### OTHER NAMES

CLASSIFICATION

Respiratory stimulant

### INDICATIONS FOR IV USE

*HEALTH CANADA EMERGENCY RELEASE: (May 2002)*
- Treatment of neonatal apnoea, including post-extubation and post anaesthesia.

### CONTRAINDICATIONS

- Known hypersensitivity to caffeine, or other xanthines, e.g. theophylline, aminophylline.

### CAUTIONS

- Pre-existing seizure disorder: may lower the seizure threshold.
- Congenital heart disease, e.g. patent ductus arteriosus, atrial septal defect, due to inotropic effect.
- Renal or hepatic impairment: dose reduction may be required. Monitor serum concentrations.
- Metabolic disorders, e.g. hyperglycaemia, hypercalcemia, electrolyte imbalance, due to effects on metabolism and endocrine system.

### DRUG INTERACTIONS:

- Other CNS stimulants: additive effects. Close observation is recommended.

### ADMINISTRATION

<table>
<thead>
<tr>
<th>MODE</th>
<th>DIRECT INTO IV TUBING</th>
<th>INTERMITTENT INFUSION</th>
<th>CONTINUOUS INFUSION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>WHO MAY GIVE</td>
<td>Registered nurses with specialized skills – see required monitoring</td>
<td>Registered nurses with specialized skills – see required monitoring</td>
<td></td>
</tr>
<tr>
<td>ADULT</td>
<td>Not applicable</td>
<td>Not applicable</td>
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<tr>
<td>PAEDIATRIC</td>
<td>Undiluted over 3 – 5 minutes.</td>
<td>See syringe pump infusion chart</td>
<td></td>
</tr>
<tr>
<td>NEONATE</td>
<td>Undiluted over 3 – 5 minutes.</td>
<td>Undiluted, over 30 minutes.</td>
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</tbody>
</table>

### REQUIREMENTS

- None

### MONITORING

- Baseline heart rate, continuously (via ECG) during administration and until stable.

### RECOMMENDED

- Assess for agitation
- Monitor former preterm neonates for 12 hours postoperatively.

### RECONSTITUTION

- None required. Available as caffeine citrate – 5 mL vials. Each mL contains 10 mg caffeine base, which is equivalent to 20 mg caffeine citrate.
COMPATIBILITY/STABILITY
- Compatible with D5W, D10W, NS, dextrose-saline combinations, dextrose/amino acid solutions and lipid emulsions.
- For additional drug-drug compatibility contact Drug Information.

ADVERSE EFFECTS Few adverse effects have been reported at therapeutic doses.2
CNS
- Transient jitteriness has been observed with serum levels between 255 and 515 mcmol/L.
- Seizures have occurred at serum levels greater than 515 mcmol/L.
- Sleep disturbances.
GASTROINTESTINAL
- Gastrointestinal irritation may occur but usually only after oral administration and generally with serum levels greater than 255 mcmol/L.
CARDIOVASCULAR
- Tachycardia (220 – 260 beats/minute) may occur, especially when serum level exceeds 515 mcmol/L
RENAL
- Mild glycosuria has occurred with serum level exceeding 515 mcmol/L
MISCELLANEOUS
- No apparent harmful effects on growth and neurological development in neonates receiving caffeine.6

DOSE
ADULT
- Not applicable.
ELDERLY
- Not applicable
PAEDIATRIC Note: Doses are expressed as mg of caffeine base, not of caffeine citrate.
Prophylaxis in post-anaesthetic apnoea:
- 10 mg/kg as a single dose (infants less than 44 weeks postconceptional age) immediately following induction of anesthesia.2
NEONATE Note: Doses are expressed as mg of caffeine base, not of caffeine citrate.
Apnoea of prematurity and preterm infants on mechanical ventilation:
- Loading dose: 10 – 25 mg/kg of caffeine base. Give over 30 minutes or PO.1
- Maintenance dose: 2.5 – 5 mg/kg once daily, 24 hours after loading dose.1,7
- Infants greater than 38 weeks postconceptional age may require increased dosage and reduced dosage intervals.2
Prophylaxis in post-anaesthetic apnoea:
- 10 mg/kg as a single dose (neonates less than 44 weeks postconceptional age) immediately following induction of anesthesia.2

RENAL IMPAIRMENT ADJUSTMENTS
- Caution, monitor serum level and adjust dose accordingly.
HEPATIC IMPAIRMENT ADJUSTMENTS
- Caution, monitor serum level and adjust dose accordingly.
HEMO/PERITONEAL DIALYSIS
- No information available at this time.

THERAPEUTIC DRUG MONITORING
- Serum concentrations may be determined if dose is at maximum and increase is desired, or for signs/symptoms of toxicity, e.g. HR greater than 180. Routine monitoring is no longer recommended.
CAFFEINE CITRATE - REFERENCES


