ALBUTEROL

Classification: Bronchodilator (Beta-2 specific)

Actions:
• Relaxes bronchial smooth muscle
• Decreases airway resistance
• Promotes reuptake of potassium into cells

Indication:
• Respiratory distress with wheezes/bronchospasm
• Anaphylaxis with wheezes
• Crush syndrome with suspected hyperkalemia

Contraindications: Known hypersensitivity to Albuterol

Adverse Effects:

Neurological
• Tremors
• Headache/dizziness
• Sweating
• Anxiety

Cardiovascular
• Tachycardia
• Hypertension
• Dysrhythmias
• Palpitations

Gastrointestinal
• Nausea / vomiting

Dosage Information: May Assist patient with Metered Dose Inhaler (MDI) as per prescription label.

Route of administration: Inhaled

Onset: 5-15 minutes

Duration: 3-6 hours

Notes:
• Albuterol should be administered with oxygen, and be sure to closely monitor the patient's vital signs and cardiac stat
• Beta-blocking agents inhibit the effects of albuterol
• The standard preparation of albuterol is in a premix with saline at 0.083% potency
ASPIRIN (Acetylsalicylic Acid, ASA)

Classification: Nonsteroidal anti-inflammatory (NSAID) – anti-thrombotic, analgesic, antipyretic, anti-inflammatory

Actions:
- Inhibits prostaglandin synthesis
- Irreversibly inactivates the enzyme cyclooxygenase in circulating platelets

Indication: Adult patients experiencing chest pain consistent with acute coronary syndrome

Contraindications:
**ABSOLUTE:**
- Anaphylaxis to aspirin or other salicylates

**RELATIVE:** Patients who have any one of the following:
- History of GI bleeding
- History of asthma
- Bleeding disorders (e.g. hemophilia, low platelets)

Adverse Effects:
**Respiratory**
- Bronchospasm
- Asthma-like symptoms
- Gastrointestinal
- Nausea/vomiting
- Gastric upset
- GI bleeding
- Potentiation of peptic ulcer

**Other**
- Skin Rash
- Anaphylaxis
- Prolonged bleeding

Dosage Information: 324 mg (81mg X 4) chewable children’s aspirin

Route of administration: PO

Onset: 15 minutes

Duration: 2-4 hours

Notes:
- The patient should be advised to chew the tablets prior to swallowing
- Aspirin will increase the risk of bleeding especially when combined with anticoagulants and thrombolytic therapy

NOT IN EMT POLICY IN VENTURA COUNTY
ATROPINE SULFATE

Classification: Anticholinergic agent

Actions:
- Inhibits parasympathetic stimulation by blocking acetylcholine at the muscarinic receptors
- Decreases vagal tone resulting in increased heart rate (chronotropic) and AV conduction (dromotropic)
- Dilates bronchioles and decreases respiratory tract secretions
- Decreases gastrointestinal motility

Indication:
- Organophosphate poisoning
- Nerve agent poisoning

Contraindications: None significant in the above indications

Adverse Effects:
Neurological
- Restlessness
- Seizures
- Pupillary dilation
- Blurred vision/dizziness
- Confusion
Cardiovascular
- Tachycardia
- Greater oxygen demand
- Paradoxical bradycardia
Other
- Worsens glaucoma
- Flushed/hot/dry skin
Respiratory
- Mucous plugs
Gastrointestinal
- Dry mouth
- Difficulty swallowing

Dosage Information:
- Mild – 1 IM injection in combination with Pralidoxime Chloride (Mark 1 or Duodote Injector)
- Moderate – 1 IM injection in combination with Pralidoxime Chloride, repeat X 1 in 10 min (Mark 1 or Duodote Injector)
- Severe - 3 IM injections in combination with Pralidoxime Chloride in rapid succession (Mark 1 or Duodote Injector)

Route of administration: IM

Onset: Rapid

Duration: 2-6 hours

Notes: The acronym “SLUDGE” is used to represent the various signs/symptoms of an organophosphate
EPINEPHRINE (Adrenalin®)

Classification: Sympathomimetic agent (catecholamine)

Actions:
- Increases cardiac output due to increased inotropy, chronotropy, dromotropy, and AV conduction (Beta-1)
- Relaxes smooth muscles of the respiratory tract (Beta-2)
- Increases systolic blood pressure due to increased cardiac output (Beta-1) and vasoconstriction (Alpha)
- Increases coronary perfusion during CPR by increasing aortic diastolic pressure

Indication:
- Anaphylaxis
- Severe Respiratory distress with wheezes

Contraindications: None in above situations

Adverse Effects:
- Cardiovascular
  - Tachycardia
  - Hypertension
  - Chest pain
  - Palpitations
  - Ventricular fibrillation
- Neurological
  - Anxiety
  - Dizziness
  - Headache
  - Tremors
  - Seizures
- Gastrointestinal
  - Nausea/vomiting

Dosage Information:
- Adults: 0.3mg IM
- Pediatrics: 0.15 mg IM

Route of administration: IM

Onset: IM – 6-12 minutes

Duration: IM – 1-4 hours

Notes:
- Use epinephrine with caution in older patients. If patient is clearly in anaphylaxis, this is the drug of choice, even in older patients.
- Tachycardia is not a contraindication to epinephrine.
NALOXONE HYDROCHLORIDE (Narcan®)

Classification: Narcotic antagonist

Actions:
- Displaces narcotics from opiate receptor sites
- Reverses respiratory depression, sedation, and pupillary effects of narcotics

Indication: Respiratory depression/apnea associated with suspected narcotic overdose

Contraindications: Newborn patients Cardiac Arrest Patients

Adverse Effects:
- Cardiovascular
  - Tachycardia
  - Hypertension
- Neurological
  - Pupillary dilation
- Gastrointestinal
  - Nausea/vomiting

Dosage Information:
Adult: IM – 2mg, may repeat X 1, Max of 4mg
IN – 4mg, may repeat X 1, Max of 8mg
(Must use 4.0mg in 0.1ml Nasal Spray)
Maintain respirations greater than 12/min

Route of administration: IN/IM

Onset:
- IN/IM – 2-5 minutes

Duration:
- IN/IM – >45 minutes

Notes:
- The use of Naloxone is contraindicated in neonates where mother is known or suspected to be narcotic dependent, or in a patient who is narcotic dependent, as it may cause withdrawal symptoms.
- Naloxone should only be given for a respiratory rate under 12 and should not be given as a diagnostic agent for altered level of consciousness.
- Policy 613 (DNR) states that in a situation when a patient has an operative DNR, and if the patient is taking high doses of opioid medication, and has decreased respiratory drive, BLS providers do not give Narcan.
NITROGLYCERIN (Nitrostat®)

Classification: Vasodilator

Actions:
- Dilates coronary vessels enhancing coronary perfusion
- Reduces coronary vasospasm
- Decreases myocardial workload and oxygen demand
- Relaxes vascular smooth muscle, resulting in peripheral vasodilatation
- Produces venous pooling due to vasodilatation
- Reduces preload and after load

Indication:
- Chest pain associated with acute coronary syndrome
- Pulmonary edema associated with congestive heart failure

Contraindications:
- Head trauma or suspected increased intracranial pressure
- Hypotension (see Notes)
- Hypovolemia/severe anemia
- History of recent erectile dysfunction medication usage (see notes)

Adverse Effects:

Cardiovascular
- Tachycardia/palpitations
- Orthostatic hypotension

Neurological
- Headache
- Increased ICP
- Dizziness/syncope

Other
- Flushed skin
- Sublingual burning

Dosage Information:
May Assist patient with sublingual tabs or spray as per prescription label.

Route of administration: SL or lingual spray

Onset: 1-3 minutes

Duration: 30-60 minutes

Notes:
- Patients can develop tolerance to nitroglycerin.
- If administered via spray, hold can upright and do not shake can.
- Administering personnel must ensure to wear gloves to avoid inadvertent skin absorption.
- Nitroglycerin must be stored in a glass vial away from light and tends to lose potency once exposed to air.
- The possibility that a patient's personal nitroglycerin may have lost potency must be kept in mind when a patient takes nitroglycerin for symptoms without relief. Check the expiration date as well.
- Nitroglycerin should not be given to a patient with a systolic blood pressure less than 100mmHg. The exception to this is when a patient with a complaint of chest pain has a normal systolic BP of less than 100mmHg. In this circumstance, VCEMS policy allows for nitroglycerin administration unless the systolic BP is less than 90mmHg.
- Erectile dysfunction drugs such as Viagra/Revatio (sildenafil), Levitra (vardenafil) and Cialis (tadalafil) may have a cumulative vasodilatory effect when used in conjunction with nitroglycerin. If recently used (Viagra or Levitra within 24 hours; Cialis within 48 hours).
ORAL GLUCOSE

Classification: Hyperglycemic agent

Actions: Provides an oral source of glucose rapidly utilized for cellular metabolism

Indication: • The patient has a history of diabetes controlled by medication and shows signs or symptoms of altered mental status.
  - Blood sugar < 60 mg/dl

Contraindications: • Inability to swallow and protect their airway (patient must have an intact gag reflex)
  • Blood sugar > 60 mg/dl

Adverse Effects: Respiratory
  • Aspiration
Gastrointestinal
  • Nausea / vomiting

Dosage Information: 15g

Route of administration: PO

Onset: Rapid

Duration: Brief

Notes:
• Administer ONLY to patients with an intact gag reflex and the ability to swallow.
• The oral preparation of glucose may be administered by placing one inch of paste onto a tongue depressor at a time.
• Glucose is hyperosmolar and may cause nausea and vomiting.
OXYGEN (O₂)

Classification: Elemental Gas (Room air contains 21% oxygen)

Actions:
• Oxidizes glucose to provide cellular energy
• Essential for normal aerobic metabolism

Indication: Whenever oxygen demands are increased

Contraindications: No absolute contraindications exist in the field

Adverse Effects: High dosages of oxygen for prolonged periods (> 24 hours) in the COPD patient may cause respiratory depression/apnea

Dosage Information: Refer to VCEMS Policy 705 for specific

Route of administration: Inhaled

Onset: 1-2 minutes

Duration: Up to 30 minutes

Notes:
• Never withhold oxygen from a patient in respiratory distress. Use caution with COPD patients who have a chief complaint other than respiratory distress. In the COPD patient, hypoxic drive may be their stimulus to breathe. If respiratory depression occurs, support ventilations with 100% oxygen via BVM.
• Current AHA guidelines recommend supplemental oxygen to maintain a SpO₂ > 94%.
• Dosage range of oxygen delivery devices:
  • Nasal cannula: 2-6 L/min 25-40% concentration
  • Mask: 10-15 L/min 50-60% concentration
  • NRB Mask: 10-15 L/min 90-95% concentration
  • BVM with reservoir: 15 L/min 40-90% concentration
  • ET with BVM: 15 L/min 100% concentration
PRALIDOXIME CHLORIDE
(2PAM)

Classification: Cholinesterase Reactivator

Actions:
- Reactivates cholinesterase which has been inactivated by phosphorylation due to an organophosphorous nerve agent or insecticide
- Destroys excess acetylcholine so that the neuromuscular junctions can function normally
- Works with atropine to relieve paralysis of the muscles of respiration and plays a minor role in relieving muscarinic signs such as salivation or bronchospasm

Indication: As an adjunct to atropine in the treatment of poisoning by organophosphorous nerve agents and insecticides

Contraindications: None in the above life-threatening indications

Adverse Effects:
- Cardiovascular
  - Tachycardia
  - Hypertension
- Respiratory
  - Hyperventilation
- Neurological
  - Blurred vision
  - Dizziness/ drowsiness
  - Diplopia/ impaired accommodation
  - Headache
  - Muscular weakness
- Gastrointestinal
  - Nausea/vomiting
  - Dry mouth
- Other
  - Pain at the injection site

Dosage Information:
- Mild – 1 IM injection in combination with Atropine (Mark 1 or Duodote Injector)
- Moderate – 1 IM injection in combination with Atropine, repeat X 1 in 10 min (Mark 1 or Duodote Injector)
- Severe - 3 IM injections in combination with Atropine in rapid succession (Mark 1 or Duodote Injector)

Route of administration: IM

Onset: 10 – 20 minutes to reach peak

Duration: Short acting: half-life of approximately 1 – 2 hours

Notes:
- Medical personnel should not rely solely upon the DuoDote to provide complete protection and should wear protective garments and specifically designed masks. When assisting evacuated victims of nerve agents take care to avoid further exposure to contamination from the victim's clothing.
- Pralidoxime is less effective in relieving depression of the respiratory center so atropine is always required concomitantly to block the effect of accumulated acetylcholine at this site.
- The dose of pralidoxime should be reduced in those with renal insufficiency as pralidoxime is excreted the urine and decrease in renal function will result in increased blood levels of the drug.
| Generic Name: |  |
| Trade Name: |  |
| Classification: |  |
| Actions: |  |
| Indications: |  |
| Contraindications: |  |
| Adverse Effects: |  |
| Cardiovascular |  |
| Neurological |  |
| Gastrointestinal |  |
| Dosage Information: |  |
| Adults: |  |
| Pediatrics: |  |
| Route of administration: |  |
| Onset: |  |
| Duration: |  |
| Notes: |  |

Grading Note: all entries are 1 point per line, 80% passing score required