Neonatal Medication Guideline

Clinical Guideline

Metronidazole

Policy developed by: SA Maternal, Neonatal & Gynaecology Community of Practice
Approved SA Health Safety & Quality Strategic Governance Committee on:
9 November 2017
Next review due: 9 November 2020

Summary
The purpose of this guideline is to guide nursing, medical and pharmacy staff in the dosing and administration of metronidazole

Keywords
metronidazole, neonatal medication guideline, sepsis, anaerobic, C.diff, clostridium difficile, urine, leucopenia

Policy history
Is this a new policy? N
Does this policy amend or update an existing policy? Y v1.0
Does this policy replace an existing policy? N
If so, which policies?

Applies to
All SA Health Portfolio
All Department for Health and Ageing Divisions
All Health Networks
CALHN, SALHN, NALHN, CHSALHN, WCHN, SAAS

Staff impact
All Clinical, Medical, Midwifery, Nursing, Students, Allied Health, Emergency, Mental Health, Pathology, Pharmacy

PDS reference CG041

Version control and change history

<table>
<thead>
<tr>
<th>Version</th>
<th>Date from</th>
<th>Date to</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>November 2012</td>
<td>November 2017</td>
<td>Original version</td>
</tr>
<tr>
<td>2.0</td>
<td>9 November 2017</td>
<td>Current</td>
<td>Complete review</td>
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Dose and Indications

**Infection due to susceptible anaerobic organisms**

Infectious Disease consultation is usually required prior to commencing therapy as metronidazole should be reserved for directed therapy only

**Intravenous Infusion, Oral**

Loading dose 15mg/kg

Followed by maintenance dose 7.5mg/kg given one dosing interval after initial dose, at frequency dosing interval indicated below:

<table>
<thead>
<tr>
<th>Corrected Age (weeks)</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Gestational Age PLUS Postnatal Age]</td>
<td></td>
</tr>
<tr>
<td>≤ 26</td>
<td>Every 24 hours</td>
</tr>
<tr>
<td>27 - 33</td>
<td>Every 12 hours</td>
</tr>
<tr>
<td>34 to 40</td>
<td>Every 8 hours</td>
</tr>
<tr>
<td>≥ 40</td>
<td>Every 6 hours</td>
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</table>

Length of treatment should be guided by pathology and clinical picture; however in proven sepsis treatment should continue for a minimum of 7 days.
Preparation and Administration

Intravenous Infusion
The intravenous injection contains 5mg/mL metronidazole

<table>
<thead>
<tr>
<th>Dose</th>
<th>5mg</th>
<th>10mg</th>
<th>15mg</th>
<th>20mg</th>
<th>25mg</th>
<th>30mg</th>
<th>35mg</th>
<th>40mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>1mL</td>
<td>2mL</td>
<td>3mL</td>
<td>4mL</td>
<td>5mL</td>
<td>6mL</td>
<td>7mL</td>
<td>8mL</td>
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</table>

Administer as an intravenous infusion over at least 30 minutes.

Intravenous doses may be given undiluted

Oral
The oral suspension contains 40mg/mL metronidazole

<table>
<thead>
<tr>
<th>Dose</th>
<th>8mg</th>
<th>12mg</th>
<th>16mg</th>
<th>20mg</th>
<th>24mg</th>
<th>28mg</th>
<th>32mg</th>
<th>36mg</th>
<th>40mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>0.2mL</td>
<td>0.3mL</td>
<td>0.4mL</td>
<td>0.5mL</td>
<td>0.6mL</td>
<td>0.7mL</td>
<td>0.8mL</td>
<td>0.9mL</td>
<td>1mL</td>
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</tbody>
</table>

Give oral suspension at least an hour before or two hours after feeds to maximise absorption.

Compatible Fluids
Glucose 5%, sodium chloride 0.9%, glucose/sodium chloride solutions.
Glucose 10% is compatible but not recommended due to high osmolarity of the resulting solution.

Adverse Effects

Common
Vomiting, diarrhoea, thrombophlebitis (IV)

Infrequent
Glossitis, stomatitis

Rare
Pancreatitis, hepatitis, optic neuritis, thrombocytopenia, Clostridium difficile-associated disease, hypersensitivity reactions (eg rash, itch, flushing, fever), anaphylactic shock, angioedema, Stevens-Johnson syndrome, leucopenia, peripheral neuropathy, seizures, dark urine (due to drug metabolites)

Prolonged treatment
Leucopenia is reversible and usually only occurs after prolonged treatment; peripheral neuropathy (usually reversible) and/or CNS toxicity (eg seizures, encephalopathy, cerebellar toxicity) are more likely
Monitoring

> Consider periodic white cell count monitoring with prolonged treatment (>10 days)

Practice Points

> The intravenous infusion should be protected from light. Short term exposure to normal room light does not adversely affect stability, however direct sunlight should be avoided.
> The intravenous infusion must not be stored in the fridge as it may crystallise out of solution. Store at room temperature.
> Consider the necessity for intravenous administration as adequate levels can be achieved using oral formulations due to high bioavailability.

References