

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 α_2 receptors = peripheral vasoconstriction = \uparrow BP, \downarrow capillary permeability
- Activates β_2 receptors = bronchodilation = \uparrow ventilation
- Activates β_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:

- β_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 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.