



NEONATAL

MILRINONE

This document should be read in conjunction with this [DISCLAIMER](#)




Highly Restricted: Requires Neonatologist or relevant specialist approval before commencing

⚠ HIGH RISK Medication

Presentation	Ampoule: 10mg/10mL = 1mg/mL
Classification	Selective phosphodiesterase inhibitor which has positive inotropic and vasodilatory activity
Indication	<ul style="list-style-type: none"> • Refractory pulmonary hypertension • Low cardiac output • Septic shock <p>There is some evidence for its use in preventing low cardiac output in patients undergoing cardiac surgery.</p> <p>It is for short term treatment only and should generally not be used for longer than 72 hours</p>
Contraindications	<p>Avoid use in patients with severe:</p> <ul style="list-style-type: none"> • obstructive aortic disease • pulmonary valvular disease • hypovolaemia.
Precautions	<ul style="list-style-type: none"> • Use with caution in patients with a history of ventricular arrhythmias, atrial fibrillation or atrial flutter as may aggravate, use continuous ECG monitoring • Use with caution in patients with impaired renal function • Use with caution in conjunction with other vasodilating agents. • Correct hypokalaemia before initiating therapy

Dose	<p>Note:</p> <ul style="list-style-type: none"> • Any fluid imbalance should be corrected before commencing milrinone. • In both regimens below, consider reducing or omitting the loading dose if the patient is at risk of hypotension. <table border="1"> <thead> <tr> <th>Corrected Gestational Age</th> <th>Loading Dose</th> <th>Maintenance Dose</th> </tr> </thead> <tbody> <tr> <td>< 30weeks</td> <td>0.75 microgram/kg/minute for 3 hours</td> <td>0.2microgram/kg/minute</td> </tr> <tr> <td>≥ 30weeks</td> <td>0.4 to 1.25 microgram/kg/minute for 60 minutes</td> <td>0.25 to 0.75 microgram/kg/minute</td> </tr> </tbody> </table>	Corrected Gestational Age	Loading Dose	Maintenance Dose	< 30weeks	0.75 microgram/kg/minute for 3 hours	0.2microgram/kg/minute	≥ 30weeks	0.4 to 1.25 microgram/kg/minute for 60 minutes	0.25 to 0.75 microgram/kg/minute
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Monitoring	<p>Continuous ECG monitoring to promptly detect and manage ventricular arrhythmias.</p> <p>Blood Pressure (hypotension may occur)., Heart Rate</p> <p>Infusion site reactions.</p> <p>Fluid and electrolyte status (especially potassium and magnesium)</p> <p>Renal function.</p>									
Dose Adjustment	<p>Milrinone is primarily excreted unchanged by the kidneys, reduction in the infusion rate may be necessary in patients with renal impairment.</p>									
Guidelines & Resources	<p>Cardiac: Routine Post-Operative Care</p>									
Compatible Fluids	<p>Glucose 5%. Sodium Chloride 0.9%</p>									
Preparation	<p>IV: Available from CIVAS (KEMH & PCH)</p> <p>Withdraw 1.5mg of milrinone per kg of baby's weight (1.5mL/kg) and dilute to 50mL with appropriate infusion fluid.</p> <p>Concentration:</p> <p>1mL/hour= 0.5microgram/kg/minute</p>									

Administration	<u>IV Infusion:</u> See Dose section for recommended infusion times
Adverse Reactions	Common: Hypotension Serious : Supraventricular and ventricular arrhythmias, Hypokalaemia, thrombocytopenia
Storage	Store at room temperature, below 25°C
Interactions	Incompatible with furosemide (frusemide).
References	<p>Truven Health Analytics. Milrinone. In: NeoFax [Internet]. Greenwood Village (CO): Truven Health Analytics; 2019 [cited 2019 Aug 4]. Available from: https://neofax.micromedexsolutions.com/</p> <p>Society of Hospital Pharmacists of Australia. Digoxin. In: Australian Injectable Drugs Handbook [Internet]. [St Leonards, New South Wales]: Health Communication Network; 2017 [cited 2019 Aug 4]. Available from: http://aidh.hcn.com.au</p> <p>Clinical Pharmacology. Tampa, FL: Gold Standard, Inc. 2015 [cited Apr 2] Available from: http://www.clinicalpharmacology-ip.com/help/faq/citing_clinical_pharmacology.htm</p> <p>Royal Pharmaceutical Society of Great Britain, Royal College of Paediatrics and Child Health; British Medical Association. Neonatal and Paediatric Pharmacists Group. BNF for children 2018-19.</p> <p>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; 2401. 2</p> <p>Milrinone: Paediatric Drug Information [Internet] UpToDate [Online Database] 2016 [cited 2019 Jun 08], Available from: https://www.uptodate-com.pklibresources.health.wa.gov.au/contents/milrinone-pediatruc-drug-information</p>

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