

# **Activated Charcoal**

## **Name:**

- Generic name = activated charcoal
- Trade name = SuperChar, InstaChar, Actidose, Liqui-Char, Actidose-Acqa, Carcoaid

## **Indications:**

- Ingestion of poison or medications/drugs
- Usually most effective when administered within 1 hr of poisoning, and only in very specific cases of poisoning.

## **Contraindications:**

- Altered mental status, altered level of consciousness = risk of aspiration
- Pt unable to swallow
- Patient has ingested petroleum, acid, or alkali

## **Mechanism of Action/Therapeutic Effect:**

- Activated charcoal absorbs poisons, preventing their absorption through the digestive tract.
- Activated charcoal is not effective with: alcohol, kerosene, gasoline, caustics, metals (iron).

## **Side Effects:**

- Nausea, vomiting, constipation, blackening of stool

## **Preparation/Form:**

- Premixed in water

## **Administration Route:**

- Oral

## **Dose:**

- Adult & Children = 1-2 g/kg body weight

# **Nitroglycerin**

## **Name:**

- Generic name = nitroglycerin
- Trade name = Nitrostat, Nitro-Bid, Nitrolingual Spray

## **Indications:**

- Chest pain of suspected cardiac origin
- Medication must be prescribed to patient.
- EMT has online or offline medical direction for administration.

## **Contraindications:**

- Systolic BP  $\downarrow$  90 mmHg
- HR  $<$  50/min, HR  $>$  100/min
- Suspected head injury
- Children or infants
- 3 or more doses already taken by patient
- Pt use of erectile dysfunction medications (Cialis, Viagra, Levitra) within past 24 hrs

## **Mechanism of Action/Therapeutic Effect:**

- Vasodilation  $\rightarrow$  decreased preload  $\rightarrow$  decreased workload of the heart  $\rightarrow$  decreased myocardial oxygen demand.

## **Side Effects:**

- Headache, hypotension, tachycardia

## **Preparation/Form:**

- Compressed powder/tablet, liquid/spray

## **Administration Route:**

- Sublingual

## **Dose:**

- Adult = 0.3-0.4 mg, 3 administrations total

# **Aspirin**

**Name:**

- Generic name = aspirin
- Trade name = Bayer, ASA, Bufferin

**Indications:**

- Chest pain of suspected cardiac origin
- EMT has online or offline medical direction for administration.

**Contraindications:**

- Allergy to aspirin
- Use with caution in patients with recent surgeries or chronic bleeding

**Mechanism of Action/Therapeutic Effect:**

- Decreases platelet aggregation, preventing clotting.
  - Does *not* lyse existing clots

**Side Effects:**

- GI irritation, heartburn, nausea, vomiting

**Preparation/Form:**

- Compressed powder/tablet

**Administration Route:**

- Chewed

**Dose:**

- Adult = 160-325 mg

# **Epinephrine**

## **Name:**

- Generic name = epinephrine
- Trade name = Adrenalin
- Trade name, auto injectors: EpiPen, EpiPen Jr., Twinject

## **Indications:**

- Moderate to severe anaphylaxis.
- Medication must be prescribed to patient.
- EMT has online or offline medical direction for administration.

## **Contraindications:**

- None, when moderate to severe anaphylaxis is present.

## **Mechanism of Action/Therapeutic Effect:**

- Activates  $\alpha_2$  receptors = peripheral vasoconstriction =  $\uparrow$ BP,  $\downarrow$  capillary permeability
- Activates  $\beta_2$  receptors = bronchodilation =  $\uparrow$  ventilation
- Activates  $\beta_1$  receptors = tachycardia,  $\uparrow$  cardiac contractility =  $\uparrow$  cardiac output

## **Side Effects:**

- $\uparrow$ HR,  $\uparrow$ BP, pale skin
- Chest pain, dizziness
- Headache, nausea, vomiting
- Excitability, anxiousness

## **Preparation/Form:**

- Liquid form in an auto-injector

## **Administration Route:**

- IM

## **Dose:**

- Adult = 0.3 mg, child = 0.15 mg

## **Oral Glucose**

### **Name:**

- Generic name = oral glucose
- Trade name = Glutose, Insta-Glucose

### **Indications:**

- Altered mental status
- PMH of diabetes and/or a BGL < 60 mg/dL
- Ability to manage airway and swallow

### **Contraindications:**

- Pt unresponsive, or unable to swallow
- Confirmed BGL > 60 mg/dL

### **Mechanism of Action/Therapeutic Effect:**

- Increases the BGL, increasing the amount of glucose available to the brain.

### **Side Effects:**

- None, when administered properly.
- Can result in airway obstruction and/or aspiration in patients unable to swallow effectively or without a gag reflex.

### **Preparation/Form:**

- Gel

### **Administration Route:**

- Oral

### **Dose:**

- One tube, typically 15.0 g of glucose

# **Inhaled Bronchodilators**

## **Name:**

- Many types of bronchodilators with many names.

## **Indications:**

- Patient is in respiratory distress and there are signs and symptoms consistent with bronchoconstriction.
- Patient has a physician-prescribed MDI.

## **Contraindications:**

- Patient's level of consciousness prevents them from using the MDI.
- Patient has already taken the max dose prior to EMS arrival.

## **Mechanism of Action/Therapeutic Effect:**

- $\beta_2$ -agonists stimulate the sympathetic nervous system, resulting in bronchodilation. (albuterol/proventil, metaproterenol)
- Parasympatholytics block parasympathetic tone, increasing the effects of the sympathetic nervous system, resulting in bronchodilation. (atrovent)

## **Side Effects:**

- Tachycardia, tremors, shakiness, nervousness, dry mouth, Nausea, vomiting.

## **Preparation/Form:**

- Aerosolized medication in an MDI
- Liquid medication in a nebulizer

## **Administration Route:**

- Inhaled

## **Dose:**

- Varies by medication and delivery method

# **Oxygen**

**Name:**

- No trade name

**Indications:**

- Hypoxia

**Contraindications:**

- Do not use near open flame (cigarettes).
- Use with caution in patients with possible hypoxic drive.

**Mechanism of Action/Therapeutic Effect:**

- Increases  $\text{FiO}_2$ , increasing oxygenation and reversing hypoxia.

**Side Effects:**

- Rarely, decreased respiratory effort in patients with hypoxic drive.

**Preparation/Form:**

- Gas

**Administration Route:**

- Inhaled

**Dose:**

- Varies by flow rate and delivery device.