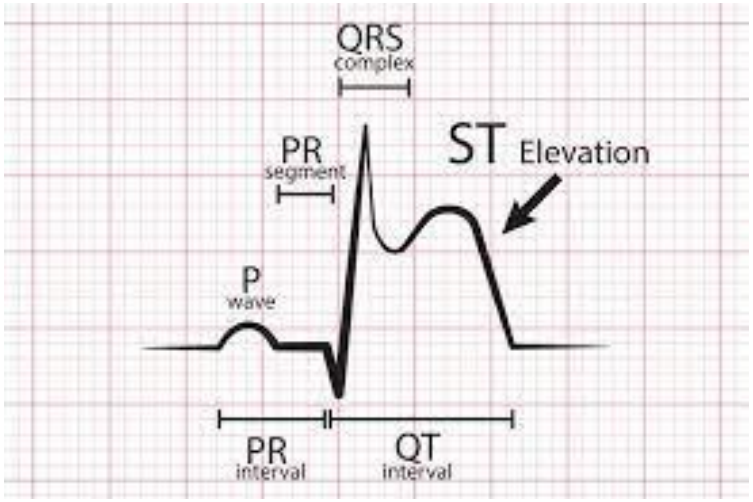
ACLS MEDICATIONS

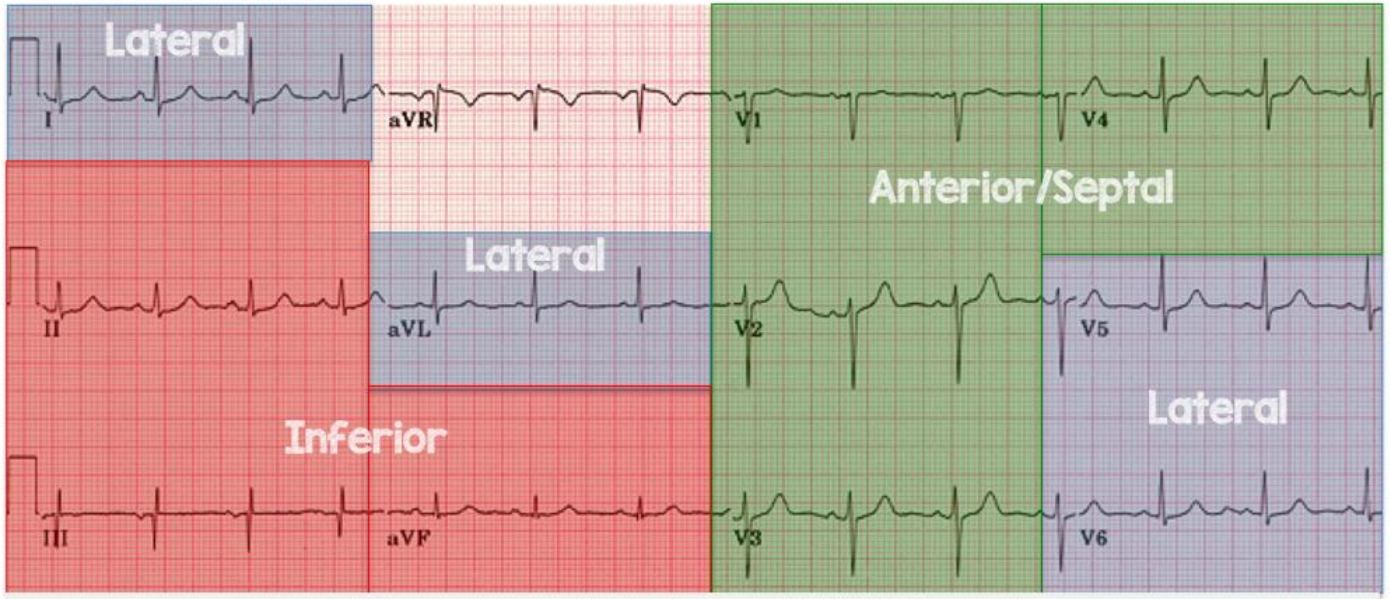
REGION IX

Critical Care Cardiac Medications

Brad Wasiele FF/PM, LI
Spring 2022

JUST REVIEW… REMEMBER TREAT THE PATIENT "NOT THE MONITOR !!!!!





Coronary Anatomy & ECG Leads

Lateral Leads	I, aVL, V5 - V6	LCx or Diagonal of LAD
Inferior Leads	II, III, aVF	RCA and/or LCx
Anterior/Septal Leads	V1 - V4	LAD

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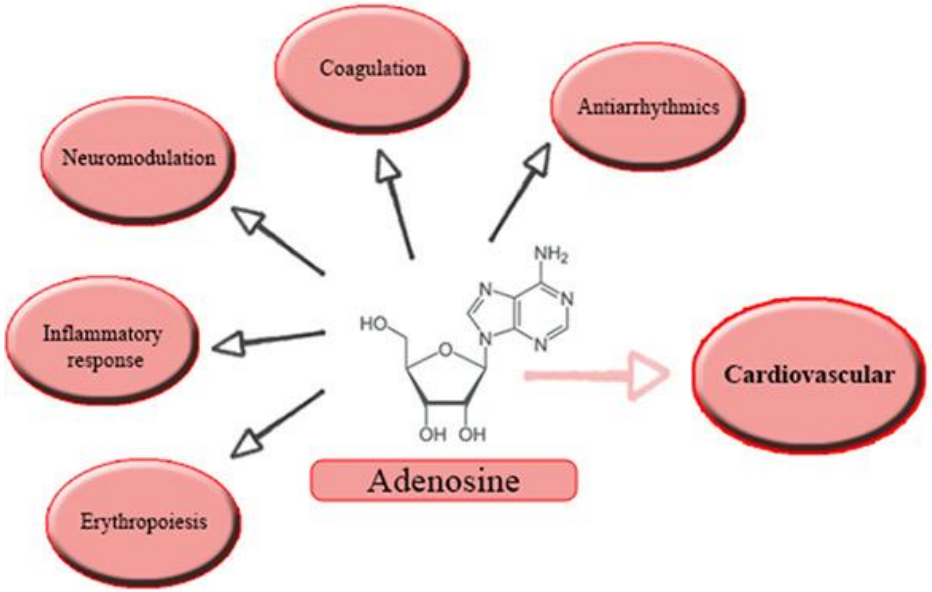
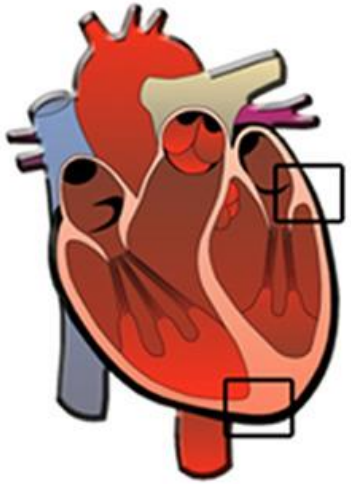
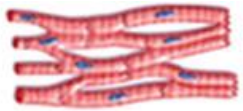
ADENOSINE

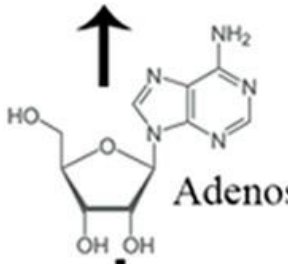






A2 - smooth muscle relaxation - vasodilation

cardiomyocyte



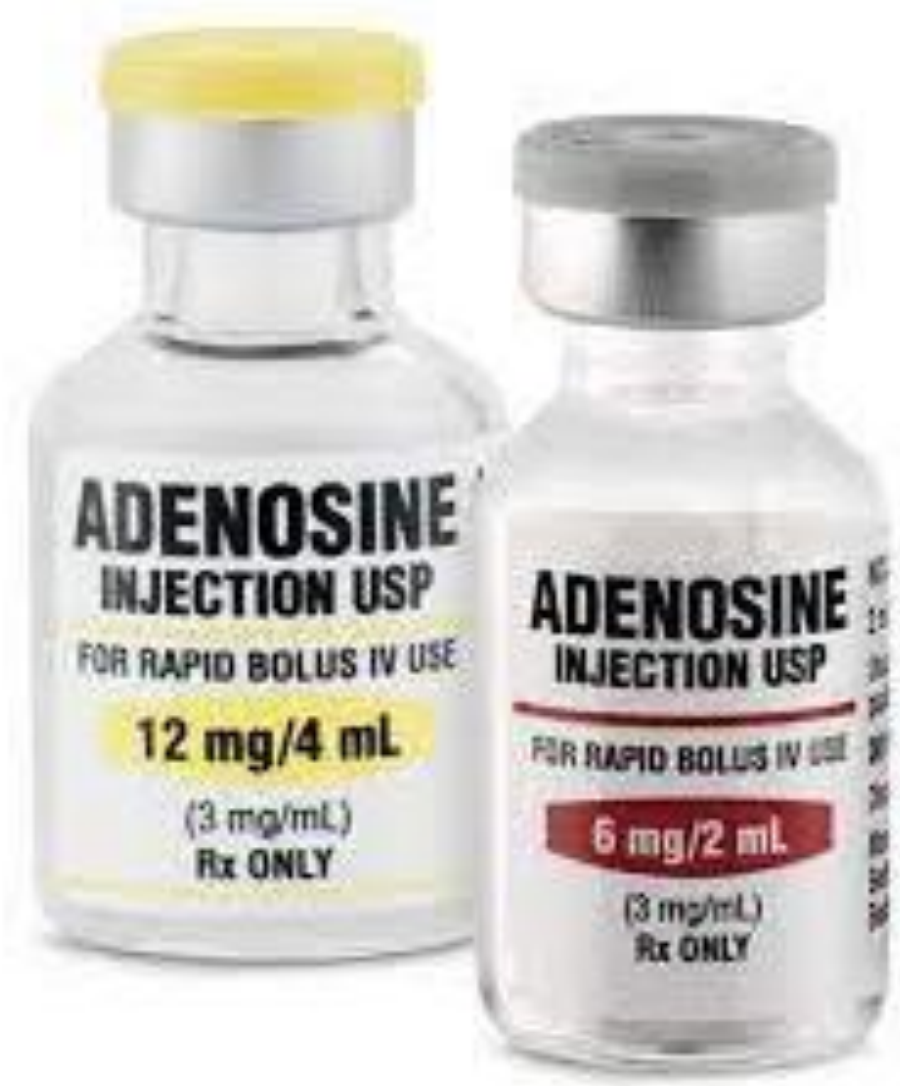
Adenosine

blood vessel

↑ A_{2A} - vasodilation - hyperemia

↓ A_{2A} - ischemic - reperfusion

↓ A_{2A} - platelet aggregation



ADENOSINE

- **Indication:** Symptomatic narrow complex tachycardia (PSVT), pt not responsive to vagal maneuvers. Stable, regular, monomorphic WIDE QRS complex tachycardia unresponsive to Amiodarone (OLMC).
- **Contraindication:** Asthma (might just cause bronchospasm), Bradycardia, 2nd or 3rd degree AV blocks (Except w/ a functioning pacemaker), SA Node disease. It will not terminate AF/A-Flutter, but it slows conduction down at the AV node to identify.
- **Dose:** Adult; 6 mg RAPID IVP, followed by 10 mL normal saline. If dose is to be repeated~ 12 mg followed by 10 mL NS.

- Establish a proximal IV site, use med port closest to the pt.
- Adenosine has a short half life (10-30) seconds, it needs to get to the heart via rapid IV push and a rapid NS flush.

AMIODARONE (AMIO)

- **Indication:** V-Fib/ Pulseless V-tach, Stable VT w/ a pulse: Regular, wide QRS tachycardia w/normal QT.
- ONMC for: SVT, AF/flutter
- **Contraindication:** Bradycardia, 2-3 degree AVB, Torsade's, breast feeding, STOP if QRS widens to >50% of baseline.
- **Dose:** Adult VT w/ Pulse= 150 mg in 7 mL NS SLOW IVP over 10 minutes (150mg in 100 mL NS IVPB over 10 min)
- Adult VF/PVT: (Cardiac Arrest)
  - 1st dose 300 mg IVP/IO
  - 2nd dose 150 mg IVP/IO
- This is a potent anti-dysthymic and can last in the system for over 40 days

ASPIRIN (ASA)

- **Indication:** ASA is an Antiplatelet, it prevents platelet aggregation. *It is not a blood thinner.* Its is also a Non-Steroidal anti-inflammatory drug (NSAID)

- **Contraindication:** Children less than or equal to 18 years old, Chest pain following trauma (especially head trauma), possible stroke or Intercranial hemorrhage, current vomiting or surgery within the past 2 weeks. Bleeding disorders, greater than or equal to 6 months pregnant, active peptic ulcer/severe liver disease.

- **Dose:** 81 mg tablets X 4 for a total of 324mg. Chewed and swallowed.

ATROPINE

Indication: Symptomatic bradycardia (Most likely to work if QRS is a narrow complex), Cholinergic poisonings (Organophosphate/ WMD gasses), Neurogenic shock & Symptomatic bradycardia if pacing ineffective

- Atropine is an Anticholinergic (parasympathetic blocker). It inhibits the transmission of parasympathetic nerve impulses and thereby reduce spasms of smooth muscle

Contraindication: 2* AVB Mobitz type II • 3* AVB with wide QRS complexes • Known hypersensitivity • Use with caution in Cardiac ischemia or MI and hypoxia due to the increase in 02 demand.

Dose: Adult; Symptomatic Bradycardia: 0.5 mg rapid IVP. Repeat every 3-5 min to max of 3mg

DOPAMINE

- **What is Dopamine?** Dopamine is a chemical released in the brain that makes you feel good. ... Dopamine helps nerve cells to send messages to each other. It's produced by a group of nerve cells in the middle of the brain and sends out messages to other parts of the brain.
- Our drug Chemical Class is a Catecholamine. Catecholamine's called epinephrine and norepinephrine are used in the US.
- **Indication:** ß dose: Cardiogenic shock, bradycardia and/or ROSC w/hypotension

  a dose: Neurogenic, septic and anaphylactic shocks

- **Contraindication:** Tachydysrhythmias (↓ BP due to rate problem), Adrenal tumor

DOPAMINE DOSING

How Much: 400mg in 250ml or 800mg/500ml D5W or NS

Beta (ß) dose 5mcg/kg/min

Alpha (a) dose: 10-20mcg/kg/min

Titrate to hemodynamic effect; ↑ from 5mcg/kg/min until BP and perfusion improve. SBP > 90 (MAP >65)

Let's Practice the drip rate!!

- • 5mcg/kg/min: Take 1st number of the patient's weight in pounds away; subtract 2. This will = your mcgtts/min
- Example: 210 lbs = 19 (21-2)
- Answer would be 19mcgtts/min for 5mcg/kg/min beta dose
- alpha dose: <u>double</u> mcgtts

EPINEPHRINE (ADRENALIN)

~CARDIAC ONLY~

- **What does EPI do?** Bronchodilator – Cardiac stimulator – Peripheral vasoconstrictor & Beta-adrenergic agonist
- **Indication:** ALL Pulseless cardiac arrests, VF, Pulseless VT, PEA.
- **Contraindication:** Hypersensitivity to sympathomimetics (Sympathomimetic drugs mimic the effects of sympathetic activation on the heart and circulation). Ventricular Tach secondary to cocaine (it may be considered if VT develops)
- **Dose:** Adults: 1mg/10ml Pulseless Arrest: 1mg IVP/IO q 5 min

LIDOCAINE 2% (XYLOCAINE)

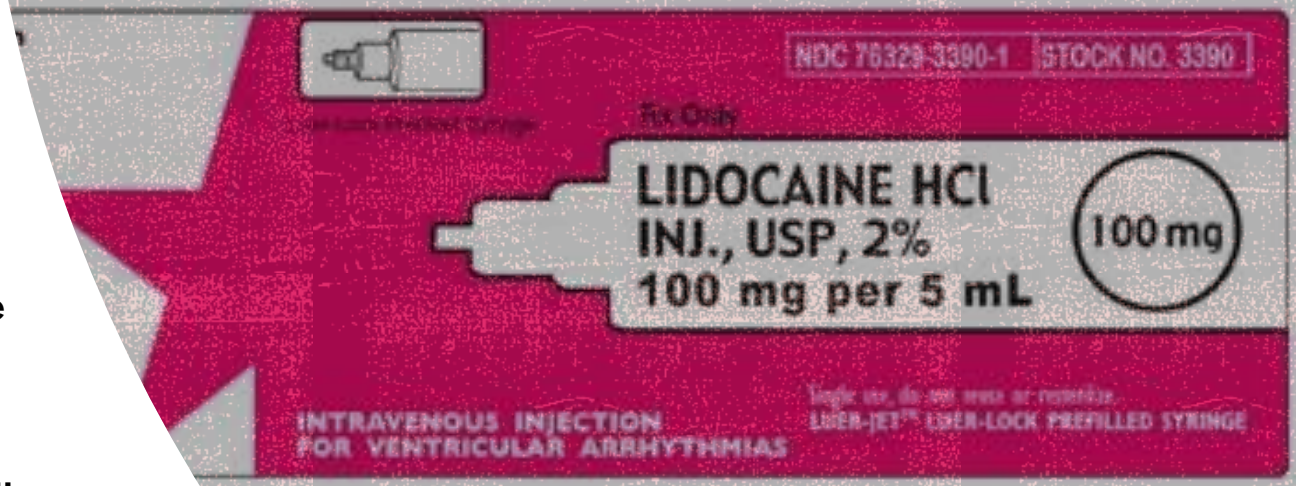
- **What is lidocaine?**

  Antiarrhythmic, Local anesthetic

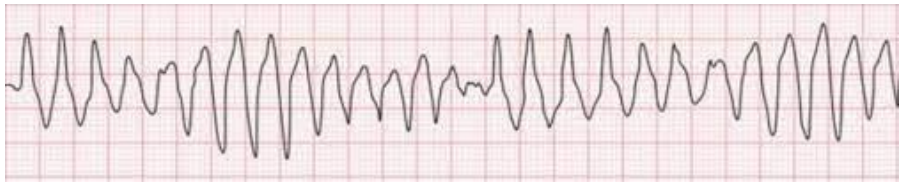
Indication: Flush IO line in responsive patients before NS infusion, ONMC may order for refractory VF.

Contraindication: Hypersensitivity to "amides", "caines", or local anesthetics. Wide complex ventricular escape beats associated with bradycardia, Severe heart blocks

Dose: Flush IO line: 1mg/kg max of 50mg push slowly before flushing line with NS.



MAGNESIUM SULFATE 50% (MAG)

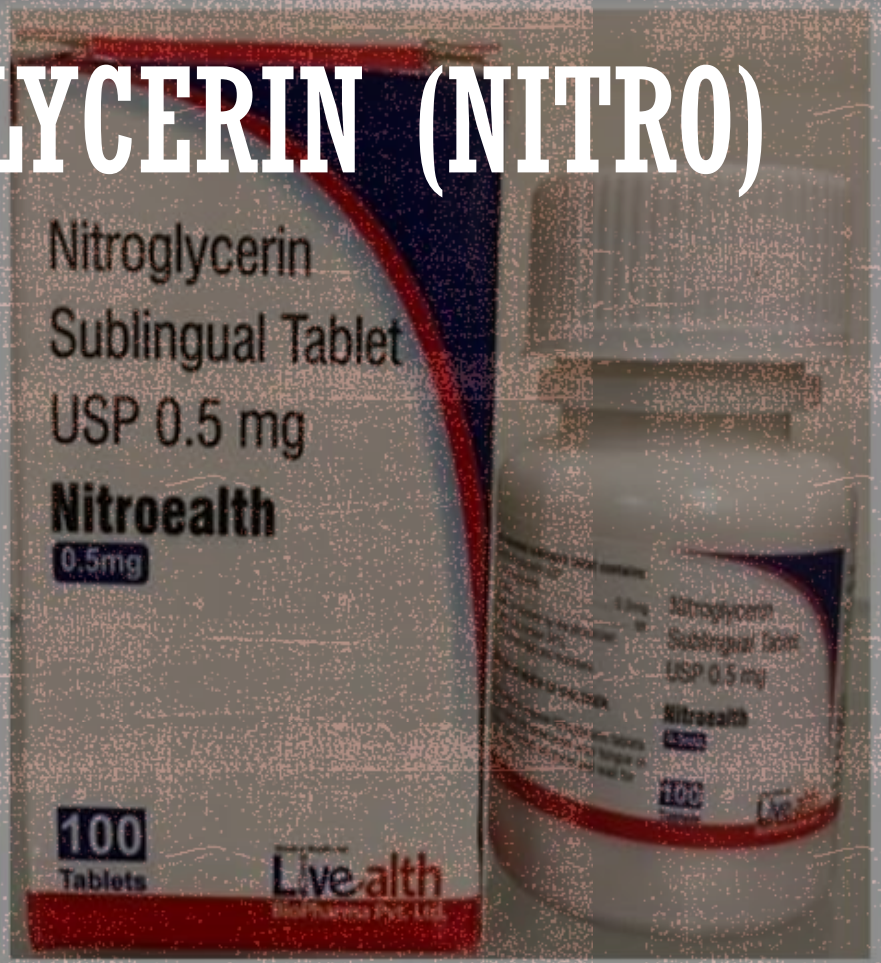


- **What does MAG do?** ~ Magnesium sulfate (MgSO4) can act as a smooth muscle relaxant, possibly by blocking calcium-mediated contraction, decreasing acetylcholine release from neuromuscular junctions, and reducing histamine-induced airway spasm.
- **Indication:** Torsades de Pointes (preeclampsia/eclampsia to prevent/Rx seizures, Critical asthma)
- **Contraindication:** Hypocalcemia, Heart block, Renal dysfunction.
- **Dose:** Adult: Severe Asthma/Torsades; 2 Gm mixed with 16ml NS (20ml syringe) slow IVP or in 50 ml NS IVPB over 5-10 min (no more than 1 Gm/min)

NITROGLYCERIN

NITROGLYCERIN (NITRO)

Sublingual tablets



NITROGLYCERIN (NTG)

What is Nitro? Dilates coronary vessels, Relieves vasospasm and ↑ coronary collateral blood flow to ischemic myocardium. Vascular smooth muscle relaxant; dilates veins to ↓ preload, Higher doses dilate arterioles = ↓afterload

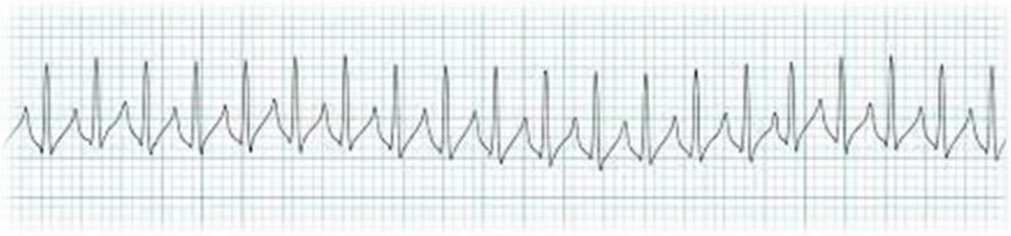
Indication: Acute coronary syndrome Or (ACS) with suspected ischemic pain, pulmonary edema, hypertensive crisis w/chest pain/pulmonary edema.

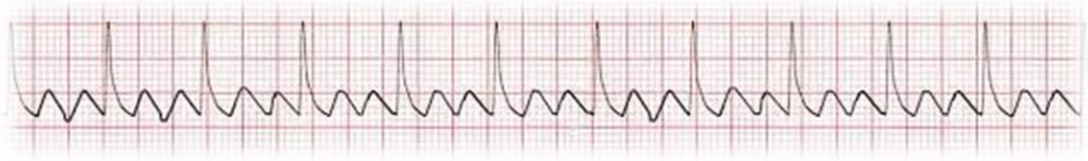
Contraindication: Hypotension (SPB100), Hypoglycemia, ↑ ICP; Glaucoma, If patient has taken Viagra or Levitra within 24 hours or Cialis within 48 hours; Contact medical control for risk/benefit analysis

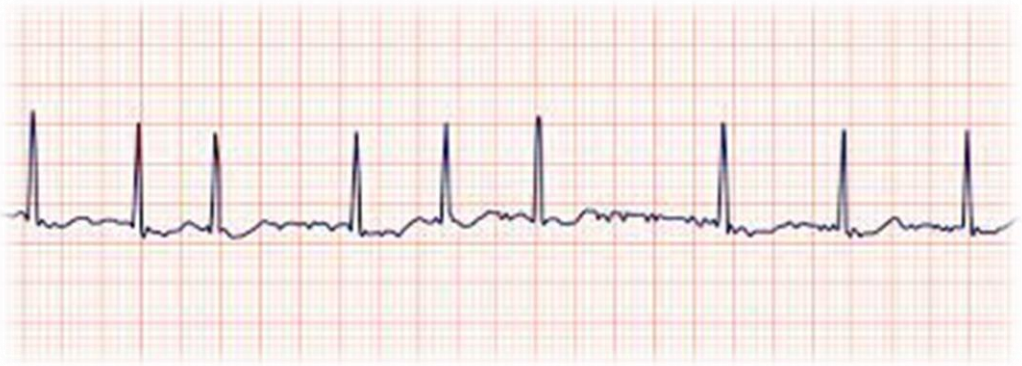
Dose: 0.4 mg tabs SL or spray. May repeat q 3-5 minutes up to 3 doses for ACS. • Unlimited doses for pulmonary edema as long as B/P >90 / DBP > 60 (MAP >65) If B/P 90-100 start IV prior to 1st NTG, Let tab dissolve naturally; may need to drop NS over tab if mouth is very dry.

VERAPAMIL

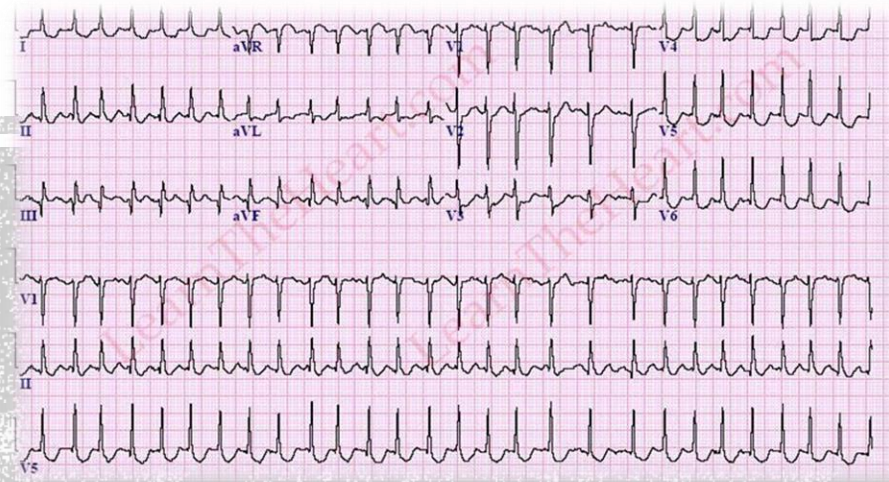
- **What is it?** Verapamil is used alone or together with other medicines to treat heart rhythm problems, severe chest pain (angina), or high blood pressure (hypertension). High blood pressure adds to the workload of the heart and arteries. ~Mayo Clinic
- The Mayo Clinic also states that Verapamil is used to control rapid heartbeats or abnormal heart rhythms. It belongs to a group of drugs called calcium channel blocking agents. Verapamil affects the movement of calcium into the cells of the heart and blood vessels.







VERAPAMIL



VERAPAMIL

- **Indication:** Stable SVT unresponsive to vagal maneuvers and adenosine • To control HR in AF, A-Flutter, or multifocal atrial tachycardia with rapid ventricular response, Angina based on medical control order.

- **Contraindication:** WPW, short PR and sick sinus syndromes, Hypersensitivity, ↓ BP, HF, shock Wide complex tachycardia's of uncertain origin and poisoning/drug-induced tachycardia. 2°-3° AVB w/o a functioning pacemaker, VT
- **Precautions:** May ↓ BP if used with IV or oral ß blockers, nitrates, quinidine
- **Dose:** 5mg ***slow*** IVP over 2 minutes (over 3 minutes in older patients) May repeat 5 mg in 15 minutes: Onset: 1-5 min Peaks: 10-15 min Duration: 30-60 min

CREDITS

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