Clinical Practice Guidelines:
Toxicology and toxinology/Calcium channel blocker

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<table>
<thead>
<tr>
<th>Date</th>
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<tr>
<td>Purpose</td>
<td>To ensure a consistent approach to the management of Calcium channel blocker poisoning.</td>
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<tr>
<td>Scope</td>
<td>Applies to all QAS clinical staff.</td>
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<td>Information security</td>
<td>This document has been security classified using the Queensland Government Information Security Classification Framework (QGISCF) as UNCLASSIFIED and will be managed according to the requirements of the QGISF.</td>
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Calcium channel blockers (CCBs) are commonly prescribed medications used in the treatment of hypertension, angina pectoris and cardiac arrhythmia.[1]

**Examples:**
- Verapamil
- Diltiazem
- Amlodipine
- Nifedipine
- Felodipine
- Lercanidipine
- Nimodipine

In overdose calcium channel blockers can have vascular and/or cardiac effects. This will result in changes in myocardial conduction, contractility and vascular vasodilation.[2-3,4]

Calcium gluconate 10% is the antidote for CCB toxicity.

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**Clinical features**

**Cardiovascular effects**
- bradycardia
- heart block
- hypotension
- cardiogenic shock

**Systemic effects**
- seizures
- coma
- hyperglycaemia
- metabolic acidosis

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**Risk assessment**

CCB toxicity is potentially life-threatening, particularly verapamil and diltiazem which are the more cardioselective CCBs.

**High risk populations:**
- Underlying cardiorespiratory disease
- Older persons
- Co-ingestion with beta blockers or digoxin
Additional information

- The onset of clinical features may be delayed up to 16 hours following ingestion of slow release preparations.

**Note:** Officers are only to perform procedures for which they have received specific training and authorisation by the QAS.

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**CPG: Paramedic Safety**

**CPG: Standard Cares**

**Ongoing imminent risk of harm?**

**Y**

**Consider:**

- Verbal de-escalation
- QPS assistance
- Physical restraint
- EEA

**Manage as per:**

- CPG: Sedation – Acute behavioural disturbance

**N**

**Bradycardia or hypotension?**

**Y**

**Consider:**

- Oxygen
- IV access
- 12-Lead ECG
- Midazolam

**N**

**ECG changes?**

**Y**

**Consider:**

- IV fluid
- Calcium gluconate 10%
- Atropine
- Transcutaneous pacing
- Adrenaline

**N**

**Transport to hospital**

**Pre-notify as appropriate**