

Drug Name: Nitroglycerin Infusion
Trade Name: NitroStat, Nitrol, Nitrolingual,
Nitro-Bid Ointment, Tridil, Nitro, NTG
REVISED: November 1, 2018

Class:

- Antianginal Agent
- Nitrate
- Vasodilator

Mechanism of Action:

- Nitrates relax peripheral venous vessels, causing a pooling of venous blood and decreased venous return to the heart, which decreases preload.
- Nitrates reduce both arterial impedance and venous filling pressures, resulting in a reduction of the left ventricular systolic wall tension, which decreases afterload. Decreases preload.
- Results in the reduction of myocardial workload and myocardial oxygen demand.
- Aids in the reversal of pulmonary edema.
- It also causes some vasodilatation of coronary arteries (limited by atherosclerosis) increasing perfusion of ischemic myocardium.

Indications:

- Chest pain associated with angina
- Chest pain associated with AMI
- Acute pulmonary edema
- Symptomatic Hypertension (Hypertensive Crisis)

Contraindications:

- Head Injury, Increased ICP
- Cerebral hemorrhage
- Hypotension
- Hypovolemia
- Recent Viagra (sildenafil) use (**OR similar drugs**)
- Hypersensitivity to nitrate
- Constrictive Pericarditis, Pericardial Effusion

Precautions:

- Nitro deteriorates rapidly after bottle is opened, bottle should be opened and dated, and also protected from light.
- Use with caution in closed-angle glaucoma, may increase intraocular pressure.
- Elderly may be more susceptible to the effect of nitrates.
- Hepatic disease (*metabolism may be impaired and lead to increased risk of methemoglobinemia*)
- Postural hypotension
- Pregnancy (C)

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REFERENCE ONLY

This document is for **reference only**. Please refer to the physician's orders for specific indications, dosages, and applications

IFT Drug: NITROGLYCERIN

Dosage:

Doses are highly variable and based on institutional guidelines and patient laboratory values. Double check orders with transferring physician Infusion for IFT or prolonged transports:

Nitro drip:

- **IV/IO: 5-10 μ g/min,**
 - Titrated for effect 5-10 μ g/min every 5 minutes up to a max of 200 μ g/min (**Hold for systolic <100, titrate up and down in 5 mcg increments**)

Onset:

- IV—Immediate

Duration:

- IV—several minutes, dose dependent.

Side Effects:

- Headache due to vasodilation
- Hypotension, Dizziness
- N/V
- Xerostomia (Dry Mouth)
- Reflex tachycardia
- Skin rash, Flushing
- Anxiety
- Agitation
- Methemoglobinemia (*rare, usually with high doses of the IV formulation, but can be seen with normal therapeutic doses*)

Interactions:

Alcohol (*can theoretically produce additive hypotension*)

Aspirin results in increased serum nitrate concentrations (*may cause increased hypotension, limited data*)

Calcium channel blockers & beta-blockers—additive interaction can result in symptomatic orthostatic hypotension.

Sympathomimetics may antagonize the effects of nitroglycerin.

May compromise the efficacy of alteplase, TPA when administered concomitantly.

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PEARLS:

- **Nitroglycerine infusions should be run on a pump.**
- **Confirm compatibility with other infusions/interventions.**
- Physicians may order or have administered NYG IV Boluses prior to arrival of EMS.
- Establish desired vital sign parameters from transferring hospital prior to departure.
- Monitor vitals frequently. Set up NIBP for automatic assessment every 5 minutes.
- Discontinue other NTG containing interventions , such as NTG paste, while infusion is active.
- The primary concern with nitroglycerine use is iatrogenic hypotension relative to the myocardial demand, which may increase mortality and morbidity.
- Significant adsorption (80% of the nitroglycerin in solution) may occur with standard infusion sets made of PVC plastic. Use glass bottles only and special tubing provided by the manufacturer. Some pump tubing is OK for this use
 - Standard tubing and infusion bags are acceptable for short transports.
- Wear gloves when handling nitroglycerine, and avoid getting sprayed in the mouth by the NTG containing solutions. If you get IV Tridil on your skin, sit down quickly! If you get IV Tridill in your mouth, caffeinated beverages have been rumored to minimize the effects if consumed quickly (anecdotal reports)
- Orthostatic hypotension, xerostomia (dry mouth), & headache are probably the most common side effects associated with nitroglycerin administration, warn your patient.

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