ACTIVATED CHARCOAL

Classification: Absorbent

Action: Binds and absorbs ingested toxins

Indications: Poisoning

Contraindications: None

Side Effects: Nausea, vomiting, abdominal cramping & bloating, constipation

Dosage: 1 gram/kg

Precautions: Altered mental status
Ingestion of caustics or hydrocarbons
Inability to swallow
ADENOSINE
(Adenocard)

Classification: Antiarrhythmic

Actions: Decreases conduction of electrical impulses through the AV node & interrupts AV re-entrainment pathways in PSVT, referred to as chemical cardioversion.

Indications: PSVT refractory to vagal maneuvers

Contraindications: Second or Third Degree Heart Block, Sick Sinus Syndrome or Hypersensitivity to the drug.

Side Effects: Facial flushing, headache, shortness of breath, dizziness & nausea.

Dosage: 6 mg, followed by 12 mg x 2 if necessary, should be given by a rapid IV bolus over 1-2 sec. immediately followed by a saline flush.

Precautions: Use with caution in patients with Asthma, typically causes arrhythmias at the time of cardioversion.
ALBUTEROL  
(Proventil, Ventolin)

Classification: Sympathetic Agonist

Actions: Causes bronchodilation

Indications: Bronchial Asthma  
Bronchospasm associated with COPD

Contraindications: Hypersensitivity to drug

Side Effects: Palpitations, anxiety, dizziness, headache, nervousness, tremor, hypertension, arrhythmias, chest pain, nausea & vomiting

Dosage: 2.5mg via Nebulizer

Precautions: Use caution when administering to elderly and patients with a history of Cardiovascular disease & Hypertension. Monitor vital signs closely & auscultate lungs before & after treatments.
Amiodarone
(Cordarone)

Classification: Antidysrhythmic

Actions: Prolongs the duration of the action potential and refractory period. Acts on all cardiac tissues. Blocks sympathetic stimulation.

Indications: Life threatening ventricular and supraventricular dysrhythmias.

Contraindications: Severe SA node dysfunction, second and third degree block and hemodynamically significant bradycardia.

Side Effects: Nausea, hypotension, anorexia, malaise, fatigue, tremors, pulmonary toxicity, ventricular ectopic beats.

Dosage: Cardiac arrest from VF and VT: 300mg
Recurrent VF or VT: 150mg
Maximum dose: 2.2 grams over 24 hrs
Route: IV

Precautions: Heart Failure
ASPIRIN

Classification: Analgesic, Antiinflammatory, Antipyretic, Antiplatelet

Actions: Blocks pain impulses in the CNS, Decreases platelet aggregation

Indications: Acute coronary syndrome, Unstable angina

Contraindications: Hypersensitivity to salicylates, Bleeding disorders, Hemorrhagic stroke, Children with flu-like symptoms, Asthmatic conditions

Side Effects: Stomach irritation, heartburn or indigestion, nausea and vomiting, slight increase in bleeding time

Dosage: 162 mg (2 chewable baby aspirin)
ATROPINE SULFATE

Classification: Parasympathetic Blocker

Actions: Increases Heart Rate in symptomatic Bradycardias by blocking Acetylcholine.

Indications: Symptomatic Bradycardias, Asystole, Organophosphate Poisoning

Contraindications: None in emergency setting

Side Effects: Blurred vision, dilated pupils, dry mouth, tachycardia, drowsiness & confusion

Dosage:
- Bradycardia - 0.5 mg IV repeated every 3 - 5 min to a max. of 0.04 mg/kg
- Asystole - 1 mg IV or ET (ET dose 2 - 2.5 x IV dose) to a max. of 0.04 mg/kg
- Organophosphate Poisoning - As per Medical Control

Precautions: May worsen Bradycardias associated with Second Degree Mobitz Type II & Third Degree Heart Block
ATROVENT

Classification: Anticholinergic

Actions: Bronchodilation

Indications: Asthma & bronchospasm associated with COPD

Contraindications: Hypersensitivity to the drug

Side Effects: Palpitations, Anxiety, dizziness, headache, nervousness, rash, nausea & vomiting

Dosage: 500mcg in 2.5 ml

Precautions: Use caution when administering to elderly and patients with a history of Cardiovascular disease and Hypertension. Monitor vital signs closely and auscultate lungs before and after treatments.
BRETYLIUM TOSYLATE
(Bretylol)

Classification: Antiarrhythmic

Actions: Appears to elevate V-Fib threshold sometimes converting V - Fib or V-Tach to a Supraventricular rhythm, Chemical Defibrillator

Indications: V-Fib & V-Tach refractory to Lidocaine

Contraindications: None when treating life threatening Ventricular Arrhythmias

Side Effects: Dizziness, syncope, seizures, hypotension, hypertension, angina, nausea & vomiting

Dosage: Initial dose - 5 mg/kg IV followed by 10 mg/kg doses every 5 mins. up to a max. of 30 mg/kg if arrhythmia persists

Precautions: Keep patient supine due to possible occurrence of postural hypotension, may worsen arrhythmias due to Digitalis Toxicity
DEXTROSE  
(D50, D25)

Classification: Carbohydrate

Actions: Supplies supplemental glucose in cases of Hypoglycemia

Indications: Hypoglycemia
Coma of unknown origin

Contraindications: None when administered for Hypoglycemia, should be used with caution in patients with increased intracranial pressure, can worsen cerebral edema

Side Effects: Can cause tissue necrosis at the injection site

Dosage: Adult - 25 gms. D50 IV (50 ml)
Pediatric - 4 ml/kg D25 IV

Precautions: Test for blood glucose level before administration of Dextrose, use large veins to prevent infiltration
DIAZEPAM
(Valium)

Classification: Anti-Convulsant / Sedative

Actions: Supresses the spread of seizure activity

Indications: Major Motor Seizures
Status Epilepticus

Contraindications: Hypersensitivity to drug

Side Effects: Hypotension, drowsiness, headache, amnesia, respiratory depression, blurred vision, nausea & vomiting

Dosage: Adult - 5 mg IV or IM
Pediatric - .2 mg/kg
May be repeated once

Precautions: Should be administered slowly IV (not faster than 1 ml/min) into a large vein to reduce irritation. Can cause an additive effect if given with other depressants or alcohol. Monitor patient for respiratory depression. Flumazenil should be available for use as an antidote.
DIPHENHYDRAMINE
( Benadryl )

Classification: Antihistamine

Actions: Inhibits histamine release to limit Bronchoconstriction & Peripheral Vasodilation

Indications: Anaphylaxis
Allergic Reactions

Contraindications: Lower respiratory diseases such as Asthma

Side Effects: Hypotension, headache, palpitations, tachycardia, sedation, drowsiness & disturbed coordination

Dosage: Adult - 25 - 50 mg IV or IM
Pediatric - 1 mg/kg to 25 mg

Precautions: Sedative effects can be potentiated by depressants, narcotics, alcohol & other antihistamines
DOPAMINE
Intropin

Class: Sympathetic Agonist

Actions: Chemically related to Epinephrine & Norepinephrine, increases blood pressure by acting on alpha & beta 1 receptors. Effects on beta 1 receptors causes a positive inotropic effect on the heart, effects on the alpha receptors causes peripheral vasoconstriction. It maintains renal & mesenteric blood flow due to it's effects on the dopaminergic receptors. It will increase both systolic blood pressure & pulse pressure.

Indications: Hemodynamically significant hypotension not related to hypovolemia
Cardiogenic Shock

Contraindications: Hypovolemic shock (unless fluid resuscitation is well under way)
Pheochromocytoma (Adrenal gland tumor)

Side Effects: Nervousness, headache, dysrhythmias, palpitations, chest pain, dyspnea, nausea & vomiting

Dosage: Prepare a drip by adding 800 mg to 500 ml of D5W or 400 mg to 250 ml of D5W resulting in a concentration of 1600 mcg/ml. Effects are dose dependent, 2 - 5 mcg/kg/min increases renal blood flow & urine output, 5 - 20 mcg/kg/min increases cardiac output & blood pressure.
Precautions: Do not use in the presence of tachyarrhythmias or V-Fib.
Can be deactivated by alkaline solutions.
Dosage should be reduced for patients taking monoamine oxidase inhibitors.
May cause hypotension when used with Dilantin.
EPINEPHRINE 1:1,000

Classification: Sympathetic Agonist

Actions: Increased Heart rate, force, automaticity & electrical activity, increased systemic vascular resistance, Bronchodilation

Indications: Asthma, Acute Respiratory Distress, Anaphylaxis, Pediatric Cardiac Arrest

Contraindications: Patients with underlying Cardiovascular disease or Hypertension, patients in profound shock from anaphylaxis may require Epi 1:10,000 IV since vasoconstriction will cause a delayed absorption via the subcutaneous route

Side Effects: Palpitations, anxiety, tremulousness, headache, dizziness, nausea, vomiting, increases myocardial oxygen demand

Dosage: .3 - .5 mg Subcutaneously
Pediatric: Per Protocol
Precautions: Monitor vital signs carefully, protect from light, can be deactivated by alkaline solutions, effects can be intensified in patients taking antidepressants.
EPINEPHRINE 1:10,000

Classification: Sympathetic Agonist

Actions: Increased Heart rate, force, automaticity & electrical activity, increased systemic vascular resistance

Indications: Asystole, V-Fib, Pulseless V-Tach, PEA, severe Anaphylaxis

Contraindications: Should only be used for patients requiring extensive Cardiopulmonary resuscitative efforts

Side Effects: Palpitations, anxiety, tremulousness, headache, dizziness, nausea, vomiting, increases myocardial oxygen demand

Dosage: Adults: Asystole, V-Fib, Pulseless V-Tach & PEA - 1 mg every 3 - 5 min. IV, ET dose 2 mg every 3-5 min. Severe Anaphylaxis - .5 - 1 mg IV, 2 mg ET Pediatric: As per Protocol

Precautions: Only effective when Myocardium
is adequately oxygenated, protect from light, can be deactivated by alkaline solutions, IV lines need to be flushed between administration of Epi & Sodium Bicarb, effects can be intensified in patients taking antidepressants.
FUROSEMIDE  
( Lasix)

Classification: Diuretic

Actions: Potent diuretic, inhibits sodium & chloride reabsorption in the Kidneys & causes venous dilation

Indications: Congestive Heart Failure  
Pulmonary Edema

Contraindications: Pregnancy

Side Effects: Hypotension, ECG changes, chest pain, dry mouth, hypochloremia, hypokalemia, hyponatremia & hyperglycemia

Dosage: 40 - 80 mg slow IV push

Precautions: May cause dehydration & electrolyte depletion
GLUCAGON

Classification: Antihypoglycemic

Actions: Increases blood glucose levels

Indications: Hypoglycemia when an IV cannot be established

Contraindications: Hypersensitivity to drug

Side Effects: Hypotension, dizziness, headache, nausea & vomiting

Dosage: Adult - 1 mg IM
         Pediatric - .5 - 1 mg IM
         Must be reconstituted before administration

Precautions: Only effective if there is a sufficient stores of Glycogen within the Liver, administer with caution in patients with Renal or Cardiovascular disease
## HALOPERIDOL (Haldol)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Antipsychotic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actions</td>
<td>Alters mood &amp; behavior</td>
</tr>
<tr>
<td>Indications</td>
<td>Combative or violent patients</td>
</tr>
<tr>
<td>Contrindications</td>
<td>CNS depression, coma, pregnancy, severe liver or cardiac disease, hypersensitivity to drug</td>
</tr>
<tr>
<td>Side Effects</td>
<td>Hypotension, orthostatic hypotension, nausea and vomiting</td>
</tr>
<tr>
<td>Dosage</td>
<td>2-5 mg IM</td>
</tr>
<tr>
<td>Precautions</td>
<td>Use with caution in patients with seizure disorders, Parkinson's disease and those with alcohol dependence. Can cause hypotension if used with nitrates or antihypertensive agents. Phenobarbital can decrease effectiveness.</td>
</tr>
</tbody>
</table>
LIDOCAINE

Classification: Antiarrhythmic

Actions: Suppresses Ventricular Ectopic Activity & increases fibrillation threshold in AMI

Indications: V-Tach, V-Fib & Malignant PVCs

Contraindications: Second degree Mobitz II & Third degree Heart Block

Side Effects: Drowsiness, seizures, confusion, hypotension, bradycardia, heart blocks, nausea, vomiting, respiratory & cardiac arrest

Dosage: Adult - 1 - 1.5 mg/kg IV or ET may be repeated at above dose for V-Fib or Pulseless V-Tach, & at .5 - .75 mg/kg for Ventricular Ectopy up to a max. of 3 mg/kg
Pediatric - 1 mg/kg
Once the arrhythmia has been suppressed a Lidocain Drip should be initiated at 2 - 4 mg/min

Precautions: CNS depression may occur when the dosage exceeds 300 mg/hr
LORAZEPAM
(Ativan)

Classification: Anticonvulsant

Actions: Cessation of seizure activity, relieves anxiety, skeletal muscle relaxant & induction of amnesia

Indications: Seizures, anxiety

Contraindications: Shock, coma, respiratory depression, hypotension, use of CNS depressants or alcohol, glaucoma

Side Effects: Respiratory depression, apnea, hypotension, dizziness, ataxia, fatigue, confusion & drowsiness

Dosage: 2-4 mg IV or IM
Pediatric - .1 mg/kg

Precautions: Administer IV slowly, monitor respirations, pulse & B/P, causes venous irritation, use large vein. Use with caution in patients with hepatic dysfunction, renal insufficiency or history of drug addiction. Must be refrigerated.
MAGNESIUM SULFATE

Classification: Electrolyte

Actions: Affects electrical myocardial stability

Indications: Cardiac Arrest

Contraindications: None for Cardiac Arrest

Side Effects: Hypotension, hyporeflexia, diaphoresis & drowsiness

Dosage: Adult - 2 g/10ml/1min
Methylprednisolone
(Solu-Medrol)

Classification: Synthetic Corticosteroid

Actions: Supresses acute & chronic inflammation, potentiates beta relaxation of smooth muscle, suppresses the immune system by binding to intracellular corticosteroid receptors.

Indications: Acute exacerbation of Asthma & COPD, Respiratory distress associated with anaphylaxis, Other allergic reactions, Spinal cord injury

Contraindications: Hypersensitivity to adrenocorticoids

Side Effects: None associated with a single dose

Dosage: Adult dose 100-250 mg, Pediatric 1-2mg/kg (Max. dose 125 mg), Spinal Cord Injury - 30mg/kg, Must be reconstituted before use.

Precautions: CHF, renal disease, hypertension, diabetes, & myasthenia gravis
METOCLOPRAMIDE  
(Reglan)

Classification :  Antiemetic  
Action : Stimulates motility of upper GI tract, promotes stomach emptying, reduces reflux.  
Indications : Nausea, vomiting and reflux  
Contraindications : GI bleeding, bowel obstruction or perforation  
Side Effects : Drowsiness, fatigue, sedation, dizziness, depression, hypertension, tachycardia, bradycardia and diarrhea.  
Dosage : 10 mg IV slowly or IM  
Precautions : Effects can be antagonized by anticholinergic drugs (ex. Atropine). CNS effects are increased when administered with narcotics, sedatives, hypnotics and alcohol. Hypotension can occur if patient takes MAOIs (ex. Marplan, Nardil, Parnate)
**METOPROLOL**  
(Lopressor)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Selective Beta - Blocker</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td>Reduces heart rate, SBP and cardiac output. Inhibits tachycardia following AMI.</td>
</tr>
<tr>
<td>Indications</td>
<td>Patients with suspected or definite AMI who are hemodynamically stable.</td>
</tr>
<tr>
<td>Contraindications</td>
<td>Bradycardia, SBP &lt; 100, CHF, heart block, shock or history of Asthma</td>
</tr>
<tr>
<td>Side Effects</td>
<td>Bradycardia, hypotension, lethargy, CHF, dyspnea, wheezing and weakness</td>
</tr>
<tr>
<td>Dosage</td>
<td>5mg IV slowly, if vital signs remain stable may be repeated x 2 every 5 minutes</td>
</tr>
<tr>
<td>Precautions</td>
<td>Vital signs and EKG must be monitored continuously during administration. Be alert for signs and symptoms of CHF, bradycardia, shock, heart block or bronchospasm.</td>
</tr>
</tbody>
</table>
MORPHINE SULFATE

Classification: Narcotic analgesic

Actions: Provides analgesia & sedation, increases peripheral venous capacitance & decrease venous return

Indications: Severe pain
Pulmonary edema

Contraindications: Hypotension, hypovolemia, head injury, abdominal pain, hypersensitivity to drug

Side Effects: Nausea, vomiting, abdominal cramps, blurred vision, constricted pupils, altered mental status, headache & respiratory depression

Dosage: Adult - 2 mg IV, may be repeated every 5 min up to a max. of 10 mg
Pediatric - .1 mg/kg IV (max dose 2 mg), may be repeated every 5 min up to a max. of 10 mg

Precautions: Classified as a Schedule II drug requiring special handling, causes severe respiratory depression at
high doses, Nalaxone should be readily available whenever Morphine is administered, CNS depression can be enhanced when administered with antihistamines, antiemetics, sedatives, hypnotics, barbituates & alcohol
NALOXONE
(Narcan)

Classification: Narcotic antagonist

Actions: Can reverse respiratory depression due to narcotic overdose

Indications: Narcotic overdose
Coma unknown origin

Contraindications: Hypersensitivity to drug

Side Effects: Hypotension, hypertension, ventricular arrhythmia, nausea & vomiting

Dodge: Adult - 2 mg IV, IM, ET
Pediatric - .1 mg/kg IV, IM, ET to a max. of 2 mg

Precautions: May cause withdrawal-type effects if patient is physically dependent on narcotics
NITROGLYCERIN

Classification: Nitrate

Actions: Smooth muscle relaxant

Indications: Chest pain, Pulmonary Edema

Contraindications: Hypotension, shock, increased intracranial pressure

Side Effects: Headache, dizziness, weakness, tachycardia, hypotension, orthostasis, skin rash, dry mouth, nausea & vomiting

Dosage: .4 mg SL, may be repeated x 2 if B/P remains above 100 systolic

Precautions: Protect from air & light, monitor B/P closely
SODIUM BICARBONATE

Classification: Alkalinizing agent

Actions: Buffers metabolic acidosis

Indications: Cardiac arrest

Contraindications: None when used for arrest

Side Effects: Metabolic alkalosis

Dosage: 1 mEq/kg IV

Precautions: Should not be administered with Calcium Chloride, can deactivate catecholamines & vasopressors
SYRUP of IPECAC

Classification: Emetic

Actions: Causes vomiting

Indications: Poisoning
Overdose

Contraindications: Decreased level of consciousness,
ingestion of a caustic, petroleum
product or antiemetic

Side Effects: Arrhythmias, hypotension, diarrhea,
depression & bleeding from esophageal varices

Dosage: Adult - 30 ml PO followed by water
Pediatric - 15 ml followed by water

Precautions: Monitor patient's airway during
& following emesis, use with caution
in patients with heart disease
THIAMINE

Classification: Vitamin

Actions: Assists with the metabolism of glucose

Indications: Coma of unknown origin

Contraindications: None in emergency setting

Side Effects: Hypotension, dyspnea & respiratory failure

Dosage: Adult - 100 mg IV

Precautions: A few cases of hypersensitivity have been noted
**TORADOL**  
(Ketorolac)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Analgesic, Antiinflammatory, Antipyretic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indications</td>
<td>Pain relief</td>
</tr>
<tr>
<td>Contraindications</td>
<td>Allergy to aspirin or other antiinflammatory drugs, bleeding disorders, renal failure, peptic ulcer disease &amp; hypersensitivity to drug</td>
</tr>
<tr>
<td>Side Effects</td>
<td>Anaphylaxis, headache, bleeding disorders &amp; deep sedation</td>
</tr>
</tbody>
</table>
| Dosage               | 30 mg IV, 60 mg IM  
                          half dose for patients over 65  
                          Not recommended for pediatric patients |