Clinical Guideline
Levetiracetam

Policy developed by: SA Maternal & Neonatal Clinical Community of Practice
Approved by: Safety & Quality Strategic Governance Committee on: 28 April 2017
Next review due: 30 April 2020

Summary
The purpose of the Levetiracetam Neonatal Medication Guideline is to guide nursing, medical and pharmacy staff in the dosing and administration of levetiracetam.

Keywords
Levetiracetam, keppra, neonatal medication guideline, seizure, epilepsy, neurology, neurologist, antiepileptic, clinical guideline, Levetiracetam Neonatal Medication Guideline

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

Applies to
All Health Networks
CALHN, SALHN, NALHN, CHSALHN, WCHN

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

PDS reference CG258

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>28 April 2017</td>
<td>Current</td>
<td>New</td>
</tr>
</tbody>
</table>

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Dose and Indications

Seizures on advice from a paediatric neurologist

Intravenous / Oral

Loading dose:
Initially 20mg/kg, followed by a dose of 20mg/kg repeated 12 hours later.

The requirement for a loading dose depends on the urgency with which seizure control is needed.

Maintenance dose:
Initially 10 to 12.5mg/kg/dose, which can be increased as needed every 1-2 weeks up to 60mg/kg/day.

<table>
<thead>
<tr>
<th>Postnatal age (days)</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;28</td>
<td>Every 12 hours</td>
</tr>
<tr>
<td>&gt;28</td>
<td>Every 8-12 hours</td>
</tr>
</tbody>
</table>

Oral administration is preferred in neonates.
**Preparation and Administration**

**Intravenous**

Dilute 3mL of the 500 mg/5mL levetiracetam injection with 17mL of compatible fluid. The resulting solution contains 15mg/mL:

<table>
<thead>
<tr>
<th>Dose</th>
<th>15 mg</th>
<th>30 mg</th>
<th>45 mg</th>
<th>60 mg</th>
<th>75 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>1mL</td>
<td>2mL</td>
<td>3mL</td>
<td>4mL</td>
<td>5mL</td>
</tr>
</tbody>
</table>

Give as an intravenous infusion over at least 15 minutes.

**Oral**

The oral mixture contains 100 mg/mL:

<table>
<thead>
<tr>
<th>Dose</th>
<th>20 mg</th>
<th>40 mg</th>
<th>60 mg</th>
<th>80 mg</th>
<th>100 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>0.2mL</td>
<td>0.4mL</td>
<td>0.6mL</td>
<td>0.8mL</td>
<td>1mL</td>
</tr>
</tbody>
</table>

**Compatible Fluids**

Glucose 5%, sodium chloride 0.9%

**Adverse Effects**

Sedation and irritability, increased diastolic blood pressure. Serious dermatologic reactions, such as Stevens-Johnson syndrome and toxic epidermal necrosis, have been reported.

**Monitoring**

**Practice Points**

- If ceasing therapy, the dose should be reduced gradually as abrupt withdrawal may lead to an increase in seizure frequency
- Changing from IV to oral therapy does not require any dosage conversion
- Oral levetiracetam is not affected by food

**Version control and change history**

**PDS reference**: OCE use only

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