

# **PRE-HOSPITAL PATIENT CARE PROTOCOL**

## **MEDICATION REFERENCE**

### **Section VI**

**Rappahannock EMS Council  
435 Hunter Street  
Fredericksburg, VA 22401**

**BASIC LIFE SUPPORT/ADVANCED LIFE SUPPORT  
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## **1.0 Adenosine (Adenocard)**

### **1.1 Mechanism of Action**

The primary effect of adenosine is to slow conduction through the AV node, thereby terminating reentry tachydysrhythmias such as SVT, and restoring normal sinus rhythm.

### **1.2 Indications**

Adenosine is regarded as the drug of choice for treatment of hemodynamically stable SVT.

### **1.3 Contraindications**

Second or third degree block

### **1.4 Precautions**

1. Adenosine may not correct atrial fibrillation, atrial flutter, or ventricular tachycardia
2. Higher doses of adenosine are likely to be needed for patients receiving theophylline or using large quantities of caffeine
3. Lower doses (3 mg or less) of adenosine should be used in patients receiving dipyridamole (Persantin)
4. Extra caution (and lower than usual doses) should be used in patients receiving carbamazepine (Tegretol), which could potentiate AV block of adenosine

### **1.5 Side Effects**

1. Transient facial flushing, coughing, dyspnea
2. Chest discomfort (may simulate angina)
3. Marked slowing of the heart rate (transient asystole may occur)

## **2.0 Albuterol (Proventil)**

### **2.1 Mechanism of Action**

Administration by inhalation allows for preferential affinity for b2 adrenergic receptors, relaxing bronchial smooth muscle, and decreasing airway resistance; suppresses release of leukotrienes and histamine from mast cells in lung tissue.

### **2.2 Indications**

Bronchial asthma or reversible bronchospasm with chronic bronchitis and cases of emphysema.

### **2.3 Contraindications**

1. Hypersensitivity to drug
2. Tachydysrhythmias

### **2.4 Precautions**

Patients with underlying coronary artery disease or preexisting arrhythmias are at much greater risk of myocardial ischemia and exaggerated arrhythmias. Use Albuterol with caution in patients receiving MAO inhibitors (Deprenyl, Seliginine, Eldepryl, Parnate, and Iproniazid) or TCAs (Amitriptyline, Desipramine). May be ineffective in patients taking beta-blockers.

### **2.5 Side Effects**

Palpitations, skeletal muscle tremor, tachycardia, anxiety, nausea, dizziness. Hypokalemia in patients using cardiac glycosides (Digoxin) and diuretics.

## **3.0 Amiodarone (Cordarone)**

### **3.1 Mechanism of Action**

Amiodarone blocks sodium channels at rapid pacing frequencies and exerts a non-competitive antisympathetic action. One of its main effects, with prolonged administration, is to lengthen the cardiac action potential. In addition, it produces a negative chronotropic effect in nodal tissues. Amiodarone also blocks potassium channels, which contributes to slowing of conduction and prolongation of refractoriness. Its vasodilatory action can decrease cardiac workload and consequently myocardial oxygen consumption.

### **3.2 Indications**

Indicated for initiation of treatment and prophylaxis of frequently recurring ventricular fibrillation and hemodynamically unstable ventricular tachycardia in patient refractory to other therapy. Amiodarone may also be used to treat supraventricular tachycardia.

### **3.3 Contraindications**

Contraindicated in patients with known hypersensitivity to Amiodarone, or in patients with cardiogenic shock, marked sinus bradycardia, and second – or third – degree AV block.

### **3.4 Precautions**

May worsen existing or precipitate new dysrhythmias, including torsades de pointes, and VF. Use with beta-blocking agents could increase risk of hypotension and bradycardia. Amiodarone inhibits atrioventricular conduction and decreases myocardial contractility, increasing the risk of AV block with Verapamil or Diltiazem or of hypotension with any calcium channel blocker. Use with caution in pregnancy and with nursing mothers.

### **3.5 Side Effects**

Adverse reactions include fever, bradycardia, CHF, cardiac arrest, hypotension, ventricular tachycardia, nausea, and abnormal liver function.

## **4.0 Aspirin (Acetylsalicylic Acid)**

### **4.1 Mechanism of Action**

Aspirin is an anti-inflammatory and a platelet function inhibitor. It has both analgesic and antipyretic properties.

### **4.2 Indications**

1. Chest pain consistent with AMI.
2. Diving Emergencies / Barotrauma

### **4.3 Contraindications**

1. Allergy or hypersensitivity to aspirin
2. Active ulcer disease
3. Asthma

### **4.4 Precautions**

Use with caution in patients with bleeding disorders. Anticoagulants increase risk of bleeding.

### **4.5 Side Effects**

1. Tinnitus
2. Nausea
3. GI distress
4. Dyspepsia
5. GI bleeding

## **5.0 Atropine Sulfate (Atropine)**

### **5.1 Mechanism of Action**

Atropine produces its antispasmodic, antisecretory, and cardiovascular effects by blockage of acetylcholine at cholinergic receptor sites. Atropine inhibits effects of the parasympathetic nervous system. Positive chronotropic, with little inotropic, effects.

### **5.2 Indications**

1. Symptomatic bradycardia
2. PEA (with bradycardia)
3. Asystole
4. Organophosphate poisoning

### **5.3 Contraindications**

None in the emergency setting.

### **5.4 Precautions**

American Heart Association guidelines suggest atropine for treatment of patients with acute MI, and second or third degree (Mobitz type II) AV block. Should be used with caution. Atropine is ineffective for heart transplant patients.

### **5.5 Side Effects**

May precipitate tachydysrhythmias, dysphasia, erythema, flushing, headache, hypotension, mydriasis, vertigo, and xerostomia.

## **6.0 Atrovent (Ipratropium Bromide)**

### **6.1 Mechanism of Action**

Ipratropium bromide is an anticholinergic (parasympatholytic) agent, which causes localized bronchodilation.

### **6.2 Indications**

Ipratropium bromide is indicated for relief of bronchospasm associated with asthma and chronic obstructive pulmonary disease, including chronic bronchitis and emphysema that is unresponsive to treatment with Albuterol alone.

### **6.3 Contraindications**

Hypersensitivity to atropine or its derivatives. Allergies to soy products and/or peanuts, and mercury allergy

### **6.4 Precautions**

Not indicated for the initial treatment of acute episodes of bronchospasm where rapid response is required.

### **6.5 Side Effects**

Respiratory:	Cough, exacerbation of symptoms.
CNS:	Nervousness, dizziness, headache.
Cardiovascular:	Palpitations.
GI:	Nausea, vomiting, GI distress.
Other:	Tremor, dry mouth, blurred vision.



## **7.0 Calcium Chloride**

### **7.1 Indications**

Calcium chloride should be administered as an antidote to those patients receiving magnesium sulfate when the side effects, especially bradycardia or other arrhythmias, respiratory depression, hypotension or anaphylactic symptoms, become severe. Crush Syndrome; Calcium Channel Blocker Overdose Poisoning.

### **7.2 Contraindications**

When used to treat magnesium sulfate overdose, none. Standard contraindications for calcium chloride include VF, digitalis toxicity, and hypercalcemia.

### **7.3 Precautions**

NOT compatible with sodium bicarbonate – do not administer in the same IV line.

### **7.4 Side Effects**

1. Bradycardia
2. Peripheral vasodilatation
3. Local tissue necrosis with IV infiltration
4. Hypotension
5. Metallic taste

## **8.0 Dextrose (D50) (D25) (D10)**

### **8.1 Mechanism of Action**

Increases circulating blood sugar levels.

### **8.2 Indications**

Hypoglycemia. Used in pediatrics > 8 years old. Crush Syndrome; Cold Weather Emergencies.

### **8.3 Contraindications**

1. May be detrimental to patients with cerebral ischemia, causing cerebral edema.
2. May precipitate severe neurological symptoms of Wernicke's encephalopathy in alcoholics.

### **8.4 Precautions**

Try to obtain base line glucose level. Ensure patent IV site prior to administration. Flush vein after dose.

### **8.5 Side Effects**

Tissue necrosis, if infiltration occurs.

## **9.0 Diazepam (Valium)**

### **9.1 Mechanism of Action**

Diazepam is an anticonvulsant and anxiolytic agent.

### **9.2 Indications**

1. Major motor seizures
2. Status Epilepticus
3. Skeletal muscle relaxant
4. Premedication prior to electrical therapy
5. Acute anxiety stress

### **9.3 Contraindications**

Hypersensitivity to diazepam.

### **9.4 Precautions**

1. Short-acting drug, seizures may reoccur
2. May decrease respirations
3. May lower blood pressure
4. Use caution in elderly patients
5. Use ½ dose in patients with liver disease or failure
6. Sedation, monitor respiratory efforts

### **9.5 Side Effects**

1. Respiratory depression
2. Drowsiness
3. Pain or burning at the IV site
4. Apnea
5. Ataxia
6. Hypotension
7. Reflex tachycardia
8. Transient amnesia

## **10.0 Diltiazem HCL (Cardizem)**

### **10.1 Mechanism of Action**

Class IV antiarrhythmic agent. Decreases automaticity in the senatorial (SA) node. Prolongs refractoriness in the atrioventricular (AV) node. Inhibits the influx of extracellular calcium ions to myocardial and vascular smooth muscle cells; decreases cardiac contractility and inhibits constriction of vascular smooth muscle. In patients with PSVT, Diltiazem interrupts reentry in the AV node and restores normal sinus rhythm. Decreases ventricular responses rate in atrial fibrillation and flutter.

### **10.2 Indications**

1. Atrial fibrillation with a ventricular response of 120 beats per minute or greater
2. PSVT refractory to vagal maneuvers and adenosine

### **10.3 Contraindications**

1. Hypotension
2. Bradycardia
3. Patients who present in CHF
4. History of Wolff-Parkinson-White (WPW) Syndrome

### **10.4 Precautions**

Calcium channel blockers such as Diltiazem should be used with caution in patient who receive long-term beta blocker therapy

### **10.5 Side Effects**

1. Hypotension
2. Bradycardia
3. Worsening CHF
4. 2<sup>nd</sup> or 3<sup>rd</sup> degree AV block
5. Transient PVCs

## **11.0 Diphenhydramine (Benadryl)**

### **11.1 Mechanism of Action**

Blocks both H<sup>1</sup> and H<sup>2</sup> histamine receptors.

### **11.2 Indications**

1. Allergic reactions
2. Urticaria (hives)
3. Anaphylaxis
4. Extrapyramidal symptoms (EPS) such as tremors and gait abnormalities, and dystonic reactions such as dysphagia, are caused by phenothiazines like chlorpromazine, thioridazine, haloperidol, or perphenazine

### **11.3 Contraindications**

1. Angle-closure glaucoma
2. Should not be used in the management of asthma

### **11.4 Precautions**

1. Concurrent ingestion of alcohol or other CNS depressants can produce a synergistic effect that could impair motor skills.

### **11.5 Side Effects**

1. Sedation
2. Disturbed coordination
3. Diplopia (double vision)
4. Hypertension
5. Headache
6. Drowsiness
7. Dizziness
8. Blurred vision
9. Tremors
10. Palpitations
11. Nausea

## **12.0 Dopamine (Dobutrex)**

### **12.1 Mechanism of Action**

Sympathomimetic which acts directly on alpha and beta adrenergic receptors? It has a positive inotropic effect.

### **12.2 Indications**

1. To increase cardiac output in cardiogenic shock
2. Second line therapy in bradycardia
3. Second line therapy in hemorrhagic shock

### **12.3 Contraindications**

1. Insure patient has been treated with blood before using in hypovolemia
2. Do not use in the presence of tachydysrhythmias or ventricular fibrillation

### **12.4 Precautions**

MAO inhibitors will increase alpha effects.

### **12.5 Side Effects**

1. Ectopic beats, tachycardia, palpitations
2. Nausea, vomiting
3. Angina
4. Headache
5. Localized tissue necrosis if IV leaks

## **13.0 Epinephrine**

### **13.1 Mechanism of Action**

Potent catecholamine with both alpha and beta properties. Increase myocardial and cerebral blood flow during CPR. Beta effects tend to be more profound and include increased contractile force, heart rate, and automaticity.

### **13.2 Indications**

1. Severe, systematic allergic reaction and anaphylaxis
2. Dyspnea such as asthma (patients under 50 years of age) and COPD exacerbation
3. Adult and Pediatric cardiac arrest - Ventricular fibrillation, Asystole, PEA
4. Severe or Profound Hypotension related to Cardiogenic Shock (given as drip)

### **13.3 Contraindications**

1. None with cardiac arrest or anaphylaxis in the pre-hospital setting
2. Patient with coronary artery disease, use with caution
3. Patient is over 50 years of age, use with caution
4. Patient has a heart rate > 120, use with caution

### **13.4 Precautions**

1. May precipitate angina or myocardial infarction in cardiac patients. Wheezing in elderly patients may be pulmonary edema or pulmonary embolism. Protect from light and flush line between sodium bicarbonate and epinephrine

### **13.5 Side Effects**

1. Anxiety
2. Tremors
3. Palpitations
4. Tachycardia
5. Headache

## **14.0 Etomidate (Amidate)**

### **14.1 Mechanism of Action**

A very rapid-acting, short-duration, non-barbiturate hypnotic with no analgesic properties. Onset of action of up to 1 minute, and duration from 3-5 minutes. Etomidate lowers cerebral blood flow and oxygen consumption, and has minimal cardiovascular and respiratory effects.

### **14.2 Indications**

1. Sedation (pre-medication)

### **14.3 Contraindications**

1. Known hypersensitivity
2. Adrenal insufficiency

### **14.4 Precautions**

Use with caution in hypotensive patients or those with severe asthma. Not to be given in prolonged situations with multiple high doses; no more than two or three IV/IO bolus only.



## **15.0 Fentanyl Citrate (Sublimaze)**

### **15.1 Mechanism of Action**

When given, Fentanyl is similar to Morphine and Meperidine in its respiratory effects except that respiration of health individuals returns to normal more quickly after Fentanyl. Exhibits little hypnotic activity, and histamine release rarely occurs.

### **15.2 Indications**

For relief of moderate to severe pain.

### **15.3 Contraindications**

Patients with known hypersensitivity to Hydromorphone, intracranial lesions associated with increased ICP, depressed ventilatory function (COPD, cor pulmonale, emphysema, kyphoscoliosis and status asthmaticus).

### **15.4 Side Effects**

CNS: Sedation, drowsiness, mental clouding, lethargy, impairment of mental and physical performance, anxiety, fear, dysphoria, dizziness, psychic dependence, and mood changes.

CV: Circulatory depression, peripheral circulatory collapse and cardiac arrest have occurred following rapid administration. Orthostatic hypotension and fainting have occurred if a patient stands up following an injection.

G.I.: Nausea and vomiting, constipation.

Resp: Respiratory depression.

### **15.5 Warnings**

The concomitant use of other CNS depressants, including other opioids, sedatives or hypnotics, general anesthetics, phenothiazines, tranquilizers, skeletal muscle relaxants, sedating antihistamines, potent inhibitors of P450 (e.g., erythromycin, ketoconazole, and certain protease inhibitors). Alcoholic beverages may produce increased depressant effects. Hypoventilation, hypotension and profound sedation may occur.

## **16.0 Furosemide (Lasix)**

### **16.1 Mechanism of Action**

Potent diuretic that inhibits sodium and chloride reabsorption in the kidneys. Causes venous dilation.

### **16.2 Indications**

1. Congestive heart failure
2. Pulmonary edema
3. Hypertensive crisis

### **16.3 Contraindications**

Patients who are allergic to sulfonamides or thiazides.

### **16.4 Precautions**

1. Should be limited to life-threatening situations in pregnant patients
2. Use with caution in patients in end-stage renal disease

### **16.5 Side Effects**

1. Potassium depletion with accompanying dysrhythmias
2. Vertigo
3. Visual/auditory disturbances
4. Nausea and vomiting
5. Dehydration and electrolyte depletion can result

## **17.0 Glucagon (GlucaGen)**

### **17.1 Mechanism of Action**

Releases stored glycogen from the liver, converting it to glucose.

### **17.2 Indications**

Hypoglycemia. Treatment of toxic effects of calcium channel blockers or beta-blockers.

### **17.3 Contraindications**

Known hypersensitivity.

### **17.4 Precautions**

Follow with carbohydrates such as prompt meal, orange juice, or D50 as soon as the patient is alert, or an IV is established. Mix only with sterile water. Use with caution in patients with liver disease or failure; patients may have little glycogen stored.

## **18.0 Ketamine Hcl (Ketanest)**

### **18.1 Mechanism of Action**

Binds to opioid receptors, as well as monoaminergic pathways and voltage calcium channels.

### **18.2 Indications**

1. An induction agent to precipitate airway management, such as exacerbated COPD or Asthma.
2. Chemical Extrication or sedation.

### **18.3 Contraindications**

1. Hypersensitivity
2. Severe Hypertensive Crisis

### **18.4 Side Effects**

1. May increase the effects of other sedatives, such as benzodiazepines
2. Confusion
3. Hallucinations
4. Hypotension, if combined with other sedatives
5. Bradycardia, if combined with other sedatives.

## **19.0 Lidocaine 2% (Xylocaine)**

### **19.1 Mechanism of Action**

The antidysrhythmic effect of Lidocaine is attributed to its ability to decrease automaticity in ventricular myocardium, and slows conduction velocity in reentrant pathways of ischemic tissue. The drug also appears to raise fibrillation threshold.

### **19.2 Indications**

1. Ventricular fibrillation
2. Ventricular ectopy
3. Ventricular tachycardia
4. Wide complex tachycardia (unknown origin)

### **19.3 Contraindications**

1. Second degree type II and third degree heart blocks
2. PVCs caused by bradycardia
3. Idioventricular rhythm
4. Sensitivity to Lidocaine or other “caine” medications

### **19.4 Precautions**

First, treat the cause of the PVCs. Depresses the CNS at doses above 3 mg/kg.

### **19.5 Side Effects**

Hypotension  
Conduction disturbances  
Bradycardia  
Tremors  
Confusion  
Seizures

## **20.0 Lorazepam (Ativan)**

### **20.1 Actions**

Lorazepam is a benzodiazepine and thus depresses the central nervous system causing sedation, relieves anxiety, causes lack of recall, and relief of skeletal muscle spasm.

### **20.2 Indications**

1. Adjunct to seizure control.
2. Control of violent patients.

### **20.3 Contraindications**

Known sensitivity to benzodiazepines, narrow-angle glaucoma.

### **20.4 Side Effects**

CNS: Excessive CNS depression.  
Cardio: Rarely hypotension / hypertension.  
Resp: Hypoventilation, partial airway obstruction.  
Local: Pain, burning, and redness at injection site.  
General: Nausea / vomiting and skin rash.

## **21.0 Magnesium Sulfate**

### **21.1 Mechanism of Action**

Given as a smooth muscle relaxant or as an electrolyte replacement for hypomagnesaemia or as an antidote to specific conditions such as Torsades de Pointes or eclampsia.

### **21.2 Indications**

1. For Torsades de Pointes
2. For the first line treatment of severe pre-eclamptic, or eclamptic, females. Severe pre-eclampsia is defined as BP  $\geq$ 140/90, and facial and peripheral edema with headaches; eclampsia is as previously defined with seizures
3. Tricyclic antidepressant toxicity
4. Status asthmaticus

### **21.3 Contraindications**

1. AV Block or recent myocardial infraction
2. Shock
3. Dialysis patients and those with Renal disease
4. Severe hypertension
5. Hypocalcaemia

### **21.4 Precautions**

When using magnesium sulfate, continuous cardiac and vital sign monitoring must be used. If used for pre-eclampsia/eclampsia, patient should be kept quiet and transported in the left lateral recumbent position.

### **21.5 Side Effects**

1. Flushing
2. Bradycardia
3. Decreased deep tendon reflexes
4. Hypothermia
5. Rash
6. Sweating
7. Arrhythmias
8. Drowsiness
9. Hypotension
10. Itching

## **22.0 Methylprednisolone (Solu-Medrol)**

### **22.1 Mechanism of Action**

Intermediate-acting corticosteroid related to the natural hormones secreted by the adrenal cortex. Targets cells and causes many complex reactions that are responsible for its anti-inflammatory and immunosuppressive effects.

### **22.2 Indications**

1. Anaphylaxis
2. Respiratory distress from asthma or COPD

### **22.3 Contraindications**

1. Known hypersensitivity

### **22.4 Precautions**

A single dose is all that should be given in the prehospital setting. Long-term steroid therapy can cause GI bleeding and prolonged wound care. Pregnancy Category C.

### **22.5 Side Effects**

1. Seizures
2. Vertigo
3. CHF
4. Hypertension
5. Tachycardia
6. Nausea/vomiting
7. Headache
8. Abdominal distension
9. Diarrhea
10. GI hemorrhage
11. Palpitations



## **23.0 Midazolam HCL (Versed)**

### **23.1 Mechanism of Action**

Short-acting (20-30 minutes), water-soluble, benzodiazepine that causes sedation, CNS depression, and amnesia. Each dose may take up to 2 minutes to achieve clinical effect. Also possesses hypnotic and anticonvulsant properties. May be administered for conscious sedation to relieve apprehension, or impair memory, prior to tracheal intubation or cardio-version, or to treat status epilepticus. Besides sedation, you may see hypotension and tachycardia as a common result of the drug. Due to the fact that it works on similar receptors in the brain as alcohol, current alcoholics may need larger doses.

### **23.2 Indications**

1. Seizures
2. Sedation (pre-medication)

### **23.3 Contraindications**

1. Hypersensitivity to Midazolam/benzodiazepines
2. Glaucoma
3. Shock (e.g. hypotension)
4. Coma
5. Alcohol intoxication
6. Overdose
7. Depressed vital signs
8. Use of other CNS depressants

### **23.4 Precautions**

1. Amnesia
2. Hiccough
3. Cough
4. Over-sedation
5. Pain at injection site
6. Nausea/Vomiting
7. Headache
8. Blurred vision
9. Fluctuations in vital signs
10. Hypotension

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11. Respiratory depression (especially COPD patients)
12. Respiratory arrest
13. Short-acting; seizures may reoccur
14. Use with caution in patients >60 years of age
15. Reflex muscle tremors

## **24.0 Morphine Sulfate**

### **24.1 Mechanism of Action**

1. CNS depression with analgesic and sedative properties
2. Increases peripheral venous capacitance
3. Decreases myocardial oxygen demand

### **24.2 Indications**

1. Cardiac chest pain refractory to nitroglycerin
2. Severe pain
3. Pulmonary edema with, or without, associated pain

### **24.3 Contraindications**

1. Hypotensive patients
2. Asthma
3. Respiratory depression
4. Head injury with increased ICP
5. Hypersensitivity to narcotics

### **24.4 Precautions**

1. Respiratory depression
2. Hypotension
3. Bradycardia
4. Nausea and vomiting
5. Use morphine with caution in patients receiving monoamine oxidase (MAO) inhibitors (Deprenyl, Seliginine, Eldepryl, Parnate, Iproniazid) or TCAs (Amitriptyline, Desipramine)

### **24.5 Side Effects**

1. Respiratory depression
2. Hypotension

## **25.0 Naloxone (Narcan)**

### **25.1 Mechanism of Action**

Competitive narcotic antagonist. As such, it is a specific narcotic antidote.

### **25.2 Indications**

Reversal of narcotic-induced altered mental status and respiratory depression.  
Diagnosis of suspected acute opioid intoxication.

### **25.3 Contraindications**

Hypersensitivity to drug.

### **25.4 Precautions**

Abrupt withdrawal effects.

### **25.5 Side Effects**

1. Nausea and vomiting
2. Excitation for abrupt reversal of narcotic depression

## **26.0 Nitroglycerin (Nitrostat/Tridil)**

### **26.1 Mechanism of Action**

Vascular smooth muscle relaxation leading to venous, coronary, and arterial vasodilatation. These effects lead to a decreased work load on the heart.

### **26.2 Indications**

1. Chest pain associated with angina or MI
2. Pulmonary edema
3. Hypertensive crisis (in rare instances)

### **26.3 Contraindications**

1. Hypotension
2. Hypersensitivity to nitrates
3. Patients with increased ICP (head trauma)
4. Viagra, or similar erectile dysfunction medication, taken within past 24 hours

### **26.4 Precautions**

1. Hypotension may develop
2. Chronic pain management patients

### **26.5 Side Effects**

1. Headaches due to cerebral vasodilatation
2. Hypotension
3. Postural syncope

## **27.0 Ondansetron (Zofran)**

### **27.1 Indications**

1. Motion sickness
2. Nausea

### **27.2 Contraindications**

1. Hypersensitivity to the drug

### **27.3 Side Effects**

1. Drowsiness
2. Dizziness
3. Hypotension
4. Flushing
5. Musculoskeletal pain
6. Cardiovascular disturbances
7. Headache

## **28.0 Oral Glucose (Glucose, Insta-Glucose)**

### **28.1 Mechanism of Action**

1. Increases blood sugar

### **28.2 Indications**

1. Hypoglycemia, altered mental status

### **28.3 Contraindications**

1. Unresponsive patient
2. Unable to swallow

### **28.4 Precautions**

1. Ascertain the patient's ability to swallow an oral preparation of oral glucose without airway compromise.

### **28.5 Side Effects**

1. May be aspirated by the patient without a gag reflex

## **29.0 Pralidoxime (2-PAM®), Protopam Chloride®)**

### **29.1 Mechanism of Action**

Reactivates cholinesterase that has been deactivated by organophosphorus pesticides and related products. Thus inactivates acetylcholine at both muscarinic and nicotinic sites in the periphery.

### **29.2 Indications**

Organophosphorus toxicity, used as adjunct to systemic atropine administration.

### **29.3 Contraindications**

Poisoning with SEVIN (a carbamate insecticide, it increases drug's toxicity). Use with extreme caution in patients with a history of asthma, renal insufficiency and peptic ulcers.

### **29.4 Side Effects**

CNS: Dizziness, headache, drowsiness and excitement.  
CV: Tachycardia.  
EENT: Blurred vision, diplopia, impaired accommodation, laryngospasm  
GI: Nausea.  
Other: Muscular weakness or rigidity and hyperventilation.



## **30.0 Prednisone**

### **30.1 Mechanism of Action**

Prednisone belongs to a class of drugs known as corticosteroids. It decreases your immune system's response to various diseases to reduce symptoms such as swelling and allergic-type reactions.

### **30.2 Indications**

Allergic reaction/Anaphylaxis that has systemic involvement or is severe.

### **30.3 Contraindications**

1. Previous allergic reaction to Prednisone
2. Prednisolone is contraindicated in peptic ulcer and history of Tuberculosis.

### **30.4 Precautions**

1. Should not use prednisone if the patient is allergic to prednisone or if patient has a fungal infection.
2. If patient is pregnant or nursing.

### **30.5 Side Effects**

1. Signs of allergic reaction
2. hypertension
3. Insomnia

## **31.0 Sodium Bicarbonate 8.4%**

### **31.1 Mechanism of Action**

Increases plasma bicarbonate, which buffers plasma H<sup>+</sup> ions and raises blood pH.

### **31.2 Indications**

Documented metabolic acidosis  
Tricyclic overdose  
Prolonged resuscitation with effective ventilation  
Upon return of spontaneous circulation after long arrest interval

### **31.3 Contraindications**

Respiratory or metabolic alkalosis

### **31.4 Precautions**

Can cause alkalosis  
Most vasopressors, such as dopamine, can be deactivated by the alkaline environment provided by the sodium bicarbonate

### **31.5 Side Effects**

Volume overload  
Alkalosis

### **31.6 Incompatibility**

Do not give together in IV with calcium salts. This combination will produce a precipitate of calcium carbonate. Do not give together in IV with sympathomimetic drugs (e.g. epinephrine), which will be deactivated in an alkaline environment.

## **32.0 Vasopressin (Pitressin)**

### **32.1 Mechanism of Action**

When given in large doses, vasopressin causes non-adrenergic vasoconstriction. In cardiac arrest this has been shown to increase effectiveness of CPR and myocardial blood flow.

### **32.2 Indications**

1. Adult cardiac arrest

### **32.3 Contraindications**

1. Known hypersensitivity

### **32.4 Precautions**

No precautions when used for indicated conditions

### **32.5 Side Effects**

1. Hypertension
2. Dysrhythmias
3. Pallor
4. Nausea/vomiting
5. Abdominal cramping
6. Bronchial constriction
7. Sweating
8. Urticaria

**\*Not indicated for pediatrics.**