NEONATAL Medication Monograph

# CAFFEINE

This document should be read in conjunction with this **DISCLAIMER**

**Unrestricted:** Any prescriber may initiate treatment

⚠ **Check the dose carefully**
⚠ **Caffeine citrate 2mg is equivalent to caffeine base 1mg**

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| **Presentation** | **These strengths are expressed as caffeine base**<br>**Vial:** 50mg/5mL = 10mg/mL<br>**Vial:** Cafnea® 20mg/2mL =10mg/mL available at PCH<br>**Vial:** 30mg/6mL = 5mg/mL available at KEMH **(for maintenance doses)**<br>**Oral Solution:** 10mg/mL |
| **Description** | CNS Stimulant |
| **Indications** | • Neonatal apnoea<br>• Prevention of postoperative apnoea<br>• Aid extubation from mechanical ventilation |
| **Precautions** | Use with caution in infants with cardiovascular disease; caffeine may increase heart rate, left ventricular output, and stroke volume |
| **Dosage** | **All Indications**<br>All doses are expressed as ***caffeine base***<br><br>**IV/PO:**<br>**Loading dose:** 20mg/kg once only<br><br>**Maintenance dose:** 5 to 7.5 mg/kg once daily (Max 10mg/kg/day)<br><br>Commence maintenance dose 24 hours after loading dose. |
| **Adverse Reactions** | **Common:** gastric irritation, agitation, nausea vomiting |
| | **Serious:** tachycardia, diuresis, overdose arrhythmias, seizures |
| **Interactions** | Do not give with aminophylline or theophylline |

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| **Compatible Fluids** | Glucose 5%, Water for Injections |
| **Preparation** | **IV:**<br>**Loading dose:** Use **10mg/mL** product undiluted<br><br>**Maintenance Dose:** Use **5mg/mL** product undiluted (KEMH)<br>***If unavailable, use the following instruction to prepare a 5mg/mL caffeine base solution***<br>***NB: dilution instructions are Brand specific***<br><br>***If using the Cafnea® brand, prepare the following:***<br>Withdraw 20mg (2mL) and make to total volume of 4mL with a compatible fluid<br>Concentration is 20mg/4mL = 5mg/mL *caffeine base* |
| **Administration** | **IV:**<br>**Loading dose:** Infuse over 30 minutes<br>**Maintenance dose:** Infuse over 10 minutes<br><br>**Oral:**<br>Give dose with feeds to reduce gastric irritation<br>Consider delaying oral therapy until approximately 50% of nutrition is via the enteral route to decrease risk of gastric irritation. |
| **Monitoring** | Heart rate, number and severity of apnoea episodes and assess for agitation.<br>Consider withholding if HR > 180 bpm<br>Cardiorespiratory monitoring should continue for 5-7 days after cessation of caffeine for treatment of apnoea.<br>Routine monitoring of levels is not required, check levels if suspected toxicity, or to confirm levels are within the therapeutic range.<br>**Sampling of levels**<br>Level to be taken around 12 hours since the last dose.<br><br>**Caffeine levels**<br>Therapeutic range: 5 – 30mg/L |
| **Storage** | Store at room temperature, below 25°C |

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| **Notes** | **Caffeine citrate 2mg is equivalent to caffeine base 1mg**<br>All doses must be expressed as caffeine base |
| **References** | Takemoto CK, Hodding JH, Kraus DM. Pediatric & neonatal dosage handbook with international trade names index : a universal resource for clinicians treating pediatric and neonatal patients. 24th ed. Hudson (Ohio): Lexicomp; 2019<br>Truven Health Analytics. Caffeine Citrate. In: NeoFax [Internet]. Greenwood Village (CO): Truven Health Analytics; 2019 [cited 2020 Jan 21]. Available from: https://neofax.micromedexsolutions.com/<br>British National Formulary. BNF for Children. 2018-19 ed. London, UK: BMJ Group and Pharmaceutical Press; 2018.<br>Society of Hospital Pharmacists of Australia. Caffeine. In: Australian Injectable Drugs Handbook [Internet]. [St Leonards, New South Wales]: Health Communication Network; 2019 [cited 2020 Jan 21]. Available from: http://aidh.hcn.com.au |



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| Keywords: | Caffeine citrate, caffeine, apnoea, Cafnea | | |
| Publishing: | ☒ Intranet ☒Internet | | |
| Document owner: | Head of Department - Neonatology | | |
| Author / Reviewer: | KEMH & PCH Pharmacy / Neonatology Directorate | | |
| Date first issued: | March 2001 | Version: | 3.2 |
| Last reviewed: | June 2020 | Next review date: | June 2023 |
| Endorsed by: | Neonatal Directorate Management Group | Date: | June 2020 |
| Standards Applicable: | NSQHS Standards: 1 Governance, 3 Infection Control, 4 Medication Safety, 8 Acute Deterioration | | |

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