PAEDIATRIC PARENTERAL GENTAMICIN (D&G): PRESCRIBING, ADMINISTRATION & MONITORING CHART

Use for all patients prescribed regular treatment with intravenous gentamicin (not required for those receiving synergistic gentamicin for the treatment of endocarditis).

NOT FOR USE IN NEONATES

NHS Dumfries & Galloway

Patient name: ……

Date of birth: ……

CHI no.: ……

Affix patient label

Age: …… Sex: M / F Weight: ……*. Height: ……

Creatinine: …… on: …… /…… /……

Dose:
- Standard dose 7mg/kg (if dose exceeds 400mg discuss with Duty microbiologist)
- Renal dose 2.5mg/kg (max 160mg discuss with Duty microbiologist)
- OTHER (please specify)

PROMPT ADMINISTRATION
within 1 hour of recognition of sepsis reduces mortality

SIGNS OF GENTAMICIN TOXICITY
RENAL: ↓ urine output/oliguria or ↑ creatinine

OTO/ VESTIBULAR: NEW tinnitus, dizziness, poor balance, hearing loss, oscillating vision

Toxicities may occur irrespective of gentamicin concentration

Step 1: Calculate and prescribe the first dose of gentamicin (see overleaf for more details)
- Prescribe gentamicin 'as per paper chart' on HEPMA with a 24-hourly dosage interval.
- Prescribe individual doses in the prescription record section below, specifying the date and time the dose should be given.
- Note:* To avoid excessive dosage in obese patients, use IBW for height to calculate dose and monitor levels closely

Step 2: Monitor creatinine and gentamicin concentration and reassess the dosage regimen
- Check gentamicin concentration after the first dose and then at least every 2 days (see overleaf for more details).
- Monitor serum creatinine daily. Seek advice if renal function is unstable (e.g. a change in creatinine of >25%).

Step 3: Assess daily: the ongoing need for gentamicin; signs of toxicity
- Consider an alternative agent if creatinine is increasing or the patient becomes oliguric.
- If gentamicin continues for >3 days, suggest referral to audiology for assessment.
- Refer to guidelines or clinical pharmacist for further advice on prescribing, monitoring and administration.

TOXICITY Before prescribing each dose check: **Renal** & **Oto-vestibular function**	Gentamicin Prescription Record: Complete each time a dose is to be given (ensuring gentamicin is prescribed '**as per paper chart**' on HEPMA)				Administration Record: Complete each time gentamicin is administered (**in addition to HEPMA**)			Monitoring Record: Record ALL sample dates/times accurately below. See overleaf for monitoring advice.			
	Date to be given	Time to be given 24 h clock	Gentamicin Dose (mg)	Prescriber's signature, PRINTED name and STATUS	*Infuse over 30 mins* Date given	*Infuse over 30 mins* Time started 24 h clock	Given by	Date of sample	Time of sample 24 h clock	Gent level (mg/L)	Action/ Comments (please initial action to be taken)
Cr = micromol /L											24 hourly ❑ 48 hourly ❑ Withhold ❑ Stop ❑ Details/other :
Cr = micromol /L											24 hourly ❑ 48 hourly ❑ Withhold ❑ Stop ❑ Details/other :
***Discuss with an infection specialist or microbiology and document in the notes if treatment continues beyond 3 days * Risks of prolonged treatment must be considered and treatment options discussed with microbiology or infection specialist**											
Cr = micromol /L											24 hourly ❑ 48 hourly ❑ Withhold ❑ Stop ❑ Details/other :
Cr = micromol /L											24 hourly ❑ 48 hourly ❑ Withhold ❑ Stop ❑ Details/other :
Discuss with an infection specialist before continuing onto a second sheet											

Patient name: …… **CHI no.:** ……

PAEDIATRIC PARENTERAL GENTAMICIN (D&G): PRESCRIBING, ADMINISTRATION & MONITORING CHART

Prescribing, monitoring, interpreting and re-prescribing advice

IMPORTANT – CHECK OTHER CHARTS eg ANAESTHETIC PRESCRIPTION CHART, FOR PREVIOUS DOSES OF GENTAMICIN, IN CASE THIS HAS ALREADY BEEN ADMINISTERED.

- Plasma Concentration should be measured at the end of the dosage interval, **immediately before the second dose is due**. Give second dose and do not wait for result ("trough and give"), unless there is concern about renal function.
- If renal function or urine output deteriorate during treatment, take a sample immediately before the next dose and withhold the dose until the result is available ("trough and hold")
- Thereafter resample every 2 days unless renal function is impaired or measured concentration is high.
- Record the date and exact time the sample was taken on the monitoring chart and on the sample request form.
- Record the measured concentration on the previous page.
- **Target pre dose "trough" concentration <1mg/L**
- If the result is >1mg/ml do not administer any further doses until the plasma concentration is <1mg/ml.
- If the dose/dosage interval is altered, take a sample immediately before the second dose is given, as above.
- Based on the measured concentration, taking into account any observed toxicity, document a plan for continued treatment in the medical notes and overleaf in the comments box (for toxicity see box overleaf)
- Check the patient's serum creatinine with each gentamicin level and more frequently if clinically indicated. Seek advice from pharmacy or microbiology if the patient has significantly changing renal function.
- Check microbiology sensitivities and refer to IV to Oral switch policy.

If the measured concentration is unexpectedly HIGH or LOW

- Were dose and sample times recorded accurately?
- Was the correct dose administered?
- Was the sample taken from the line used to administer the drug?
- Was the sample taken during drug administration?
- Has renal function declined or improved?
- Does the patient have oedema or ascites?
- If in doubt, take another sample before re-prescribing

Further monitoring

Refer to audiology patients who:

- Develop renal impairment during therapy
- Develop symptoms of oto/vestibular toxicity *(see list overleaf)* Contact microbiology for an alternative antibiotic.
- Repeatedly record plasma concentrations outside the recommended range *(consider factors listed above*)
- Have received >2 weeks of therapy during one admission

Review

- Review the need for gentamicin therapy each day
- Where possible, treatment should be limited to 3-5 days. Risks of prolonged treatment must be considered and treatment options discussed with microbiology.

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