Clinical Practice Guidelines:
Toxicology and toxinology/Tricyclic antidepressants

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<thead>
<tr>
<th>Policy code</th>
<th>CPG_TO_TRA_0120</th>
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<tr>
<td>Date</td>
<td>January, 2020</td>
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<td>Purpose</td>
<td>To ensure a consistent approach to the management of tricyclic antidepressants poisoning.</td>
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<td>Scope</td>
<td>Applies to 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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<tr>
<td>Population</td>
<td>Applies to all ages unless stated otherwise.</td>
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<tr>
<td>Source of funding</td>
<td>Internal – 100%</td>
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<tr>
<td>Review date</td>
<td>January, 2023</td>
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All feedback and suggestions are welcome. Please forward to: Clinical.Guidelines@ambulance.qld.gov.au

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Tricyclic antidepressants (TCAs) are potentially lethal in overdose. TCA agents act on multiple receptor sites. Their principal antidepressant action is mediated by serotonin and norepinephrine re-uptake inhibition. Myocardial toxicity is via sodium channel blockade. Other toxicity is mediated by the inhibitory action at the muscarinic, histamine and adrenergic receptors. [1]

Tricyclic antidepressants are most commonly prescribed for depression, however also may be used in the treatment of chronic pain and migraine.

Tricyclic antidepressants include:
- Amitriptyline
- Clomiparamine
- Dothiepin
- Doxepin
- Imipramine
- Nortriptyline

**Clinical features**

**Anticholinergic effects**
- Agitation/delirium
- Dilated pupils
- Dry, warm, flushed skin
- Hyperthermia
- Tachycardia
- Urinary retention

**Neurotoxicity**
- Sedation/Coma
- Seizures

**Cardiotoxicity/ECG changes**
- Hypotension
- Prolonged PR and QRS interval
- Prominent terminal R wave in aVR
- Ventricular tachycardia
Risk assessment

- Ingestions of more than 10 mg/kg in adults and 5 mg/kg in children are potentially toxic. Severe toxicity occurs with ingestions greater than 20 mg/kg.
- In large overdoses there can be a rapid, early deterioration with coma, seizures and cardiac arrhythmia.
- All ingestions need review at a medical facility.

Cardiac arrest, shock or respiratory distress?

Ongoing imminent risk of harm?

Perform 12-Lead ECG

Signs of sodium channel blockade?

Consider:
- Oxygen
- IPPV
- IV access
- IV fluid

Transport to hospital
Pre-notify as appropriate

Manage as per appropriate CPG:
- CPG: Resuscitation – Adult
- CPG: Resuscitation – Paediatric
- CPG: Shock

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

Manage as per:
CPG: Sedation – Acute behavioural disturbance

Administer:
Sodium bicarbonate 8.4%

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