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GENTAMICIN DOSING GUIDELINE - ADULTS

Policy Procedure Guideline ✓ Trust wide ✓ Local

Document Control Summary

<table>
<thead>
<tr>
<th>Approved by &amp; date</th>
<th>Antimicrobial Usage Committee</th>
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<tbody>
<tr>
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<tr>
<td>Creator (name, job title, division/department)</td>
<td>Dr Bruce Macrae, Consultant Microbiologist</td>
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<td>Ms Preet Panesar, Microbiology Pharmacist</td>
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Related documents/policies

• Endocarditis infection – treatment
• Febrile neutropenia guidelines – treatment
• ICU antibiotic guidelines – treatment
• Lower respiratory tract infections – treatment
• Post operative infection – treatment
• Septicaemia
• Soft tissue infections – treatment
• Urinary tract infection – treatment and prophylaxis

Equalities Impact Assessment – List the Aspect/s of Equalities Duties that relate to this policy (if applicable)

This policy will be applied fairly and without prejudice whether on the grounds of race, gender, age, disability, sexual orientation or religion.

Version Control Summary

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
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<tr>
<td>2.0</td>
<td>17.06.08</td>
<td>Final draft</td>
<td>Presentation format changed.</td>
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<tr>
<td>2.1</td>
<td>19.06.08</td>
<td>Final</td>
<td>Added endocarditis as exclusion criteria for 7mg/kg dosing. Added specify type of regimen under monitoring for 7mg/kg.</td>
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<tr>
<td>2.2</td>
<td>03.07.09</td>
<td>Final</td>
<td>Trough levels in line with BNF (Mar 2009)</td>
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UCL Hospitals is an NHS Foundation Trust incorporating the Eastman Dental Hospital, Elizabeth Garrett Anderson & Obstetric Hospital, The Heart Hospital, Hospital for Tropical Diseases, National Hospital for Neurology & Neurosurgery, The Royal London Homoeopathic Hospital and University College Hospital

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GENTAMICIN DOSING GUIDELINE - ADULTS

Use 7mg/kg/day protocol UNLESS any of the following:
- age >70 years
- endocarditis
- cystic fibrosis
- jaundice (bilirubin >50µmol/L)
- history/signs of hearing loss and vestibular dysfunction
- CrCl <20ml/min
- pregnancy
- major burns
- severe liver disease/ascites

Dose: 7mg/kg/day IV* (see table below)
(see table below)
in 100ml NaCl 0.9% or Dex 5% over 1 hour

Dose: 1 - 1.5mg/kg/dose IV* (see table below)
(see table below)
in 100ml NaCl 0.9% or Dex 5% over 1 hour

Dose: 1mg/kg/dose IV* (see table below)
(see table below)
in 100ml NaCl 0.9% or Dex 5% over 1 hour

CrCl (ml/min) * (see table below)

Frequency:
- Based on renal function (do NOT use eGFR from CDR)
- >70: 8 hourly
- 30 – 70: 12 hourly
- < 30: discuss with Microbiology or Pharmacy

Frequency:
- 24, 36 or 48 hourly depending on the level after the first dose.
- The dose remains constant at 7mg/kg/day

Monitoring:
- Take a single blood sample at any time 6 – 14 hours after start of the infusion.
- Specify times of dose and sampling on request form.
- Specify 7mg/kg regimen on request form.
- If renal function and frequency remain unchanged, check levels twice a week.

Using the Hartford nomogram:
- If the level falls in the area designated Q24h, Q36h or Q48h, the recommended dosing interval is 24, 36 or 48 hours respectively.
- If the level falls on the line, the longer dosing interval is recommended.
- If the level is off the nomogram at the given time do not give another until the level falls below 1mg/L.

HARTFORD NOMOGRAM

* WEIGHT CALCULATIONS FOR GENTAMICIN DOSING:
Get actual body weight (ABW) in kg
Calculate ideal body weight (IBW) in kg

\[ IBW = x \text{ kg} + (2.3 \times \text{ each inch over 5ft}) \]
where \( x = 50\text{kg} \) (male)
        \( 45.5\text{kg} \) (female)

For 7mg/kg dosing, use corrected body weight (CBW) in obese patients:
\[ CBW (\text{kg}) = IBW + 0.4 (ABW – IBW) \]

* ESTIMATING CREATININE CLEARANCE (CrCl):
\[ \text{CrCl (ml/min)} = \frac{(140 - \text{age}) \times \text{IBW (kg)} \times F}{\text{serum creatinine (µmol/L)}} \]
where \( F = 1.23 \) (male)
        \( 1.04 \) (female)

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