

## Can only be prescribed under supervision of an infection specialist

Amikacin is an aminoglycoside antibacterial and is reserved for ID/Micro use in resistant severe gram negative bacterial infections. A recent systematic review found little published evidence to support an optimal dosage regimen or TDM targets for amikacin therapy. This guidance is adapted from unpublished work done in NHS GG&C with their kind permission.

### Exclusions:

This guidance **DOES NOT** apply to the following groups of patients:

- TB – refer to [TB Monographs](#) website
- <16 years old
- Endocarditis
- eGFR <20ml/min or AKI3 on dialysis or renal transplant or end stage renal disease on dialysis with residual kidney function
- Myasthenia gravis
- Ascites >20% body weight or decompensated liver disease
- Burns >20% body surface
- Pregnancy
- Cystic Fibrosis

### Dose:

- Calculate CrCl using [actual or maximum body weight](#) (whichever is lower) - do not use eGFR

$$\frac{(140 - \text{age (years)}) \times \text{weight (kg)}}{\text{Creatinine (micromol/L)}} \times 1.23 \text{ (males)} \quad \text{If Cr} < 60 \text{ micromol/L use 60 in calculation}$$

$$\times 1.04 \text{ (females)}$$

- Use [actual or maximum body weight](#) (whichever is lower) to calculate dose from table below

CrCl (ml/minute)	Amikacin dose (use actual or maximum body weight whichever is lower)
20-29	5.5mg/kg 24 hourly
30-49	6mg/kg 24 hourly
50-70	12mg/kg 24 hourly
>70	15mg/kg 24 hourly

- Follow administration details provided with product.

### Target Concentrations and Sampling Guidelines:

- Blood samples have to be sent to Bristol for analysis – please discuss with Microbiology
- Check levels within the first 48 hours then every 2-3 days thereafter
- Dose requirements will change if renal function alters
  - check creatinine concentration and eGFR daily
- Please record the exact times of all doses and samples on the electronic request
- If CrCl ≥50ml/min
  - Peak (1 hour post dose): 35mg/L
  - Trough (pre dose): <2mg/L

- If CrCl <50ml/min
  - Peak (1 hour post dose): 15-30mg/L
  - Trough (pre dose): <5mg/L
- If trough level high extend dosing interval. If peak level high reduce dose. If peak level low increase dose. Seek advice from pharmacy if unsure how to interpret the result.

#### **Adverse effects:**

- Amikacin affects auditory function to a greater extent than gentamicin. If therapy is expected to last >7 days refer to audiology for baseline audiometry and repeat weekly.
- Monitor daily for any vestibular or auditory function
- Check renal function daily
- Ensure patient is well hydrated
- Avoid co-prescription of other nephrotoxic or ototoxic medicines

#### **References:**

Amikacin Use and TDM in Adults. BSAC Working Party on TDM [J Antimicrob Chemother \(2016\) 71 \(10\): 2754-2759](#).

Amikacin Summary of Product Characteristics accessed on 180417:  
<https://www.medicines.org.uk/emc/medicine/619>

[Medusa Injectable Medicines Guide](#)

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