NEONATAL MEDICATION GUIDELINE	
Gentamicin	
Scope (Staff):	Nursing, Midwifery, Medical and Pharmacy Staff
Scope (Area):	CAHS NICU, NETS WA
This document should be read in conjunction with the Disclaimer.	

Quick Links

Dose	Preparation & Administration	Side Effects & Interactions	Monitoring

Restrictions

Formulary: Unrestricted

HIGH RISK Medication

Incorrect dosing with respect to age, weight and renal function may result in significant ototoxicity and nephrotoxicity. Under dosing may result in treatment failure, monitoring of drug levels may be required.

Description

Aminoglycoside antibiotic

Presentation

Ampoule: 80 mg/2 mL

Storage

Store at room temperature, below 25°C

Indication

Treatment of infections caused by susceptible organisms including E. Coli, Pseudomonas, Klebsiella.

Contraindications

Hypersensitivity to gentamicin, other aminoglycosides or any component of the formulation.

Precaution

Caution in patients with pre-existing renal impairment, auditory or vestibular impairment, hypocalcaemia, depressed neuromuscular transmission.

Dose

HIGH RISK MEDICATION

Dose errors have occurred previously. Please ensure **DOSE** and **FREQUENCY** are charted correctly.

Corrected Gestational Age	Postnatal Age	Dose	Frequency
<30 weeks	0-7 days	5mg/kg	48 hourly
	>7 days	5mg/kg	24 hourly
30-35 weeks	0-7 days	6mg/kg	48 hourly
	>7 days	6mg/kg	24 hourly
>35 weeks	0-14 days	4½mg/kg	24 hourly
	>14 days	7mg/kg	24 hourly

Dose Adjustment

Renal Impairment:

Perform trough concentration prior to every dose.

See Monitoring Section

Preparation

IV: Available from CIVAS (KEMH only).

Dilution:

Take 2 mL of Gentamicin and dilute to a final volume of 8 mL with compatible diluent

Final concentration is 10 mg/mL

IM:

Use undiluted.

Administration

IV injection

Inject over 5 to 10 minutes.

Intramuscular injection

As per CAHS Medication Administration Policy

Compatible Fluids

Sodium Chloride 0.9%, Glucose 5%

Y-Site Compatibility

Refer to KEMH Neonatal Medication Guideline: Y-Site IV Compatibility in Neonates

Side Effects

Common: Nil

Serious: Nephrotoxicity – reduce dose in renal impairment. Increased risk when administered with other nephrotoxic drugs and cephalosporins. Auditory and vestibular deafness

Interactions

IV aminoglycoside antibiotics are inactivated by IV cephalosporins, penicillins and teicoplanin.

Do not give simultaneously.

Monitoring

Sample:

Trough level: 0.4 mL blood immediately prior to dose.

Peak level: 0.4 mL blood 1-hour post dose.

1. **First levels to be taken:**

   24 hourly dosing regimen: 72 hours after commencing course

   48 hourly dosing regimen: 96 hours after commencing course

2. **Next levels to be taken:**

24 hourly dosing regimen: Next level on day 8

48 hourly dosing regimen: Next level on day 9

3. Check levels every four days subsequently

4. Blood levels are to be repeated at the next dose (pre and post) if the dose is adjusted or if the infant's clinical situation (ie renal failure) is likely to lead to unpredictable levels.

For all babies calculate "area under the curve" using the results obtained.

Area Under The Curve (AUC):

Ideal range is 80 – 100 mg/L.hour

Expected levels:

- Peak: >10 mg/L
- Trough level at 24 hours post dose: < 2 mg/L
- Trough level at 48 hours post dose: < 1 mg/L Consult a senior physician if levels are outside these AUC parameters.

To calculate the "Area Under the Curve", a computer programme called "NeoGent" is available via the intranet.

- To perform the calculations and generate a report, please follow these instructions;
- Using the computer mouse, move the cursor over the "Neogent" link on the Neonatal Medication Protocols Home screen.
- Click on the Neogent link (intranet access only).
- Click once on the option 'enable macros' (if this message appears).
- Type in the patient's name. Move to the next box by hitting the 'TAB' key on the computer keyboard.
- Type in the times of drug administration and taking the levels, but bear in mind; (i) You need to put the hour in one box and the minutes in the other. (ii) Use a '24 hour' clock format. For example, if a time is 2pm, type it in as 14 (ie 12 noon + 2 hours)
- Type in the date (dd/mm/yy format, for example, 23/07/21 for 23rd July 2021).

- Using the mouse, move the cursor and click on the button that says ‘click here’. This will print off a report, clear all the data you have just typed in and switch off the programme.
- Take the printed report from the printer, bring it to the attention of a medical officer and place it into the patient’s file.
- The report will suggest an appropriate dose adjustment if required

Comments

Incorrect dosing with respect to age, weight and renal function may result in significant otoxicity and nephrotoxicity. Under dosing may result in treatment failure, monitoring of drug levels may be required.

S19A Gentamicin Hexal® Product Information

Related Policies, Procedures & Guidelines

CAHS Medication Administration Protocol

Sepsis: Neonatal

References

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KEMH/PMH research/audits

Monitoring: J. Ailakis Pharmacist PMH

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