University Hospitals of Derby and Burton NHS Foundation Trust

INTRAVENOUS GENTAMICIN PRESCRIPTION CHART FOR HAEMODIALYSIS PATIENTS

Ref no: CG-ANTI/2192/23

Weight	Cons	Name	Hosp No
Haemodialysis prescription: M / Tu / W / Th / F / S 3 / 4 / 4.5 / 5 hours		Address	Date of birth
Indication for gentamicin:			

No allergies to gentamicin	☐
Length of treatment	1/52 ☐, 2/52 ☐, 3/52 ☐, 4/52 ☐, Other:
Doctor initiating therapy and bleep details	
Record the date microbiology specimen sent	Date: Blood ☐, deep tissue ☐, swab ☐
Record date of microbiology result	
Microbiology result	

1. Gentamicin use in haemodialysis patients

GENTAMICIN IS NOT AN EASY DRUG TO USE SAFELY. The use of intravenous gentamicin should be restricted to less than two weeks where possible in haemodialysis patients. The decision to use gentamicin should be made by the Registrar or Consultant during working hours or the On Call Registrar outside of these times. Extra care is required for patients dialysing more than thrice weekly so ensure these patients are discussed with senior medical staff. Other antibiotics may be appropriate so discuss with the microbiologist for advice.

2. Initiating the gentamicin prescription and electronic prescribing

When initiating gentamicin therapy, **complete this prescription and prescribe the therapy on the patient's electronic prescription chart**. When prescribing gentamicin electronically, this will automatically state that the drug is to be dosed as on the paper prescription copy, **but add to the additional instructions that gentamicin will be prescribed and administered on the dialysis unit**.

3. Initial dose of gentamicin

Give an initial loading dose of 2mg/kg (maximum 120mg), as a bolus injection over 3-5 minutes. Wherever possible this should be given at the end of the dialysis session as 30-50% of gentamicin may be removed during a dialysis session. Record the dose on the gentamicin prescription. The gentamicin chart must be kept on the dialysis unit: if the first dose needs to be initiated before a dialysis session on a non-renal ward the chart should subsequently be kept on the dialysis unit. **Use Gentamicin 80mg/2ml injection vials.**

Patient weight (kg) **(Target weight)**	Dose to prescribe (mg)	Patient weight (kg) **(Target weight)**	Dose to prescribe (mg)
30-31	60 (1.5ml)	46-47	92 (2.3ml)
32-33	64 (1.6ml)	48-49	96 (2.4ml)
34-35	68 (1.7ml)	50-51	100 (2.5ml)
36-37	72 (1.8ml)	52-53	104 (2.6ml)
38-39	76 (1.9ml)	54-55	108 (2.7ml)
40-41	80 (2.0ml)	56-57	112 (2.8ml)
42-43	84 (2.1ml)	58-59	116 (2.9ml)
44-45	88 (2.2ml)	60 and above	120 (3.0ml)

Gentamicin is available as 4mg/0.1ml so doses should be rounded to the nearest 4mg dose for ease of administration. Gentamicin is stocked on the unit.

THIS CHART SHOULD BE CROSS REFERENCED ON THE ELECTRONIC PRESCRIPTION

For advice contact the Haemodialysis Consultant /Renal Registrar Bleep 8121/ Renal On Call Mobile 07879 15509 / Renal Pharmacist 07500 976569 October 2023

4. Indications for gentamicin

Record the indication on the gentamicin prescription.

5. Maintenance dosing of gentamicin

Further doses of gentamicin will be prescribed on the dialysis unit and will be reviewed weekly, where possible, by the haemodialysis consultant or SpR and renal pharmacist. Changes to therapy by the initiating team should be communicated to the renal team prior to this meeting.

6. Taking gentamicin levels and adjusting the maintenance dose

Pre-dialysis gentamicin levels should be taken before each dialysis session and marked as urgent so they are available for dosing gentamicin at the end of the dialysis session.

The gentamicin levels should be recorded on the prescription chart and dosed, using the pre-dialysis level as in the table below:

Pre-dialysis Gentamicin level	Gentamicin Dose	Administration Time
< 1.0mg/L	2mg/kg (max 120mg), as previously, at end of dialysis BUT may be ineffective. Contact nephrologist, microbiologist or renal pharmacist for advice	3-5 minutes
1.1 to 2.0mg/L	2mg/kg (max 120mg), as previously, at end of dialysis	3-5 minutes
> 2.0mg/L to 4mg/L	Omit for this session. Recheck levels at the beginning of the next session.	Omit
> 4.0mg/L	Omit. Contact SpR, nephrologist, microbiologist or renal pharmacist for advice.	Omit

If a level is not available in time to give gentamicin DO NOT give a dose. This level will be available to interpret for the next haemodialysis session. Nursing staff should ensure the renal pharmacist / renal consultant is aware of this at the earliest (working hours) opportunity.

Also take a gentamicin level when dialysis finishes, before giving the gentamicin, and record this post dialysis level. DO NOT use this level for drug dosing for the current dialysis session but as a guide to gentamicin removal during dialysis. (For inpatients, review the post dialysis level as doses between dialysis sessions may be appropriate for patients with low post dialysis levels. Ask the renal pharmacist / renal consultant for advice).

7. Administering gentamicin in haemodialysis patients

Gentamicin should be given after the haemodialysis treatment to avoid removal.

8. Risks of gentamicin use

Underdosing of gentamicin is potentially dangerous as it can lead to treatment failure and resistance to the antibiotic therapy. Overdosing is associated with high trough levels which can cause nephrotoxicity and ototoxicity. The risks are higher when gentamicin and vancomycin are co-prescribed. Gentamicin can cause irreversible ototoxicity and vestibular toxicity. Patients should be warned of these potential side effects and asked to report any symptoms. Auditory and vestibular function should be monitored. **Ask the patient weekly if they have any 'ringing in their ears' or problems with their balance at each dialysis session and document it on this chart.**

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Continuation Sheet Number

Allergies

Date	Dialysis session	Pre Dose level	Dose	Authorised by (Doctors signature)	Administered /checked by	Date/time actually given	Post dialysis level, before giving gentamicin (as a guide for removal only, see notes)	Balance & hearing check (weekly)

Remember: DO NOT GIVE A DOSE IF A LEVEL IS NOT AVAILABLE – OMIT THE DOSE. The use of intravenous gentamicin should be restricted to less than TWO WEEKS where possible in haemodialysis patients. Decisions to continue after this time should be made by the Haemodialysis Consultant.

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Review Due Dec 2026

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Documentation Controls

Development of Guideline:	Sue Shaw, Renal Pharmacist
Consultation with:	
Approved By:	Renal Pharmacist, 14/04/2020 16/10/2020 - Renal Consultants 16/10/2020 - Medical Division Reviewed no change - Sadaf Fatima (Renal Pharmacist) - Dec 2023 Medicine Division -
Review Date:	December 2026
Key Contact:	Renal Pharmacist/Renal Consultants

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