

MILRINONE**This drug must be guardrailed**

Trade Name	Primacor® (Sanofi Aventis)		
Class	Selective phosphodiesterase inhibitor		
Mechanism of action	Milrinone inhibits phosphodiesterase III (PDE III) resulting in increased levels of cyclic AMP which promotes increased delivery of calcium to myocardial muscle (ie inotropic effects) and relaxation vascular muscle (ie vasodilation)		
Indications	<p>Persistent Pulmonary Hypertension not adequately controlled by other interventions eg: inhaled nitric oxide or sildenafil</p> <p>Post PDA ligation as an inotrope to decrease afterload</p> <p>Preterm baby requiring inotropes with raised pulmonary pressures</p>		
Contraindications	<p>Known or family history of hypersensitivity to milrinone</p> <p>Severe obstructive aortic or pulmonary valvular disease or hypertrophic subaortic stenosis.</p> <p>Hyperkalaemia >6.5mmol/L</p> <p>Use with caution in patients with renal impairment</p>		
Supplied as	1mg/mL solution for injection		
Dilution	Drug	5% Dextrose	Final Volume
	5mg	45mL	50mL
	Concentration		
	100microgram/mL		
	If the patient is fluid restricted can be concentrated to a maximum of 200 microgram/mL:		
Drug	5% Dextrose	Final Volume	Concentration
10mg	40mL	50mL	200microgram/mL
Print off a separate milrinone infusion sheet for dosing and charting			
Dosage *Must chart guardrail and use Alaris pump*	<p>Loading dose: currently we are not using a loading dose due to the risks of profound hypotension</p> <p>Maintenance dose: 0.25 – 1 microgram/kg/min</p> <p>Infusion rate: 0.25 microgram/kg/min = 0.15mL/kg/hr (if a 100 microgram/mL solution is used)</p>		
Guardrails	<p>Conc: Min – 100 microgram/mL Max – 200 microgram/mL</p> <p>Soft Min: 0.1 microgram/kg/min Hard Max: 1 microgram/kg/min</p> <p>Soft Max: 0.75 microgram/kg/min Default: 0.25 microgram/kg/min</p>		
Interval	Continuous infusion		

Administration	Central IV infusion
Compatible with	<p>Solution: Sodium Chloride 0.45%, sodium chloride 0.9%, glucose 5% and lactated ringers can be used as diluents. Glucose 10% and glucose saline solution have not been tested</p> <p>Terminal Y-site: Aciclovir, adrenaline, amikacin, alprostadil, aminophylline, amiodarone, atropine, calcium chloride, calcium gluconate, cefazolin, cefepime, cefotaxime, ceftazidime, cimetidine, clindamycin, dexamethasone, dexmedetomidine, digoxin, dobutamine, dopamine, erythromycin, fentanyl, fluconazole, gentamicin, glyceryl trinitrate, heparin, insulin, ketamine, labetalol, linezolid, meropenem, methylprednisolone, metronidazole, midazolam, magnesium sulphate, morphine, noradrenaline, pancuronium, phenobarbital, piperacillin/tazobactam, potassium chloride, potassium phosphate, propranolol, ranitidine, sildenafil, sodium bicarbonate, sodium phosphate, ticarcillin, tobramycin, TPN, vancomycin, vasopressin, vecuronium, voriconazole, zidovudine.</p> <p>Compatibility with lipid has not been tested therefore we cannot recommend concurrent infusion at this time.</p>
Incompatible with	Bumetanide, diazepam, furosemide, imipenem/cilistatin, lidocaine, phenytoin
Interactions	No clinically significant drug interactions have been reported
Monitoring	Blood pressure, heart rate and rhythm, platelet count, renal function and fluid and electrolyte balance.
Stability	Single use vial Discard vial immediately after use. Continuous infusions need to be changed after 24 hours
Storage	Store unused ampoule at less than 30° C. Do not freeze
Adverse Reactions	Hypotension, ventricular and/or atrial tachyarrhythmia, rash, hypokalaemia, thrombocytopenia, abnormal liver function tests.
Metabolism	Milrinone is predominantly (83%) cleared via the kidneys. Half life in infants varies ELBW ~10hrs 3 hours.
References	<ol style="list-style-type: none"> 1. Neofax in www.micromedexsolutions.com 2. BNF for Children 2011 3. Taketomo Paediatric Dosage Handbook 6th Edition 2009 4. McNamara PJ et al Milrinone improves oxygenation in neonates with severe persistent pulmonary hypertension of the newborn. J Crit Care (2006) 5. RPA Newborn Care Drug Protocols 6. Trissels IV Drug Compatibilities in www.micromedexsolutions.com 7. Sem Neonatal and Fetal. June 2022. Cookson et al

Updated by	A Lynn and B Robertshawe	Dec 2010, March 2011, May 2011
	A Lynn, B Robertshawe	Nov 2012 (re-order profile, discard vial)
	A Lynn, B Robertshawe	Oct 2021 (routine review)
	A Lynn, N Austin	June 2022 (increase max dose to 1mcg/kg/min)