

SIVUH Gentamicin Once Daily Dosing and Monitoring Guidelines

Dose

For surgical prophylaxis dosing see MicroGuide App

PLEASE USE THE GENTAMICIN CALCULATOR ON MICROGUIDE TO CALCULATE THE DOSE

Step 1: Patient Weight

1. Confirm patient's actual body weight (ABW) and height.
2. Use the Ideal Body Weight (IBW) calculator to calculate the patient's IBW
3. **If the difference between IBW and ABW is LESS than 20% use the ABW.**

OR

If the patient is obese and there is a difference of GREATER than 20% between ABW and IBW use the Dose Determining Weight (DDW)

$$DDW = IBW + 0.4(ABW - IBW)$$

Step 2: Renal function

Calculate CrCl. Use this CrCl and the selected weight from Step 1 to calculate the dose.

CrCl	Gentamicin Dose
>50ml/min	5mg/kg IV OD (max 480mg)
30-50ml/min	4mg/kg IV OD *
10-30ml/min	3mg/kg IV OD*
5-10ml/min	2mg/kg IV STAT*
HD/CAPD/CVVH	Consult Renal team

*For critically ill patients with sepsis or septic shock the 1st dose can be given as a stat dose of 5mg/kg even in renal dysfunction, unless the patient is frail, elderly or has very low body weight.

Administration

Flush line with NS before and after gentamicin administration

Available Preparation	80mg/2ml Already in solution
Compatible with	Sodium Chloride 0.9% (NS) Glucose 5% (G5%)

Dose should be rounded to the nearest ml
Ensure patient is well hydrated during therapy

IV infusion

- Add the total dose of gentamicin to 100ml of NS or G5% and administer over 20 minutes.
- Ideally administer via a central venous access device to avoid potential venous irritation.
- If given peripherally choose a large vein and monitor the injection site closely.

IM injection

- Withdraw the required dose. Give by IM injection into a large muscle such as the gluteus or the lateral aspect of the thigh.
- Volumes greater than 4ml should be distributed between two or more injection sites.

Additional Information

- ! **Ototoxicity:** Monitor daily for signs (dizziness, ringing in ears, vertigo, tinnitus). If treating for >7 days baseline and weekly auditory function tests should be assessed.
- ! **Nephrotoxicity:** Check renal function regularly. Review with Micro if renal function worsens. Consult Pharmacy if also on other potential nephrotoxic agents (e.g. NSAIDs, ACE inhibitors)
- ! **Muscle weakness:** Contraindicated in myasthenia gravis. Use with caution in movement disorders (e.g. Parkinsons)

Monitoring

All request forms for gentamicin levels **MUST** state the **SAMPLING TIME**

Target pre-dose (trough) level <1mg/L

- **A level must be taken before the second dose. Take level 18-24 hours after last dose.**
- **If level and CrCl stable check subsequent levels twice weekly. Check daily if unstable or poor renal function**
- If renal function is stable do not hold next gentamicin dose while awaiting result (unless advised by Micro or Pharmacy)
- In rare cases, patient samples may contain particle agglutinating proteins (e.g. heterophilic antibodies or antibodies due to abnormal immunoglobulin synthesis, such as Waldenström's macroglobulinemia) which may lead to incorrect low or high results. Notify lab if the patient has this type of gammopathy as alternative assay method is required.

Suggested Gentamicin Dose Adjustments

Pre-dose level	Suggested Action
<1mg/L	Continue with the same dose. Monitor renal function. Review ongoing need daily.
>1mg/L	<ul style="list-style-type: none"> ✓ Check level taken at correct time pre-dose. ✓ Check sample wasn't taken from the same venous catheter used to administer gentamicin. If level taken correctly HOLD next dose. Do not redose until level <1mg/L. Review use with Pharmacy/Micro.