Drug Therapy Protocols: Levetiracetam (Keppra®)

Policy code: DTP_LEV_0120
Date: January, 2020
Purpose: To ensure a consistent procedural approach to levetiracetam (Keppra®) administration.
Scope: Applies to all Queensland Ambulance Service (QAS) clinical staff.
Population: Applies to all ages unless specifically mentioned.
Source of funding: Internal – 100%
Author: Clinical Quality & Patient Safety Unit, QAS
Review date: January, 2023
URL: https://ambulance.qld.gov.au/clinical.html

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All feedback and suggestions are welcome. Please forward to: Clinical.Guidelines@ambulance.qld.gov.au

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Levetiracetam

Drug class
Anticonvulsant

Pharmacology
Levetiracetam is a second-generation non-sedating anticonvulsant, the precise mechanism is not fully understood.

Metabolism
Non-hepatic hydrolysis and hydroxylation. Excreted by the kidneys.

Indications
- Convulsive Status Epilepticus continuing > 20 minutes post first midazolam administration

Contraindications

Absolute contraindications:
- Allergy and/or Adverse Drug Reaction
- Patient less than 1 year

Relative contraindications (QAS Clinical Consultation & Advice Line consultation and approval required):
- Toxicology related seizures

Precautions
- Nil

Side effects
- Drowsiness
- Dizziness
- Headache
- Fatigue

Presentation
- Vial, 500 mg/5 mL levetiracetam

Onset (IV) | Duration (IV) | Half-life
-----------|--------------|-----------
Rapid (peak 0.5–2 hours) | 1–2 days | 6–8 hours

Schedule
- S4 (Restricted drugs)
Levetiracetam

**Routes of administration**

Intravenous infusion (IV INF)

**Special notes**

- All cannulae and IV lines must be flushed thoroughly with sodium chloride 0.9% following each medication administration.
- All parenteral medications must be prepared in an aseptic manner. The rubber stopper of all vials must be disinfected with an appropriate antimicrobial swab and allowed to dry prior to piercing.

**Adult dosages**

**Convulsive Status Epilepticus continuing > 20 minutes post first midazolam administration[^1]**

<table>
<thead>
<tr>
<th>Dosage</th>
<th>Route</th>
<th>Details</th>
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<tbody>
<tr>
<td>30 mg/kg (rounded up to the nearest 5 kg)</td>
<td>IV INF</td>
<td>over 15 minutes. Single dose only. Total maximum dose 2 g. <em>Infusion preparation:</em> Prepare the required dose of levetiracetam (Keppra®) in an appropriately sized syringe. Inject preparation dose into a 100 mL bag of sodium chloride 0.9%. Ensure bag is appropriately labelled. Administer over 15 minutes (approx. 2 drops/second).</td>
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**Paediatric dosages**

**Convulsive Status Epilepticus continuing > 20 minutes post first midazolam administration[^1]**

<table>
<thead>
<tr>
<th>Dosage</th>
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<tbody>
<tr>
<td>16 kg or more (approx. 3 yrs of age or older)</td>
<td>IV INF</td>
<td>− 30 mg/kg (rounded up to the nearest 5 kg) over 15 minutes. Single dose only. Total maximum dose 2 g. <em>Infusion preparation:</em> Prepare the required dose of levetiracetam (Keppra®) in an appropriately sized syringe. Inject preparation dose into a 100 mL bag of sodium chloride 0.9%. Ensure bag is appropriately labelled. Administer over 15 minutes (approx. 2 drops/second).</td>
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<tr>
<td>Less than 16 kg (approx. less than 3 years of age)</td>
<td>IV INF</td>
<td>− 30 mg/kg (rounded up to the nearest 5 kg) over 10 minutes. Single dose only. Total maximum dose 450 mg. <em>Infusion preparation:</em> Mix the required dose of levetiracetam (Keppra®) with sodium chloride 0.9% to make up a total volume of 10 mL. Ensure syringe is appropriately labelled. Administer infusion via Perfusor® Space Medication Library (Levetiracetam-Paed &lt; 3 yrs).</td>
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