# Gentamicin Intravenous for Adults

## Who can administer

May be administered by registered competent doctor or nurse/midwife

## Important information

- Effective use of gentamicin is complex and should normally be discussed with micro/ID
- **Dose MUST be individualised** according to renal function and weight - the gentamicin **dosing calculator on the GAPP antimicrobial app should be used** to calculate the dose
- **Dose should not normally exceed 400mg for once daily dosing regimen**
- In general, treatment should be **reviewed within 24 hours and daily thereafter** by Consultant/Specialist Registrar, and courses should not usually exceed **three** days
- Do **NOT hold dose** in patients less than 65 years, with good renal function (CrCl>80ml/min with good urine output) while waiting for levels to be reported **unless** there are reasonable grounds for suspecting toxicity
- **However,** in patients **over 65 years**, or with **abnormal renal function** (CrCl less than 80ml/min) **-** it is generally preferable to await the result of the first gentamicin level (before the second dose) before giving the next dose. If the level is <1mg/mL and renal function is stable, it is not necessary to routinely hold subsequent doses pending levels, unless there are obvious signs of toxicity
- Monitoring requirements - see overleaf
- For Y-site compatibility see below

## Available preparations

Gentamicin 80mg per 2ml vial (Amdipharma)

## Reconstitution

Already in solution

**Draw up using a 5 micron filter needle**

## Infusion fluids

Sodium chloride 0.9% or Glucose 5%

## Methods of intravenous administration

**Slow intravenous injection (for multiple daily doses)**

- Administer over at least 3 minutes

**Intravenous infusion (for once daily doses)**

- Add to 100ml infusion fluid and administer over 30 minutes [ref 1]
- A 50ml infusion may be used if required (eg fluid restriction) but the residual volume in the infusion line must be flushed through at the same rate to avoid significant underdosing

# Dose in adults

- **Dose MUST be individualised** according to renal function and weight
- **Once-daily dosing for gentamicin is recommended** for most patients, except in endocarditis, where lower, multiple daily dosing is used
- **Once daily doses:** The **gentamicin dosing calculator on the GAPP app should be used** to calculate the gentamicin dose
- **Multiple daily doses:** See Gentamicin Dosing and Monitoring guidelines section in the GAPP app (separate section to the calculators)
- In general, treatment should be **reviewed within 24 hours and daily thereafter** by Consultant/Specialist Registrar, and courses should not usually exceed **three** days
- For **Pregnant patients:** use booking weight for dose calculations (booking weight = obstetric patient's weight at first booking/antenatal appointment) [ref 2]
- **Haemodialysis**- see GAPP document

# Monitoring

- Monitor for ototoxicity and nephrotoxicity
- Monitor gentamicin levels (as per GAPP), renal function and urine output
- See under important information above regarding holding doses
- **Once daily doses: See table 1 below**
- **Multiple daily doses:** See GAPP. Peak and trough levels required

**Table 1:ONCE DAILY GENTAMICIN: Monitoring**

• Measure pre-dose(trough) levels only
• The first pre-dose level should be taken within 1 hour before the 2nd dose is due
• Document on request form date and time sample was taken and date and time of last dose
• If the level is less than 1mg/L, re-check pre-dose levels twice per week thereafter, or more often if impaired or rapidly changing renal function, haemodynamically unstable, elderly, or on diuretic therapy
• Note that monitoring of renal function in addition to monitoring of aminoglycoside levels is important as toxicity may occur in patients in whom the aminoglycoside levels have never exceeded the acceptable range
• With respect to ototoxicity, vestibular disturbance (vertigo, ataxia) often precedes disturbance of hearing and should not be discounted because the patient has levels within the acceptable range

**Interpretation of Pre-dose Levels for Once Daily Gentamicin**

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

| **Level** | **Advice** |
|---|---|

| | |
|---|---|
| <1mg/L | 1 Is gentamicin still needed?<br>2 Is patient responding clinically?<br>3 Continue same dose if renal function stable but if renal function is changing, recalculate dose with current creatinine<br>4.Check level in 3 days (**or more often** if impaired or rapidly changing renal function, haemodynamically unstable, elderly, or on diuretic therapy) |
| 1mg/L or greater | 1. Is gentamicin still needed?<br>2. Is it a true pre-dose trough level (taken within one hour before dose)?<br>3 Where was sample taken from? (falsely high levels can occur if taken from same line used to give gentamicin).<br>4 Is dose correct for weight & renal function?<br>5 Is renal function stable?<br>6 **Dose adjustment required -**contact Microbiology or Infectious Diseases or Pharmacy to discuss on a case-by-case basis. |

## Storage

Store below $25^{0}$C

Do not freeze

## References

SPC Gentamicin 80mg/2ml Amdipharm April 2024

1: GUH Antimicrobial Guidelines 2021

2. Email on file 22nd Dec 2022

Search Synonym Gentamycin

## Therapeutic classification

Aminoglycoside antibiotic