be given:	Drug: Gentamicin	Route: IV bolus slowly over 3-5 minutes	Pharmacy check:
Monday			
Tuesday	Dose: _____ mg (rounded DOWN to the nearest 0.5mg)	Date given: ___ / ___ / ___	Given by:
Wednesday			
Thursday			
Friday	Prescriber signature:	Date Prescribed: ___ / ___ / ___	Time given: ___ : ___
Saturday			Checked by:
Sunday			

MONITORING:

Serum levels should be taken before the second dose is administered, ideally around 21 hours (24hourly dosing) or 33 hours (36hourly dosing) after the first dose so that levels can be reviewed and the second dose given on time.

Measurement of trough levels should be considered immediately before every **third** dose of gentamicin for babies who do **not** have impaired renal function.

In any baby with abnormal renal function, the trough level should be taken before each dose so it is available before the next dose is given.

Pre-dose level (Trough) blood samples should be taken around 3 to 4 hours prior to the next dose being due to allow for the results to be reviewed and the dose given on time.

Post-dose level (Peak) blood samples are not normally required.

However in the following babies, consider measuring peak blood gentamicin levels: oedema, babies born at >4.5kg, unsatisfactory response to treatment, proven gram negative infection.

If peak levels are required, they should be taken 1 hour after the dose is given. (See appendix 1) Consider **increasing the dose** if the peak level is **<8mg/L**, in babies with a gram negative or staphylococcal infection.

A result **must** be obtained before the next dose is given and the dose adjusted if desired levels are not achieved (see dose adjustment guide below for advice).

If sampling from lines, great care must be taken to use an alternative line to that used to administer the drug. If this is not possible then the line must be flushed with sufficient amounts of sodium chloride 0.9% following administration to ensure complete removal of the drug from the line.

Desired levels: Pre-dose: less than 2mg/L

If the course of gentamicin lasts for more than three doses then a trough concentration of <1mg/L is advised

DOSE ADJUSTMENT GUIDE:

The following is a guide only.

Pharmacy should be consulted for advice on dose adjustment whenever possible.

Levels	Potential actions – please discuss with pharmacy
Trough <2mg/l	Continue on current dosing regimen **If the course of gentamicin lasts for more than three doses then a trough concentration of <1mg/L is advised**
Trough >2mg/l,	*Check timing of level and site where sample has been taken from* Omit next dose. Take a further level 12 hours after taking the original level. If after 12 hours the trough <2mg/l, then continue using 48 hourly dosing (or 36 hourly if previously on 24 hourly dosing). If trough still high, omit dose and discuss with pharmacy.

Only for babies requiring peak level monitoring:

Levels	Potential actions – please discuss with pharmacy
Trough <1mg/l, peak low	Increase dose (1), usually assume linear kinetics NB: If a dose increase >50% required, please discuss with Senior Dr
Trough 1-2mg/l, peak low	Increase dose (1) as above but consider increasing dose interval (2) as well e.g. extend from 24-hourly to 36-hourly. Increasing dose on top of a trough level already above 1mg/l will cause a further increase in trough level
Trough <2mg/l, peak high	Reduce dose (1), usually assume linear kinetics
Trough high, peak high	Consider omitting dose, then reduce dose (1) and increase dose interval (2) If levels very high, consider repeating levels before recommencing doses
Trough >2mg/l, peak OK	Consider omitting dose, then increase dose interval (2)
Trough >2 mg/l, peak low	Consider omitting dose, then increase dose (1) and increase dose interval (2)

(1) The excretion of gentamicin is approximately linear. Increase or decrease the dose by calculating for a midrange dose level. E.g. to increase the level by 20% increase the dose by 20%

(2) Dose intervals should be increased or decreased by 12 hours.

References: NICE, Neonatal infection (early onset): antibiotics for prevention and treatment last accessed 01/04/20, BNFC, Gentamicin, Neonatal Sepsis, last accessed 01/04/20, Evelina London Paediatric Formulary, last accessed 01/04/20, Leeds Teaching Hospital, Neonatal Gentamicin Guideline, last accessed 14/05/20

Documentation Controls:

Development of Guidelines:	Paediatric pharmacists
Consultation With:	Consultant Paediatricians (13/05/20) Antimicrobial Pharmacist
Approved By:	
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