NEONATAL MEDICATION PROTOCOLS

TOBRAMYCIN
Created by: NCCU
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NCCU Clinical Guidelines
KEMH/PMH
Perth, Western Australia

DRUG:	**TOBRAMYCIN**
PRESENTATION:	Vial: 80mg/2mL
ACTION & INDICATION:	Aminoglycoside antibiotic. Effective against gentamicin resistant organisms, particularly Pseudomonas.
DOSE:	**IV, IM:** Corrected gestational age<30 weeks AND actual age 0-7days: 5mg/kg once every 48 hours Corrected gestational age<30 weeks AND actual age >7days : 5mg/kg once every 24 hours Corrected gestational age 30-35 weeks AND actual age 0-7days: 6mg/kg once every 48 hours Corrected gestational age 30-35 weeks AND actual age >7days: 6mg/kg once every 24 hours Corrected gestational age>35 weeks AND actual age 0-14days: 4½mg/kg once every 24 hours Corrected gestational age>35 weeks AND actual age>14days: 7mg/kg once every 24 hours **For Nebulisation:** 20mg every 12 hours
PREPARATION:	Diluent: 0.9% Sodium Chloride or Water for Injections. Intravenous: Take 2mL and dilute to 8mL = 10mg/mL Nebulisation: Dilute dose to 2mL (or an appropriate volume)
ADMINISTRATION:	Intravenous: Give over 10 minutes, or infuse over 30 minutes. Intramuscular: As per NCCU policy. Use undiluted. Nebulisation. The expiratory block of ventilators should be changed on a weekly basis when nebulised drugs are used.
ADVERSE EFFECTS:	Nephrotoxicity - may be increased by cephalosporins. Ototoxicity
COMMENTS:	Monitor urine output – dose may need adjusting in renal failure. Inactivated by β-lactam antibiotics eg. penicillin and cephalosporins. Do not give dose simultaneously.
DRUG MONITORING:	IM, IV: **Monitoring**: Trough level: 0.4mL blood immediately prior to dose. Peak level: 0.4mL 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 – 100mg/L.hour
	Expected levels: Peak: >10mg/L Trough level at 24 hours post dose: < 2mg/L Trough level at 48 hours post dose <1mg/L
	Consult a senior physician if levels are outside these AUC parameters.
	To calculate the "Area Under the Curve", a computer programme called "48-NeoGent" has been written. To perform the calculations and generate a report, please follow these instructions; 1. Using the computer mouse, move the cursor over the "48-NeoGent" icon on the main screen. 2. 'Double-click' on this icon. 3. Click once on the option 'enable macros' (if this message appears). 4. Type in the patient's name. Move to the next box by hitting the 'TAB' key on the computer keyboard. 5. 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) 6. Type in the date (dd/mm/yy format, for example, 23/07/02 for 23rd July 2002). 7. Using the 'mouse, move the cursor and click on the button that says 'click here'. This will print off a report, clear all of the data you have just typed in and switch off the programme. 8. Take the printed report from the printer, bring it to the attention of a medical officer and place it into the patient's file. 9. The report will suggest an appropriate dose adjustment if required.
REFERENCES:	KEMH/PMH research/audits Monitoring: J Ailakis Pharmacist PMH Paediatric Pharmacopoeia 13th Ed Royal Children's Hospital Melbourne
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