



## 27. NITROGLYCERIN

### a) Pharmacology

- (1) Vasodilator-effect on veins more than arteries
- (2) Decreases right heart return (preload) by venous pooling, thereby decreasing myocardial workload and oxygen consumption

### b) Pharmacokinetics

- (1) Absorbed through oral mucosa
- (2) Antianginal and vasodilation effects within 1–2 minutes after administration. Half-life is 1–4 minutes.
- (3) Duration of action is less than 5 minutes.

### c) Indications

- (1) For treatment of angina
- (2) Congestive heart failure, acute pulmonary edema

### d) Contraindications

- (1) Known hypersensitivity
- (2) Pediatric patient under the age of 13
- (3) Any patient having taken medication for Pulmonary Artery Hypertension (e.g., Adcirca™ or Revatio™) or erectile dysfunction (e.g., Viagra™, Levitra™, or Cialis™) within the past 48 hours. Medical consultation is required to override this contraindication.
- (4) Asymptomatic hypertension
- (5) Blood pressure below 90 mmHg systolic
- (6) Heart rate less than 60


### e) Adverse Effects

Headache, hypotension, nausea, vomiting, dizziness, and decreased level of consciousness


### f) Precautions

May cause hypotension

### g) Dosage

- (1) Adult: Chest pain
  - (a) If patient has a prescription or previous history of nitroglycerin use, administer nitroglycerin: 0.4 mg SL (may repeat dose 2 times at 3–5 minute intervals)  
May be repeated if symptoms persist, BP is greater than 90 mmHg, and pulse is greater than 60 bpm, to a maximum dose of 1.2 mg
  - (b) If patient does **not** have a prescription or previous history of nitroglycerin use, establish IV prior to the administration of nitroglycerin, then administer nitroglycerin as above.
  - (c)  Additional doses may be administered with medical consultation.



- (2) Adult: Pulmonary Edema/Congestive Heart Failure
  - (a) Low dose - Administer 0.4 mg SL at 3–5 minute intervals to a maximum dose of 1.2 mg.
  - (b) High dose - (until CPAP is applied or if CPAP is not tolerated)
    - (i) Administer 1 dose of 0.4 mg SL and apply 1 inch of NTG paste.
    - (ii) Administer 1 dose of 0.8 mg SL.
    - (iii) Continue 0.8 mg NTG dosing to achieve a 20% reduction in systolic blood pressure.
- (3)  Pediatric: Requires medical consultation from Pediatric Base Station.