

## Amikacin - Therapeutic Drug Monitoring (TDM) Guidance

On the microbiology request card for serum levels, please supply details of the antibiotic level required, the time and date of the sample and the time since the last dose was administered. For further details and information on the sample required please visit the [Laboratories departmental page for Individual tests and select the appropriate drug from the A-Z list](#).

Results can be obtained electronically via TrakCare and SCI-store or from Medical Microbiology (Ext 52451). Help in interpretation of the results and dose adjustments for individual patients can be obtained from your ward Clinical Pharmacist, Specialist Antibiotic Pharmacists (Ext 51048), Medicines Information Service (Ext 52316), or out of hours the On-call Pharmacist via switchboard or from the duty medical microbiologist.

In patients with impaired renal function or antibiotic levels outwith the therapeutic range, please contact your clinical pharmacist or medical microbiologist for advice on dosage and the need for further assays.

For advice on monitoring of drugs for the treatment of tuberculosis (TB) liaise with TB service or microbiology. Further information can be found at <http://www.tbdrugmonographs.co.uk>.

Drug	Optimum sampling time(s)	Target Range/Points to note
<b>Amikacin</b>  <b>Once Daily</b>	Pre-dose (trough) level before the <b>second dose</b> .  Post-dose (peak) level 60 minutes after administration of same dose.	Pre-dose (trough) <5mg/L  Post-dose (peak) >35mg/L  For the treatment of Tuberculosis (TB) and Non-tuberculous mycobacteria (NTM) peak level of 25-35mg/L (as per TB drug monographs/ <a href="#">BTS guidelines</a> ). Seek specialist advice.  Peak level can be repeated if response poor and dosage altered.  Repeat trough level weekly if no dose change and renal function stable.  Renal function should be checked twice weekly if stable or according to BTS guidelines.  Auditory and vestibular function should also be monitored during treatment.  <i>(NB: Levels not assayed in ARI – liaise with Medical Microbiology).</i>

Drug	Optimum sampling time(s)	Target Range/Points to note
<b>Amikacin</b> <b>Multiple Daily Dosing Regimen</b>	Pre-dose (trough) level just before the <b>third dose</b> .  Post dose (peak) level <b>one hour</b> after administration of the same dose.	Pre-dose (trough) <10mg/L Post-dose (peak) 20-30mg/L  Further monitoring is usually twice weekly pre-dose levels if no dose change and normal/stable renal function.  Renal function should be checked twice weekly if stable or according to BTS guidelines.  Auditory and vestibular function should also be monitored during treatment.  <i>(NB: Levels not assayed in ARI – liaise with Medical Microbiology).</i>
<b>Amikacin</b> <b>Two to Three Times Weekly</b>  (For multidrug resistant TB or Non-Tuberculous mycobacteria)  <i>[NB: Only for respiratory / infectious diseases use]</i>	Pre-dose (trough) level before the <b>second dose</b> .  Post-dose (peak) level 60 minutes after administration of same dose.	Pre-dose (trough) <5mg/L Post-dose (peak) 65-80mg/L  Peak level can be repeated if response poor and dosage altered.  Repeat trough level weekly if no dose change and renal function stable.  Renal function should be checked twice weekly if stable or according to BTS guidelines.  Auditory and vestibular function should also be monitored during treatment.  <i>(NB: Levels not assayed in ARI – liaise with Medical Microbiology).</i>

## References

1. Individual drug monograph - <https://bnf.nice.org.uk/drug/amikacin.html>
2. Summary of Product Characteristics (Amikacin 250mg/ml Injection, Hospira Ltd – accessed 2/6/2020) - [www.medicines.org.uk](http://www.medicines.org.uk)
3. North Bristol NHS Trust Antimicrobial Reference Laboratory – Guideline Ranges 2020 - <https://www.nbt.nhs.uk/sites/default/files/Antibiotic%20Guideline%20Ranges%202020.pdf>
4. North Bristol NHS Trust Antimicrobial Reference Laboratory – Analytes - Amikacin <https://www.nbt.nhs.uk/severn-pathology/requesting/test-information/amikacin>
5. British Thoracic Society Guidelines for the Management of Non-tuberculous Mycobacterial Pulmonary Disease (NTM-PD) British Thoracic Society NTM Guideline Development Group - <https://www.brit-thoracic.org.uk/document-library/guidelines/ntm/bts-guideline-for-the-management-of-non-tuberculous-mycobacterial-pulmonary-disease/>
6. Amikacin drug monograph - <http://www.tbdrugmonographs.co.uk/amikacin.html>
7. Amikacin two to three times weekly dosing – specialist advice on file