Gentamicin,

Vancomycin,

Tobramycin,

Amikacin

Guidelines for the treatment of infections in Adults ≥16 years only

(excluding renal units, patients receiving dialysis or paediatric patients)

Frequently Asked Questions (FAQs)

Gentamicin FAQs

	Gentamicin for the treatment of infections in Adults ≥16 years old	**Gentamicin for SYNERGISTIC use i.e. infective endocarditis in NON-PREGNANT Adults ≥16 years old**
Where can I find the gentamicin guideline?	AthenA – gentamicin dosing guidelines in adults ≥ 16 years (non-renal patients).	AthenA – Guidelines: Synergistic Gentamicin for Endocarditis in **non-pregnant** adults ≥ 16 years old.
How should I calculate a dose if creatinine is known?	Use gentamicin calculator on AthenA/ Antimicrobial Companion app (if calculator/app not available refer to guideline).	Need to calculate Creatinine Clearance (ml/min) (**i.e. NOT eGFR**) - see guideline Synergistic Gentamicin for Endocarditis in non-pregnant adults ≥ 16 years old for information on how to calculate the Creatinine Clearance and dose and frequency of gentamicin. Discuss with a pharmacist if required.
How should I calculate a dose if creatinine is NOT known?	Give 5mg/kg gentamicin actual body weight or booking weight in pregnancy (maximum 400mg) or if CKD 5 give 2.5mg/kg (maximum 180mg) on advice of senior medical staff.	If creatinine is not known give 1mg/kg gentamicin (maximum 120mg) and seek advice from pharmacy.
Where to prescribe gentamicin?	Paper gentamicin chart and prescribe 'AS CHARTED' in HEPMA PRN section.	Prescribe in regular HEPMA section.
How should I prescribe gentamicin on HEPMA?	Select HEPMA option 'GENTAMICIN AS CHARTED' intravenous infusion '1 dose' as required (PRN) – SEE PAPER CHART.	Select HEPMA option: 'Gentamicin Synergistic (ENDOCARDITIS)' and add dose and frequency.
Check renal function/assess patient for signs of toxicity?	Daily.	Daily.
When to take the first gentamicin level?	6 – 14 hours after the start of the first gentamicin infusion (or after 24 hours if CrCl<21 ml/min).	For monitoring gentamicin levels refer to information on the synergistic gentamicin guidelines (can also be found on the synergistic gentamicin monitoring chart).
Type of blood sample tube for levels?	Orange top. **Record the time and date of the blood sample on the request form and the sample tube.**	Orange top. **Record the time and date of the blood sample on the request form and the sample tube**.
How to interpret gentamicin levels?	Refer to information on gentamicin chart/guidelines for advice on interpreting levels and re-prescribing. Seek advice from pharmacy if required.	Aim for: **Pre-dose (trough) <1 mg/L** **Post dose (peak) of 3-5 mg/L**
How often should gentamicin levels be repeated?	If renal function stable and initial gentamicin levels ok then check gentamicin levels at least every 2 days.	If renal function stable and initial gentamicin levels ok then check gentamicin levels every 2 days.
When should gentamicin be reviewed?	Review daily **-** To minimise the risk of toxicity, duration of treatment should normally be limited to 72 hours. For guidance on treatment following 72 hours of gentamicin please refer to IV Gentamicin review after 72 hours of treatment algorithm. If gentamicin continues for >7days, suggest referral to audiology for assessment.	Course length for endocarditis is usually advised by infection specialist/microbiology. The definitive treatment regimen depends on the causative organism, its minimum inhibitory concentration (MIC) to the chosen antimicrobial(s), and the nature of the infected valve (native/prosthetic).

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Vancomycin FAQs

	Vancomycin Use in Adults ≥ 16 years Intermittent (PULSED) Infusion	Vancomycin Use in Adults ≥ 16 years CONTINUOUS Infusion
Where can I find the vancomycin guideline?	AthenA – Vancomycin Use in Adults ≥ 16 years Intermittent (Pulsed) Infusion (non-renal patients).	AthenA - Intravenous Vancomycin Use in Adults ≥ 16 years Continuous Infusion (non-renal patients).
How should I calculate a dose if creatinine known?	Use vancomycin calculator on AthenA or Antimicrobial Companion app (if calculator/app not available refer to guideline).	Use vancomycin calculator on AthenA or Antimicrobial Companion app (if calculator/app not available refer to guideline).
How should I calculate a dose if creatinine NOT known?	Prescribe a loading dose based on actual body weight – refer to guideline/chart for information). Calculate maintenance dose once creatinine is available.	Prescribe a loading dose based on actual body weight – refer to guideline/chart for information). Calculate maintenance dose once creatinine is available.
Where to prescribe vancomycin?	Paper vancomycin (pulsed) chart (purple coloured) and prescribe 'AS CHARTED' in HEPMA PRN section.	Paper vancomycin (continuous) chart (green coloured) and prescribe 'AS CHARTED' in HEPMA PRN section.
How should I prescribe vancomycin on HEPMA?	Select HEPMA option: 'VANCOMYCIN infusion AS CHARTED' intravenous infusion '1 dose' as required (PRN) – SEE PAPER CHART.	Select HEPMA option: 'VANCOMYCIN infusion AS CHARTED' intravenous infusion '1 dose' as required (PRN) – SEE PAPER CHART.
Check renal function/assess patient for signs of toxicity?	Daily.	Daily.
When to take the first vancomycin level?	Once the patient has received 24 - 48 hours of maintenance therapy check trough sample (pre-dose) (take sample 5 minutes before administration).	Take a sample after 12 – 24 hours of starting the maintenance continuous infusion (level can be taken at any time while on the continuous infusion).
Type of blood sample tube for levels?	Orange (or white) top. **Record the time and date of the blood sample on the request form and the sample tube.**	Orange (or white) top. **Record the time and date of the blood sample on the request form and the sample tube.**
How to interpret vancomycin levels?	Target concentration range: **10 - 20 mg/L** (**15 - 20 mg/L** severe or deep seated infection target) Refer to information on vancomycin chart/guidelines for advice on interpreting levels and re-prescribing. Seek advice from pharmacy if required.	Target concentration range: **15 – 25 mg/L** (**20 – 25 mg/L** severe or deep seated infection target) Refer to information on vancomycin chart/guidelines for advice on interpreting levels and re-prescribing. Seek advice from pharmacy if required.
How often should levels be repeated?	Recheck levels every 2 - 3 days or daily if the patient has unstable renal function.	Recheck levels every 1 - 2 days or daily if the patient has unstable renal function.
When should vancomycin be reviewed?	Course length determined by indication – see empirical antimicrobial guidelines for suggested course length for infection being treated or discuss with infection specialist/microbiology.	Course length determined by indication – See empirical antimicrobial guidelines for suggested course length for infection being treated or discuss with infection specialist/microbiology.
What should I do if the dose has been unintentionally delayed?	See Management of delays in vancomycin dose administration guidance in guideline/chart.	Seek advice from pharmacy if required.

Tobramycin Intravenous Infusion (IV)FAQs

	Tobramycin Use in Adults ≥ 16 years (NON Cystic Fibrosis (CF)) **(use only on the advice of a Consultant Microbiologist/ Infection specialist)**	**Tobramycin for the treatment of infections in adults ≥ 16 years with Cystic Fibrosis (CF)**
Where can I find information on tobramycin IV dosing?	**Discuss with a pharmacist before using Tobramycin.** A Tobramycin prescribing, administration and monitoring chart (blue coloured) is available from the emergency drugs cupboard at Ayr and Crosshouse hospitals (next to tobramycin injections) and from the Antimicrobial pharmacists. **From a microbiology and pharmacokinetic point of view gentamicin and tobramycin are interchangeable therefore the calculated doses and monitoring requirements are the same.**	**Discuss with a pharmacist before using Tobramycin.** Use patient specific dose in CF. Adults ≥ 16 years with CF from Ayrshire and Arran are usually also under the care of Queen Elizabeth University Hospital (QEUH). QEUH should be contacted for advice on tobramycin dosing (wards 7A or 7D) or the patient's previous doses can also be accessed via the GGC 'portal' - information is held in the patient's 'outpatient continuation sheet' section of the GGC portal. (If QEUH cannot be contacted then, until they can be contacted for advice, refer to guidance on Tobramycin dosing in Adults ≥ 16 years (non CF)) to calculate the dose and follow its monitoring advice etc).
How should I calculate a dose if creatinine known?	Use calculator on AthenA – use the online ***gentamicin*** dosing calculator/Antimicrobial Companion app (if calculator/app unavailable refer to dosing information on the tobramycin chart).	As per advice from QEUH.
How should I calculate a dose if creatinine NOT known?	Give 5mg/kg tobramycin actual body weight or booking weight in pregnancy (maximum 400mg) or if CKD 5 give 2.5mg/kg (maximum 180mg) on advice of senior medical staff.	As per advice from QEUH.
Where to prescribe tobramycin?	Paper tobramycin chart and prescribe 'AS CHARTED' in HEPMA PRN section.	No paper chart available. Prescribe in regular HEPMA section and add dose and frequency.
How should I prescribe tobramycin on HEPMA?	Select HEPMA option 'TOBRAMYCIN AS CHARTED' intravenous infusion '1 dose' as required (PRN) – SEE PAPER CHART.	Select HEPMA option: TOBRAMYCIN (CYSTIC FIBROSIS) 80mg in 2ml injection (and prescribe the recommended doses and frequency).
Check renal function/assess patient for signs of toxicity?	Daily.	Daily.
When to take the first tobramycin level?	6 – 14 hours after the start of the first tobramycin infusion (or after 24 hours if CrCl<21 ml/min).	Check levels within the first 24- 36 hours of therapy: Pre-dose (trough) (take sample 5 minutes before administration) and one hour post dose (peak).
Type of blood sample tube for levels?	Orange top. **Record the time and date of the blood sample on the request form and the sample tube.**	Orange top. **Record the time and date of the blood sample on the request form and the sample tube.**
How to interpret tobramycin levels?	Refer to information on tobramycin chart for advice on interpreting levels and re-prescribing. Seek advice from pharmacy if required.	If using QEUH CF dosing aim for: **Pre-dose (trough) <1 mg/L** (if the trough level is high, the interval between doses must be increased). **Post dose (peak) 8 - 12mg/L** (if the peak level is high, the dose must be decreased).
How often should levels be repeated?	If renal function stable and initial tobramycin levels ok then check tobramycin levels at least every 2 days.	If renal function stable and initial tobramycin levels ok then check tobramycin levels at least every 2 – 3 days or as directed by GGC.
When should tobramycin be reviewed?	Review daily **- DO NOT continue tobramycin treatment beyond 3 or 4 days without discussing with an infection specialist or microbiology.** If tobramycin continues for >7days, suggest referral to audiology for assessment.	Course length usually advised by infection specialist/microbiology/CF team.

Amikacin FAQs

	Amikacin for treatment of infections in Adults ≥16 years old (use only on the advice of an Infection specialist)
Where can I find the guideline?	**Discuss with a pharmacist before using Amikacin.** AthenA – IV Amikacin dosing guidelines in adults ≥ 16 years (non-renal patients)
How should I calculate a dose?	Need to calculate Creatinine Clearance (ml/min) (**i.e. NOT eGFR**) - see guideline - amikacin dosing guidelines in adults ≥ 16 years (non-renal patients) for information on how to calculate the Creatinine Clearance and then calculate amikacin dose, discuss with a pharmacist if required.
Where to prescribe amikacin?	No paper chart available. Prescribe in regular HEPMA section.
How should I prescribe on HEPMA?	Select HEPMA option: 'Amikacin' and add dose and frequency
Check renal function/assess patient for signs of toxicity?	Daily
When to take the first level?	Within the first 48 hours of therapy. Pre-dose (trough) (take sample 5 minutes before administration) and post dose (peak) one hour after administration.
Type of blood sample tube for levels?	White top. Complete Microbiology sample request form **Record the time of the blood sample on the request form and the sample tube**.
How to interpret levels?	Refer to information on amikacin guidelines for advice on interpreting levels. Seek advice from pharmacy if required. Aim for: **If CrCl ≥ 50ml/min:** **Pre-dose (trough) <2 mg/L** (if the trough level is high, the interval between doses must be increased). **Post dose (peak) of > 35 mg/L** (if the peak level is high, the dose must be decreased). **If CrCl < 50ml/min:** **Pre-dose (trough) <5 mg/L** (if the trough level is high, the interval between doses must be increased). **Post dose (peak) of 15 - 30 mg/L** (if the peak level is high, the dose must be decreased).
How often should levels be repeated?	If renal function stable and initial amikacin levels ok then check amikacin levels every 2 - 3 days.
When should amikacin be reviewed?	Review daily **- DO NOT continue amikacin treatment beyond 3 or 4 days without discussing with an infection specialist.** If amikacin continues >7 days, suggest referral to audiology for assessment. Course length is usually advised by an infection specialist