

Digoxin

Band Name	Lanoxin
Drug Type	Vasopressor
Indication	Congestive cardiac failure [CCF] Diminished myocardial contractility Supraventricular tachycardia Congenital atrial flutter and fibrillation
Action	Increases the force of the myocardial contraction resulting in improved cardiac output [inotropic action] Decreases A-V conduction in the heart resulting in a decreased heart rate.
Presentation	50microg/2ml ampoule for intravenous use 50microg/ml elixir for oral use.
Storage	Store below 25 ⁰ C
Loading Dose	Term: 30 microg/Kg Preterm: 20 microg/Kg
Maintenance Dose	4 microg/Kg/dose
Interval (hr)	12
Therapeutic Range	1-2 ng/ml
Dilution	Dilute 1ml from the 50 microg/2ml ampoule with normal saline or water for injection to make a 25 microg/5ml solution. ie 1ml = 5microg
Administration	IG tube or orally with feeds, or by intravenous infusion if not on feeds. Loading: Give one-half of the loading dose statim, orally or IV, and the other one half of the dose in three divided doses at 6-8 hourly intervals.
Compatible	When given IV, Digoxin may be added to 5% dextrose and normal saline. Additive compatibilities: calcium gluconate, heparin, potassium chloride.
Incompatible	Additive incompatibilities: dopamine and dobutamine

- Side Effects
- * Cardiac arrhythmias - PVC's, PAT, sinoatrial block, sinus arrhythmias, bigeminy, VT.
 - * GIT upsets - feed intolerance, weight loss, vomiting
 - * Hypokalaemia - associated with diuretic therapy may increase the effects and toxicity of digoxin.
 - * Bradycardia - due to depression of atrioventricular conduction
 - * CHF - worsening of this condition associated with overdose
 - * Caution - In pre existing hypokalaemia may lead to adverse reactions
 - * In premature infants with immature renal and hepatic dysfunction
 - * Monitor blood serum potassium and other electrolytes.
 - * Plasma Levels:
 - * The therapeutic plasma concentration is 1-2 ng/ml. Digoxin toxicity is rare when the plasma level is 3.5 ng/ml.
 - * Cross reactivity may result in spuriously high levels in newborn infants.

Contraindications

- Other Considerations
- * Medical staff only to give digoxin by the intravenous route. * During digitalisation infant must be cardiorespiratory monitor with ECG display.
 - * Intravenous digoxin must be administered by medical staff and patient cardiac rate and rhythm monitored
 - * Take apical pulse for one minute prior to administration noting rate and rhythm.
 - * Notify medical officer for further orders if rate < 90-110-/minute or there is a change in rhythm.
 - * Monitor for arrhythmias, oedema and tachypnoea - notify registrar
 - * Monitor fluid balance
 - * Daily weigh until stabilised
 - * Persistent vomiting is usually the most common sign of digitalis toxicity in infants.
 - * Parent education if infant to be discharged on medication

- References
- Barr P, Berry A. [1994]. Drug Therapy in Newborn Infants. Prescribing Information. Sydney: The 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.
- Prescription Medicine [1991]. Lanoxin - Composition Digoxin. Australia: Welcome.
- Young TE, Mangum B [2000]. Neofax: A manual of drugs used in neonatal care. Acorn Publishing, Inc. Raleigh, NC 27619