Drug Therapy Protocols: Phenytoin

<table>
<thead>
<tr>
<th>Policy code</th>
<th>DTP_PHE_0119</th>
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<tr>
<td>Date</td>
<td>January, 2019</td>
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<td>Purpose</td>
<td>To ensure a consistent procedural approach to phenytoin administration.</td>
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<td>Scope</td>
<td>Applies to all Queensland Ambulance Service (QAS) clinical staff.</td>
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<td>Health care setting</td>
<td>Pre-hospital assessment and treatment.</td>
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<td>Population</td>
<td>Applies to all ages unless specifically mentioned.</td>
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<tr>
<td>Source of funding</td>
<td>Internal – 100%</td>
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<tr>
<td>Author</td>
<td>Clinical Quality &amp; Patient Safety Unit, QAS</td>
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<td>Review date</td>
<td>January, 2022</td>
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Drug class
Anticonvulsant

Pharmacology
Phenytoin is an anticonvulsant which also has Class 1B anti-arrhythmic activity. The primary mechanism of action is prevention of repetitive neuronal discharge through inhibition of Na+ channel activity.[1–3]

Metabolism
Hepatic.[1]

Indications
- As a second line anticonvulsant in status epilepticus
- Seizure prophylaxis in certain neurosurgical cases[4]

Contraindications
- Allergy and/or Adverse Drug Reaction
- Cardiac conduction abnormalities identified on the ECG

Precautions
- Impaired liver function
- Hypotension and/or severe myocardial insufficiency

Side effects
- Hypotension
- Bradycardia
- AV heart block
- CNS depression
- Nausea and/or vomiting
- Skin rash

Presentation
- Ampoule, 250 mg/5 mL phenytoin

Onset (INF) | Duration (INF) | Half-life
---|---|---
30–60 minutes | 24 hours | 24 hours
Phenytoin

**Schedule**
- S4 (Restricted drugs).

**Routes of administration**
- Intravenous infusion (IV INF)

**Special notes**
- Ambulance officers must only administer medications for the listed indications and dosing range. Any consideration for treatment outside the listed scope of practice requires mandatory approval via the QAS Clinical Consult and Advice Line.
- All phenytoin infusions are to be initiated using hospital medication and infusion (filter) supplies. Phenytoin will not be carried by the QAS flight team.
- Patients receiving phenytoin infusions require close haemodynamic monitoring: ECG, heart rate, blood pressure and respiratory function.
- Phenytoin should be administered into a large vein and flushed thoroughly to avoid phlebitis – IV cannula patency must be confirmed prior to administration. IV INF rate must not exceed 25 mg/minute.\(^1\)
- Severe cardiotoxic reactions and fatalities have been reported with atrial and ventricular conduction depression and VF.

**Adult dosages**
- **As a second line anticonvulsant in status epilepticus**
- **Seizure prophylaxis in certain neurosurgical cases**

**Paediatric dosages**
- **Note:** QAS officers are NOT authorised to administer phenytoin to paediatric patients.

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\(^1\) Phenytoin should be administered into a large vein and flushed thoroughly to avoid phlebitis – IV cannula patency must be confirmed prior to administration. IV INF rate must not exceed 25 mg/minute.