Drug Therapy Protocols: Phenytoin

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<table>
<thead>
<tr>
<th>Date</th>
<th>October, 2015</th>
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<tbody>
<tr>
<td>Purpose</td>
<td>To ensure a consistent procedural approach to Phenytoin administration.</td>
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<tr>
<td>Scope</td>
<td>Applies to all QAS clinical staff.</td>
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<tr>
<td>Author</td>
<td>Clinical Quality &amp; Patient Safety Unit, QAS</td>
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<tr>
<td>Review date</td>
<td>October, 2017</td>
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Phenytoin

**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]

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

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

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**Contraindications**
- KSAR or hypersensitivity to phenytoin
- Cardiac conduction abnormalities identified on the ECG

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

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**Presentation**
- Ampoule, 250 mg/5 mL phenytoin

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**Onset (INF)**
30–60 minutes

**Duration (INF)**
24 hours

**Half-life**
24 hours
Phenytoin

**Special notes**

- 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.

- All cannulae and IV lines must be flushed thoroughly with sodium chloride 0.9% following each medication administration.

### Adult dosages

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

<table>
<thead>
<tr>
<th>Route</th>
<th>Dosage</th>
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<tr>
<td>Intravenous infusion (IV INF)</td>
<td>CCP ESOP aeromedical – RSQ Clinical Coordinator consultation and approval required in all situations. 18 mg/kg (rounded down to the nearest 250 mg) over 60 minutes. <strong>Infusion preparation:</strong> Inject 18 mg/kg (rounded down to the nearest 250 mg) of phenytoin into a 100 mL bag of sodium chloride 0.9%. Ensure bag is appropriately labelled.</td>
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<tr>
<td>Intravenous infusion (IV INF)</td>
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### Paediatric dosages

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