

**DOXAPRAM****This drug must be guardrailed**

<b>Trade Name</b>	Doxapram Hydrochloride Solution for Injection (Anpharm) or Dopram® Injektionslösung (Carinopharm) (Section 29 – unregistered drug in New Zealand)																		
<b>Class</b>	Central nervous system and respiratory stimulant																		
<b>Mechanism of Action</b>	Increases minute volume and respiratory rate via stimulation of all levels of the cerebrospinal axis.																		
<b>Indications</b>	Apnoeas of prematurity unresponsive to caffeine																		
<b>Contraindications</b>	High doses may cause convulsions																		
<b>Supplied As</b>	<b>IV:</b> 100mg/5mL ampoule <b>Oral:</b> 100mg/5mL IV preparation is used undiluted (request repack from pharmacy to give 7 day self life)																		
<b>Dilution</b>	<p><b>Standard Dilution: For Loading Dose and Standard Continuous infusion</b></p> <table border="1"> <thead> <tr> <th>Drug</th> <th>0.9Saline or 5% Dextrose</th> <th>Final Volume</th> <th>Concentration</th> </tr> </thead> <tbody> <tr> <td>1mL (20mg)</td> <td>19mL</td> <td>20mL</td> <td>1mg/mL</td> </tr> </tbody> </table> <p>Note that the loading dose may followed by either oral or iv maintenance and as such is always charted separately on the medication chart. Use 1mg/mL as the concentration for the loading dose</p> <p><b>Double Strength Dilution: For a Continuous infusion if fluid restricted</b></p> <table border="1"> <thead> <tr> <th>Drug</th> <th>0.9Saline or 5% Dextrose</th> <th>Final Volume</th> <th>Concentration</th> </tr> </thead> <tbody> <tr> <td>2mL (40mg)</td> <td>18mL</td> <td>20mL</td> <td>2mg/mL</td> </tr> </tbody> </table>			Drug	0.9Saline or 5% Dextrose	Final Volume	Concentration	1mL (20mg)	19mL	20mL	1mg/mL	Drug	0.9Saline or 5% Dextrose	Final Volume	Concentration	2mL (40mg)	18mL	20mL	2mg/mL
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<b>Dosage</b>	<b>IV loading:</b> 2.5mg/kg over 30 minutes Dilute as above into the 20ml volume and infuse the volume required on the Alaris pump using guardrails <b>IV Infusion:</b> 0.3mg/kg/hr up to a max of 1.5mg/kg/hr <b>Oral dose:</b> 6mg/kg/dose after iv load Doses up to 12mg/kg/dose 6 hourly have been used. <sup>7</sup>																		
<b>Guardrails</b>	Concentration: Min – 1mg/mL      Max – 2mg/mL Soft Alert Min: 0.1mg/kg/hr    Hard Alert Max: 5mg/kg/hr Soft Alert Max: 1.5mg/kg/hr    Default Setting: 0.3mg/kg/hr																		

<b>Interval</b>	<b>IV:</b> Continuous infusion (preferred for stabilisation) <b>Oral:</b> 6 hourly
<b>Administration</b>	<b>IV:</b> Continuous infusion
<b>Compatible with</b>	0.9% sodium chloride, 5% and 10% dextrose <b>Y-site:</b> adrenaline, caffeine citrate, calcium chloride, calcium gluconate, cefazolin, ceftazidime, dopamine, erythromycin, heparin, insulin, metronidazole, phenobarbital, potassium chloride, ranitidine, salbutamol, vancomycin
<b>Incompatible With</b>	Alkaline solutions - barbiturates, benzylpenicillin, clindamycin, digoxin, dobutamine, furosemide, sodium bicarbonate. No information available re compatibility with TPN or lipid –use a separate line.
<b>Monitoring</b>	Monitor blood pressure
<b>Stability</b>	Unopened ampoules - see manufacturers expiry. Discard unused portion of the ampoule immediately after use Single vial use Continuous infusions must be changed after 24 hours
<b>Storage</b>	Unopened ampoules should be stored at room temperature. If an ampoule is used in the Neonatal unit for oral administration draw up the entire contents into a syringe and discard after 24hrs. Request a 7 day supply from pharmacy – simplifies administration and reduces cost of using the ampoules.
<b>Adverse Reactions</b>	Side effects are dose related and can include tachycardia, <u>hypertension</u> , hyperpyrexia and laryngospasm. Oral doses may cause gastrointestinal disturbances. High doses can cause convulsions.
<b>Metabolism</b>	Extensively metabolised in the liver, very little drug in urine. Half life in neonates = 6-12 hours.
<b>References</b>	<ol style="list-style-type: none"> <li>1. Acta Paediatrica 1998(87);1180-1184</li> <li>2. Am J Perinatology 1991 8:2; 110-3</li> <li>3. NZHPA Notes on Injectable Drugs 5<sup>th</sup> edition</li> <li>4. Trissell Handbook on Injectable drugs 11<sup>th</sup> edition</li> <li>5. Neonatal Formulary Hammersmith Hospital NHS Trust 7<sup>th</sup> edition 2000</li> <li>6. Taketomo et al Pediatric Dosage Handbook 16<sup>th</sup> edition 2010</li> <li>7. Romeo MG et al Oral administration of doxapram in preterm neonates with aminophylline-resistant idiopathic apnea crisis. Pediatr Med Chir. 1995 Mar-Apr,17(2):123-6.</li> <li>8. www.micromedexsolutions.com</li> </ol>
<b>Updated By</b>	<p>Dr Di Gray May 2000, Feb 2002, A Lynn, B Robertshawe August 2009, August 2011 A Lynn, B Robertshawe June 2012 (re-order profile) A Lynn May 2013 (drop soft min g'rail to limit alarms) N Austin, M Wallenstein, B Robertshawe May 2019 (oral dosing info) A Lynn, M Wallenstein, B Robertshawe December 2020 (Compatibility review) A Lynn, B Robertshawe (review dilution instructions after a medication event)</p>