

Nitroprusside

Drug Type	Vasodilator
Indication	Used for systemic hypertension; Cardiogenic shock [peripheral vasoconstriction and low cardiac output]; congestive cardiac failure; Respiratory distress with persistent hypertension of the newborn.
Action	Nitroprusside is a potent direct acting vasodilator that affects both the arterial and venous vascular beds. Onset of action is 1-2 minutes; titrate dose to control blood pressure. It has a synergistic effect with Dopamine.
Presentation	50 mg vial.
Range	0.5 - 8 microg/Kg/min
Dilution	Dissolve the powder with 3ml of 5% Dextrose to make a 50mg/3ml solution. Dilute 0.18ml [3mg]/kg from the reconstituted vial with 5% dextrose to make a 3mg/kg/50 ml solution. 1ml/hr = 1mcg/kg/min
Administration	Syringe pump infusion using opaque infusion tubing. Cover solution with "alfioil" to protect from light. Discard after 24 hours. Measure thiocyanate levels if use is prolonged [>3 days]. Symptoms of toxicity [seizures, muscle spasms and vomiting] appear at 5-10mg/dL. Treatment should be discontinued if levels are >12 mg./dL. Toxicity is treated with with 20% sodium thiosulfate [10mg/kg/min] for 15 minutes or Vitamin B12 [0.1mg/kg].
Compatible	Should be given alone as compatibilities unknown.
Incompatible	Contraindications: Known hypersensitivity; Coarctation of the aorta; Arterio venous shunt; Compensatory hypertension; Cautious use with with renal impairment; Hyponatraemia
Side Effects	May cause: tachycardia, hypotension, cyanide toxicity, metabolic acidosis, central nervous system [restlessness, agitation, muscle twitching], vomiting, skin rash, drug intolerance [metabolic acidosis, increased sodium lactate and increased thiocyanate levels].

Contraindications

Other Considerations Reconstitute with 5% dextrose only Continuous blood pressure and cardiorespiratory monitoring Monitor for above complications Monitor ABG's for metabolic acidosis Monitor Hb [Nitroprusside binds to Hb]. Monitor serum plasma levels as above Record and measure input and output.

- References**
- Barr P, Berry A. (1994). Drug Therapy in Newborn Infants - Prescribing Information. Sydney: Royal Alexandra Hospital for Children.
- Page Pawlak R, Tabor Herfert LA. [1990]. Drug Administration in the NICU. [2nd ed]. Petaluma: Neonatal Network.
- Bhatt DR, Furman GI, Reber DJ, Wirtschafter DD, and Thomas JC. (1991) Neonatal Drug Formulary. (2nd ed). Los Angeles, California: Meade Johnson Pharmaceuticals NDF Publishing.
- Long WA. [1990]. Fetal and Neonatal Cardiology. Philadelphia: WB Saunders Co.