Dose and Indications

Seizures

Consider consultation with Paediatric Neurologist

Intravenous/Oral

Loading dose:

Initially 40 mg/kg, followed by a dose of 20 mg/kg repeated 30 minutes later if required.

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

This dosing is based on data for term or near-term infants.

Maintenance dose

10 mg/kg/dose 12 hourly, which can be increased as needed every 1-2 weeks up to 60 mg/kg/day.

Oral administration is preferred in neonates
Preparation and Administration

Intravenous

Dilute 300 mg (3 mL of the 500 mg/5 mL levetiracetam injection) with 17 mL of compatible fluid. The resulting solution contains 15 mg/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>
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</thead>
<tbody>
<tr>
<td>Volume</td>
<td>1 mL</td>
<td>2 mL</td>
<td>3 mL</td>
<td>4 mL</td>
<td>5 mL</td>
</tr>
</tbody>
</table>

Give as an intravenous infusion over at least 15 minutes.

Oral

The oral mixture contains 100 mg/mL:

<table>
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<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>0.2 mL</td>
<td>0.4 mL</td>
<td>0.6 mL</td>
<td>0.8 mL</td>
<td>1 mL</td>
</tr>
</tbody>
</table>

May be given anytime with regards to feeds.

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

> Blood pressure, conscious state, seizure activity (frequency, duration, severity)

Practice Points

> If ceasing maintenance 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
> Levetiracetam is primarily eliminated renally, however there are no recommendations for dose adjustments in neonates

References

Levetiracetam

500 mg/5 mL injection, 100 mg/mL oral liquid

Document Ownership & History

Developed by: SA Maternal, Neonatal & Gynaecology Community of Practice
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<th>Version</th>
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<td>18/10/2023</td>
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<td>Domain Custodian, Safety and Quality</td>
<td>Updates to dose and indications, prep and administration, monitoring and practice points</td>
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