“I have chest pain and I can’t Breathe”

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Objectives

1

Generate a list of differentials or things that may cause Chest pain and Shortness of Breath.

2

Discuss acute pertinent positives and negative and relevant history and physical assessment.

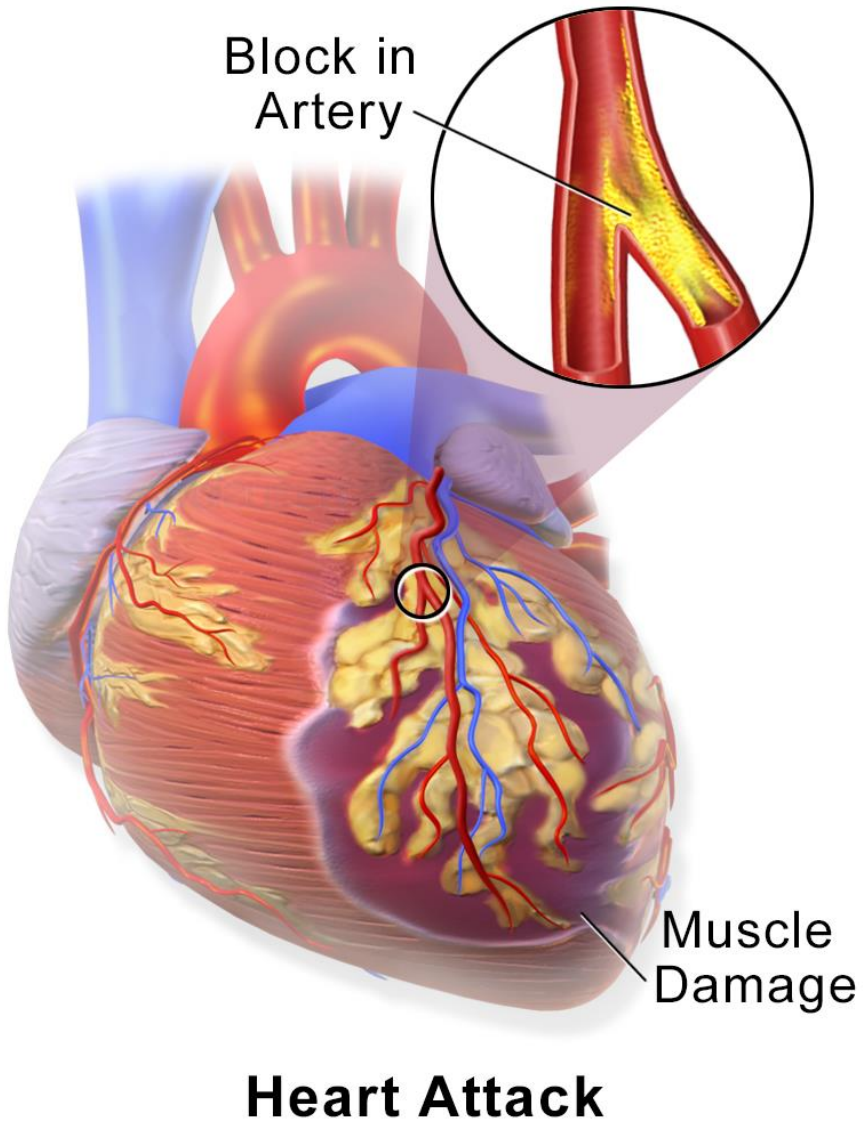
3

Discuss the clinical treatment approach to the patient with chest pain and shortness of breath.

Differential Diagnosis

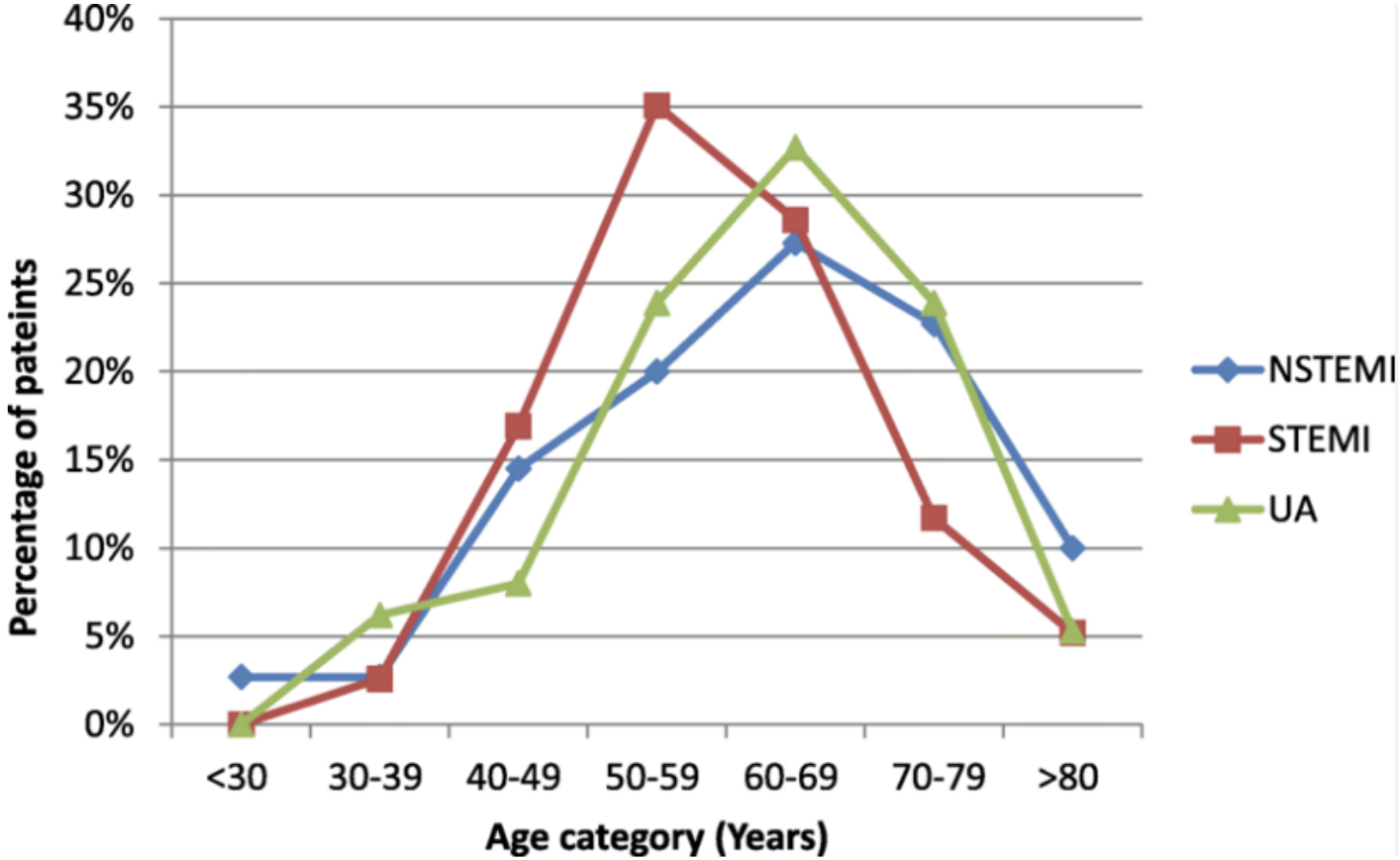
- ACS
- Congestive Heart Failure
- Pulmonary Embolism
- Spontaneous or traumatic pneumothorax
- COPD or reactive airway exacerbation
- Airway or esophageal foreign body
- GI bleeds
- ~~ANXIETY?~~

ACS - Heart attack



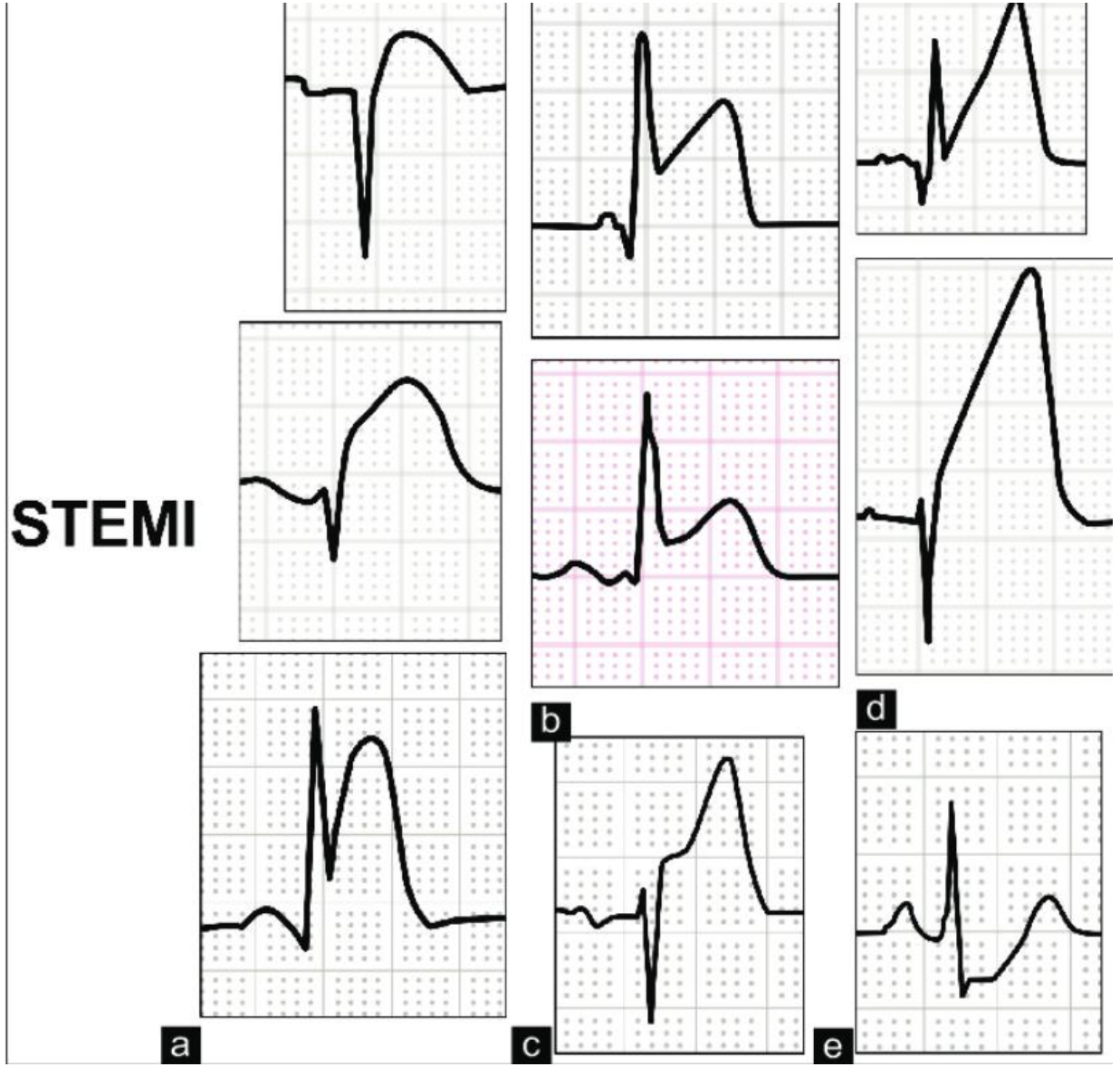
Risk factors

- Age
- Smoking
- Metabolic Disease (DM)
- Substance abuse
- Obesity



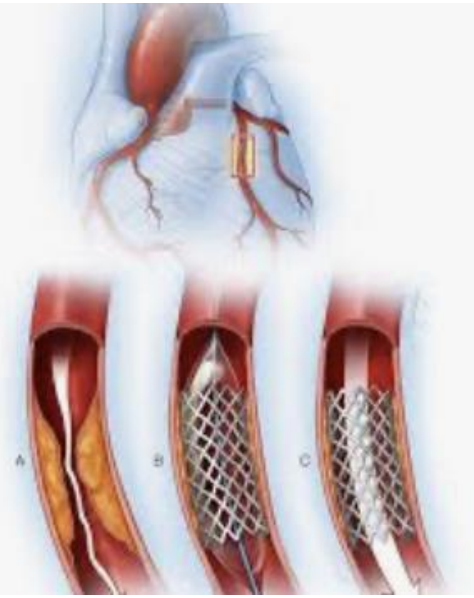
Workup

- Vitals:
  - Trend BP
  - O2Sat Prevent hypoxia
  - EKG & Cardiac Monitoring



The **ONLY** Things We Do To Improve Mortality!

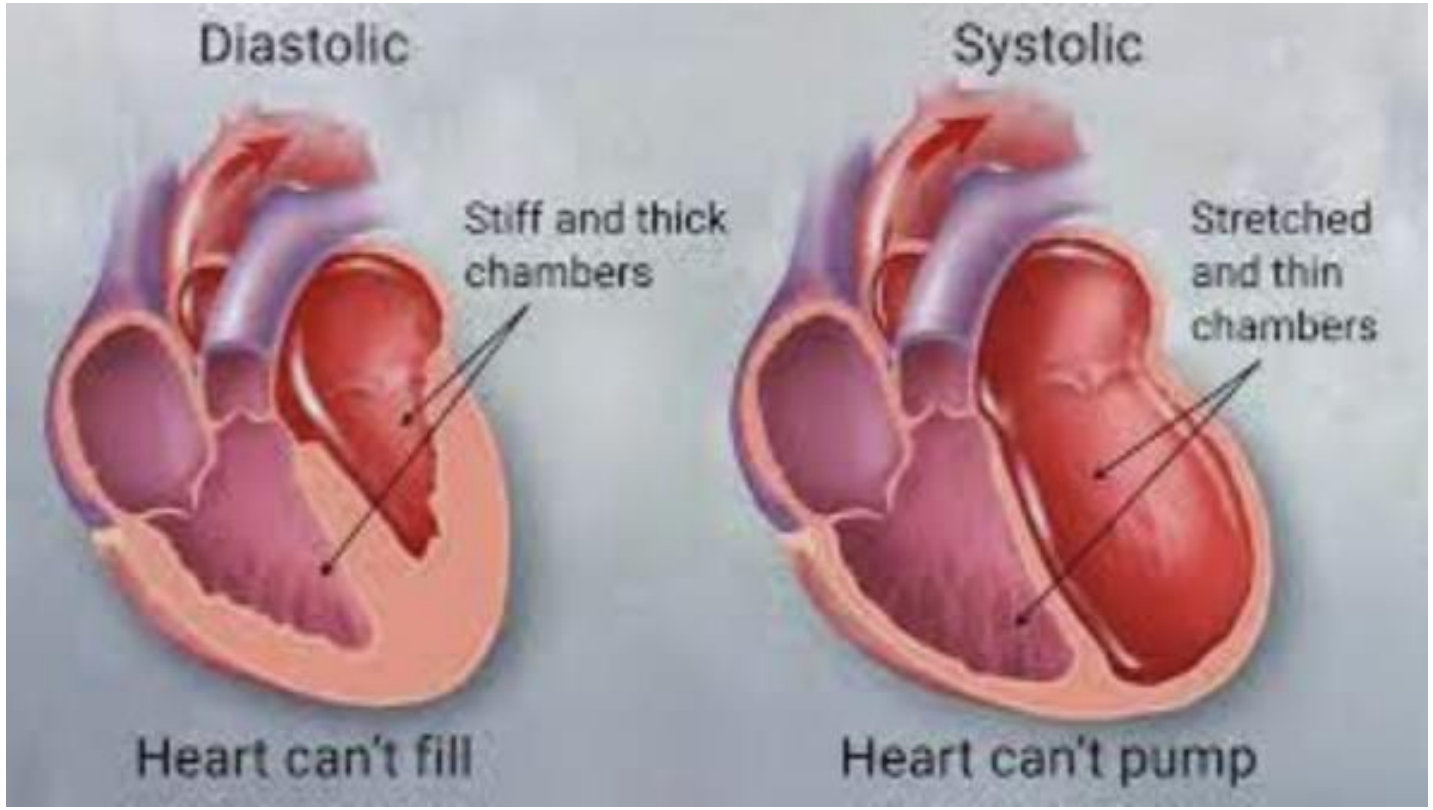
324mg Aspirin



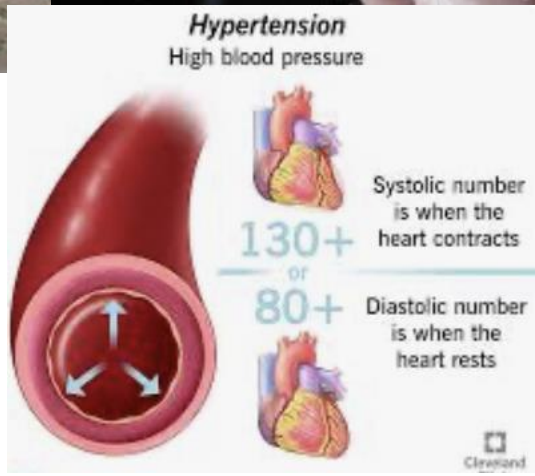
Get Them To The Cath Lab!

Time Is Muscle!

Heart Failure



Causes or predisposing risk factors



Age

Ischemic heart disease

Diabetes/Metabolic disease

Hypertension

Substance abuse - EtOH, stimulants

Infiltrative cardiomyopathies - sarcoidosis, amyloidosis

Valvular diseases, lung diseases.

Clinical signs of CHF

Jugular venous distension

Peripheral edema- gravity dependent (~70%)

Dyspnea/Respiratory distress - (~93%)

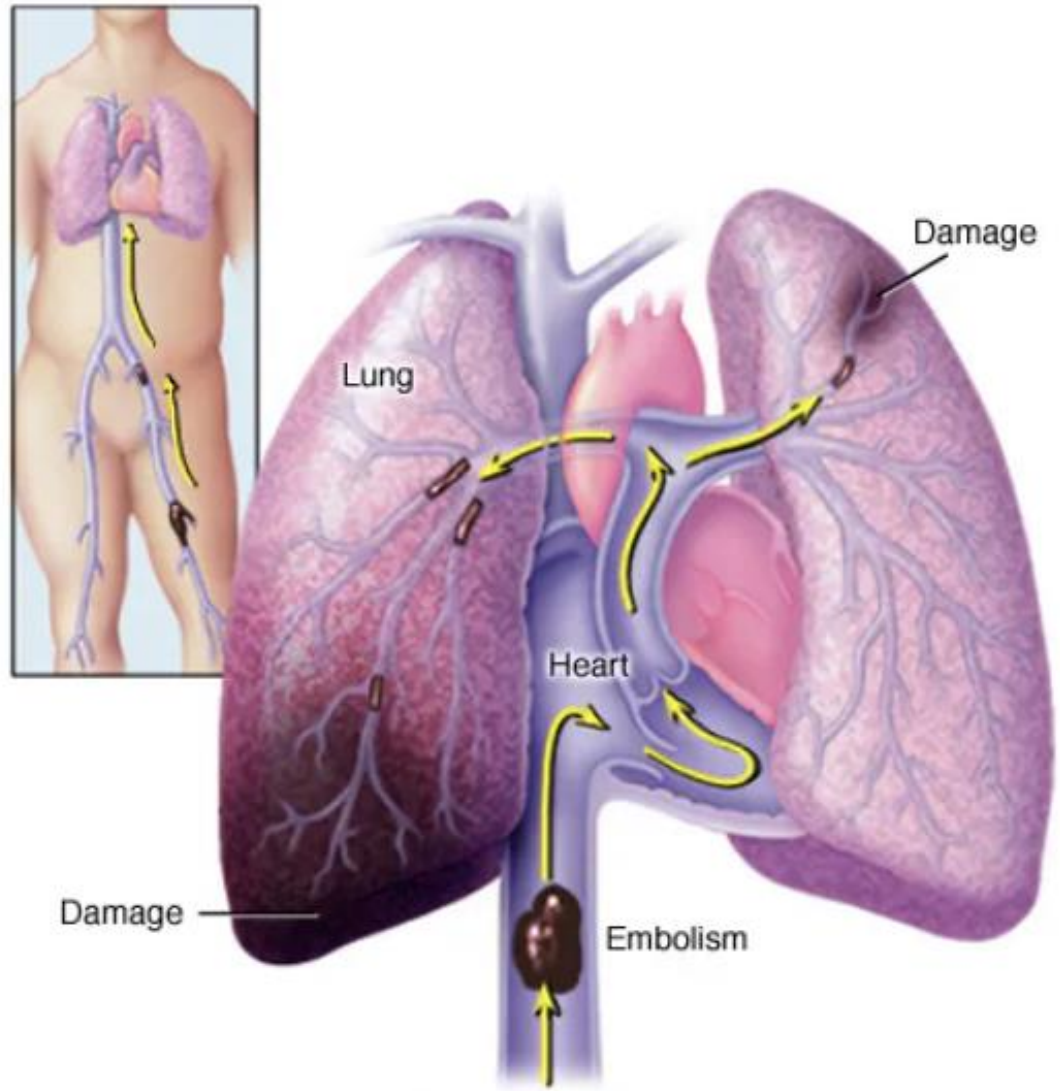
Hypoxia

Rales

Oxygen

- 21% atmospheric air content
- Delivered in form of CPAP/BiPAP can help push fluid out of alveoli.
- Higher oxygen concentrations can also increase recruitment of alveoli.

Pulmonary Embolism (PE)



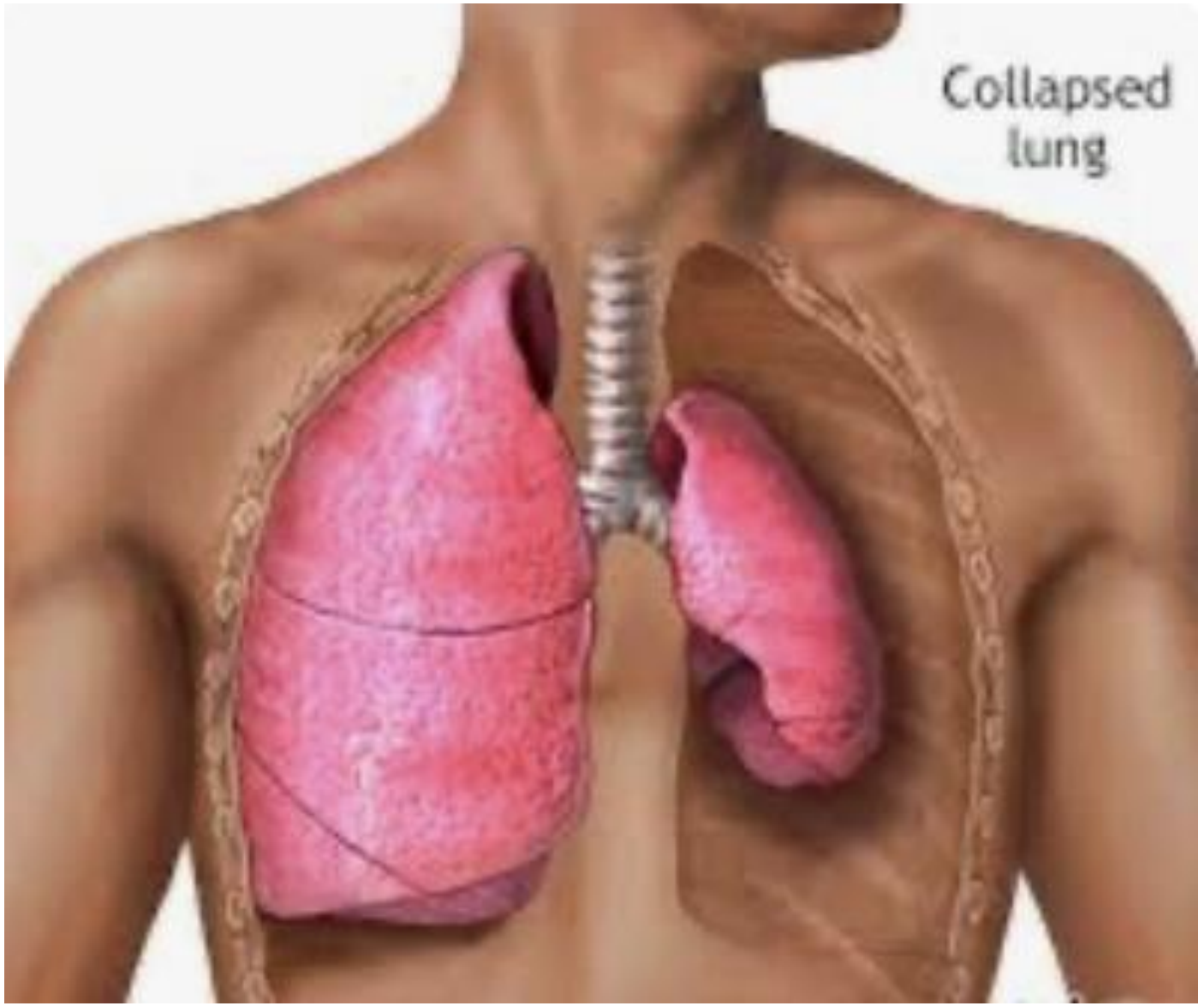
Risk factors - PE

- Clotting disorders
- Auto-immune diseases
- Prior blood clots
- Vascular disease
- Known DVT
- Prolonged travel
- Tobacco use
- Cancer
- Hormone therapy (estrogen)

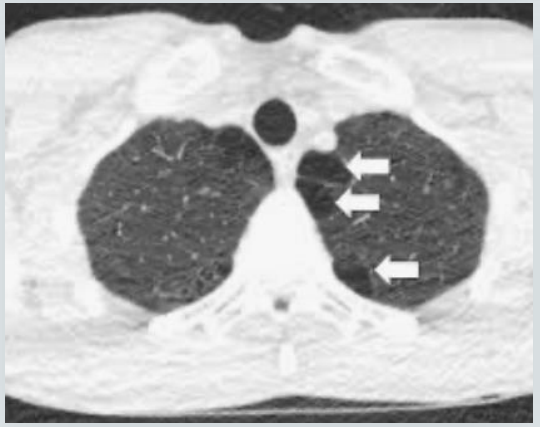
Presentation

- Tachycardic
- Hypoxic (not always)
- Tachypnea (range in severity)
- Syncope
- Dyspnea on exertion
- Non-positional SOB
- Clear lung sounds

Spontaneous or Traumatic Pneumothorax

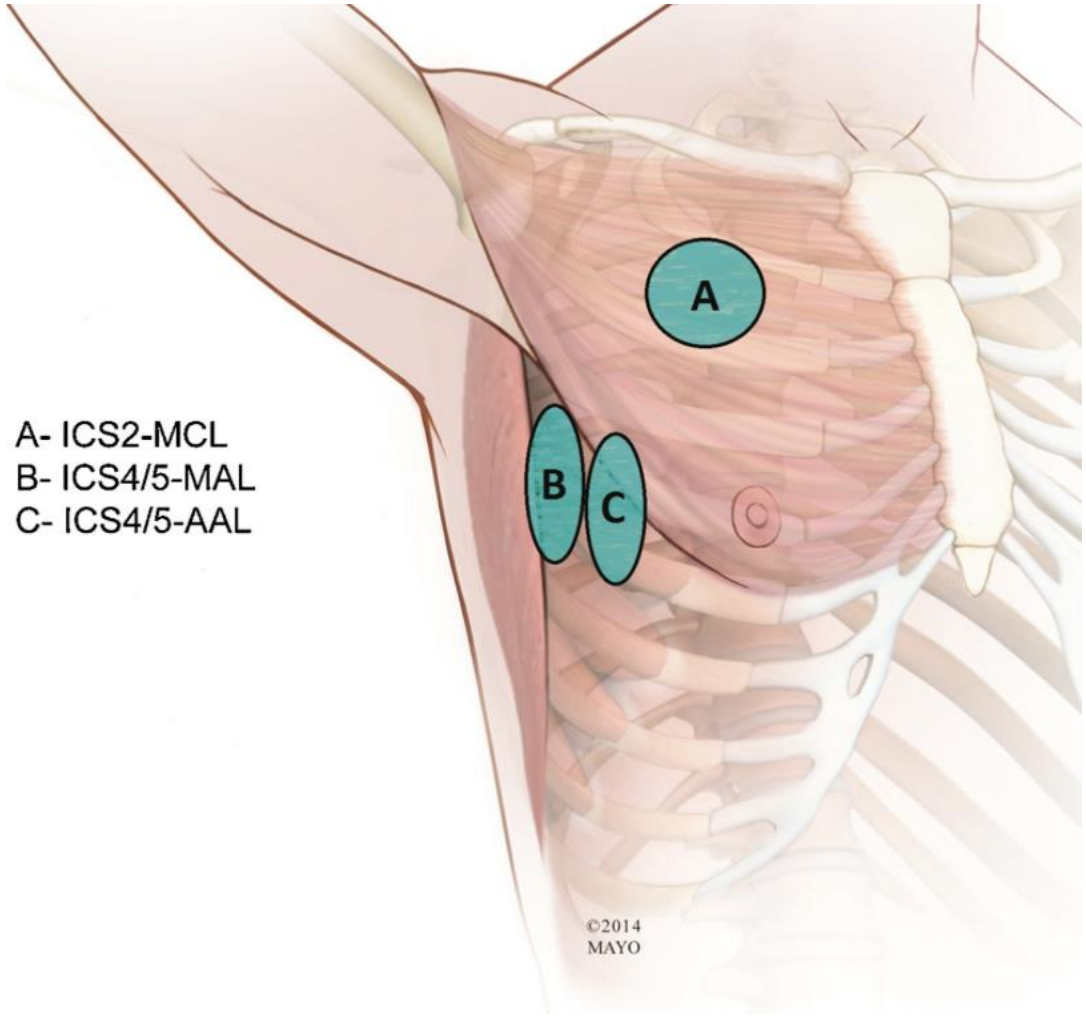


Bleb rupture

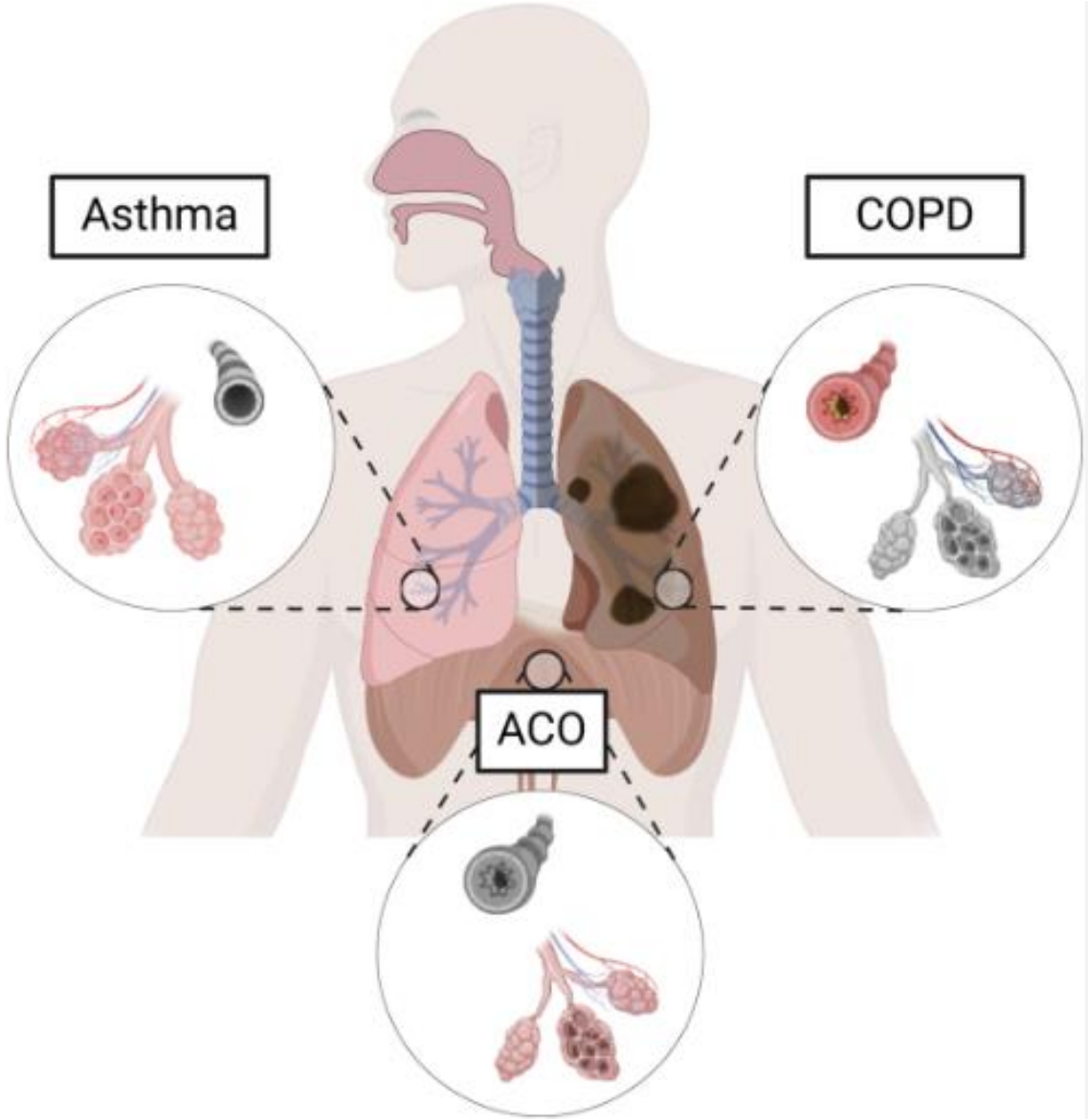


Tension Physiology - Pneumothorax

- Hypotension
- Hypoxia
- Absent Lung sounds
- Hypoxia
- Jugular venous distension (later Sign)



COPD/ Reactive Airway disease



Presentation

- Wheezing
- Coughing
- SOB,
- Tachypnea
- Tripoding
- Past medical history
- Accessory Muscle use

Albuterol (Ventolin)

Class: Bronchodilator via Beta 2 agonist

Action: Relaxation of bronchial wall smooth muscle.

Indications: asthma, bronchitis, bronchospasm and COPD.

Adverse effects: hyperglycemia, hypokalemia, palpitations, sinus tachycardia, anxiety, tremor, nausea, vomiting.

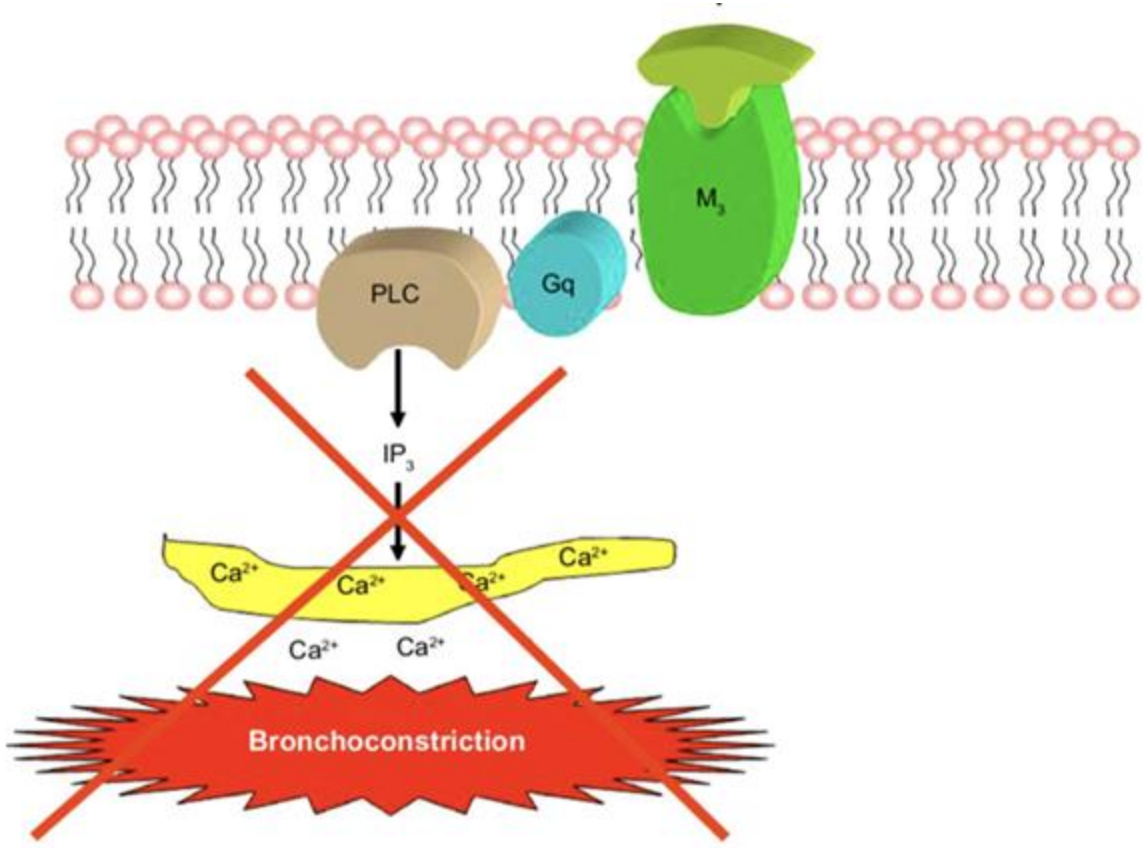
Ipratropium Bromide

Class: anticholinergic bronchodilator.

Action: Antagonizes acetylcholine receptors in the bronchial smooth muscle, producing bronchodilation.

Indications: asthma, bronchospasm associated w COPD

Contraindications: Closed-angle glaucoma, bladder neck obstruction, BPH



Dexamethasone

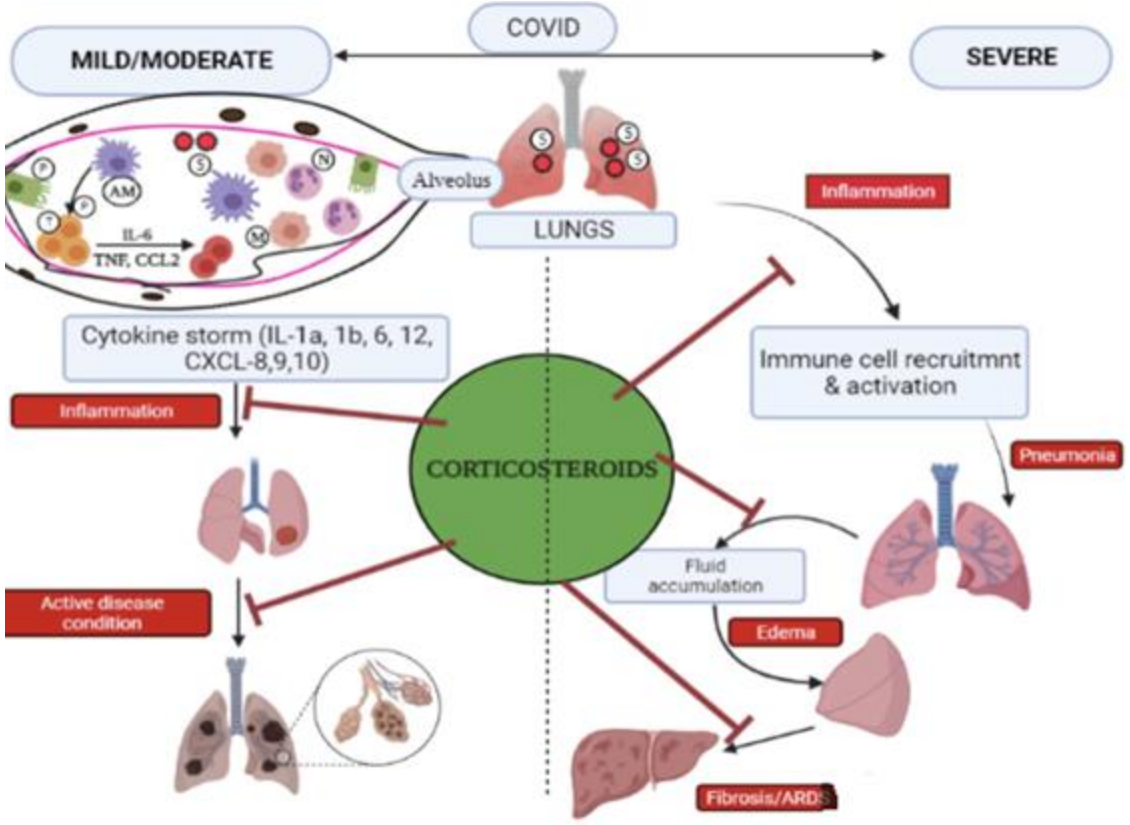
Class: corticosteroid

ACtion: reduces inflammation by multiple mechanisms

Indications: anti-inflammatory agent for a wide variety of medical conditions, including asthma, airway edema, acute mountain sickness, cerebral edema

Adverse effects: Depression euphoria headache, restlessness, hypertension, bradycardia, n/v, diarrhea, weakness

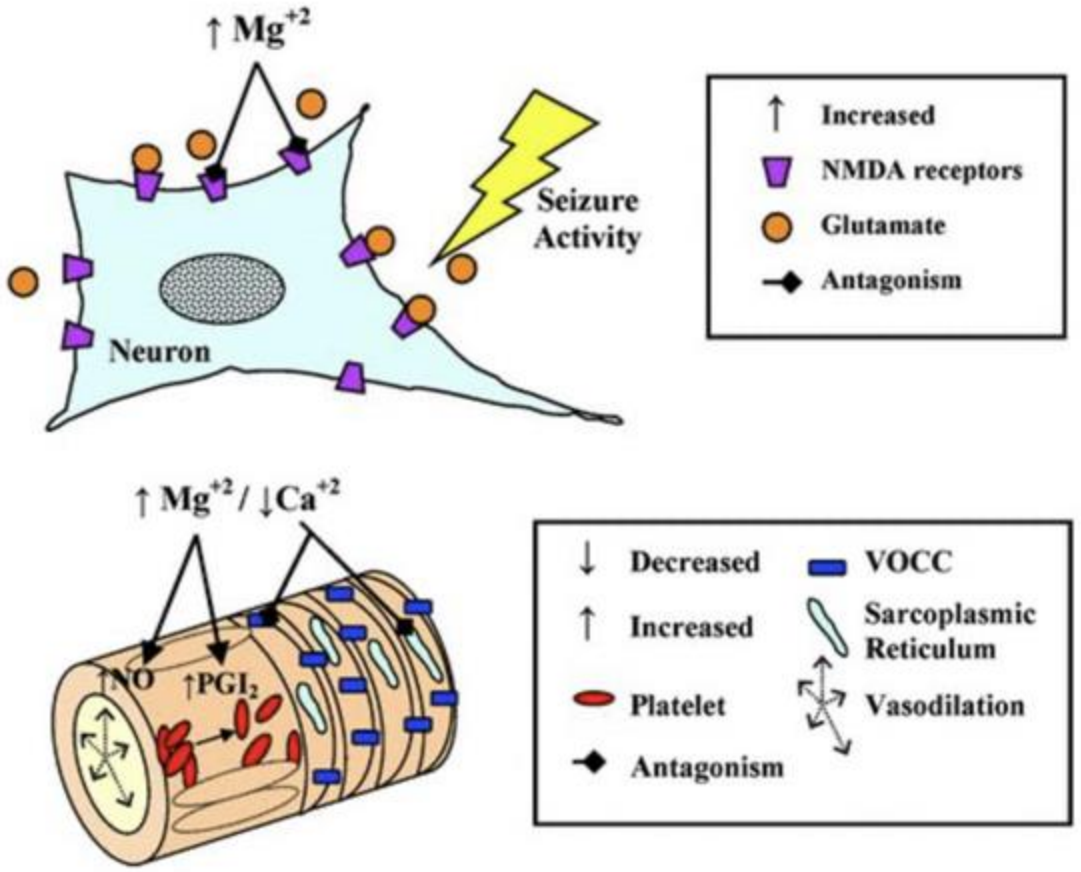
Contraindications: fungal infections, known sensitivity,



MAgnesium Sulfate

- Electrolyte tocolytic, mineral
- MOA: Mag is a cofactor in neurochemical transmission and muscular excitability. Controls seizures by blocking peripheral neuromuscular transmission. Smooth muscle relaxation resulting in peripheral vasodilation.
- Indications: Torsades De Pointe (polymorphic V-TACH), Status asthmaticus.
- Adverse effects: Mag toxicity (skin flushing, loss of reflexes, muscle weakness and eventual paralysis, CArdiac, CNS and respiratory depression.

Contraindications: AV block, GI obstruction, use with caution in Renal patients or renal dysfunction.



Questions

CE’s