05-0816 – Poisoning/Exposures

Authority: Health and Safety Code Division 2.5, California Code of Regulations, Title 22, Division 9

Definition

Poisoning/Exposures

Known or suspected drug overdose, poisoning, or accidental ingestion. This can occur either by inhalation, dermal, or ingestion.

Common symptoms include weakness/dizziness, mild confusion, syncope, unconsciousness, bradycardia, hypotension, arrhythmias/widening QRS and seizures.

1. Beta Blockers – Include but are not limited to the following: Metoprolol/Lopressor/Troprol, Labetalol/Esmolol, Carvedilol/Coreg, Atenolol/Tenormin (amongst others).
2. Calcium Channel Blockers – Include but are not limited to the following: Norvasc/Amlodipine, Diltiazem/Cardizem, Nifedipine/Procardia, Verapamil/Calan (amongst others).
3. Cyclic Antidepressants – Include but are not limited to the following: Amitriptyline, Doxepin, Imipramine, Nortriptyline, Trimipramine

Precautions

1. Ensure scene safety.
2. Use personal protective equipment.
3. Use Nitrile gloves not Latex.
4. Refer to hazardous materials protocol as needed.
5. May need to involve law enforcement.
6. Do not induce vomiting.

History

1. Try to determine whether it was accidental or intentional.
2. Remembering the history is notoriously unreliable.
3. Attempt to ascertain the type(s) of agent(s) involved, along with the time of exposure/ingestion.
4. Estimate the amount of agent involved.
5. Note any vomiting and if there are pills fragments.
6. Transport the medication agent containers, labels, sample of agent (if safe) with the patient.

BLS Treatment

1. **OXYGEN**: as appropriate, goal to maintain SPO2 at least 94%, Assist ventilations as necessary.
2. **VITALS**: assess vitals, more frequently if in shock.
3. **BLOOD SUGAR CHECK**: test blood sugar and treat as appropriate.
4. Naloxone if opioid toxicity suggested.
5. **POSITIONING**: Keep patient at least 45 degrees to help prevent aspiration especially in hydrocarbons/petroleum products.
6. **GENERAL DECONTAMINATION**: Remove contaminated clothing. Brush off powders or wash off liquids with copious amounts water.

ALS Treatment

Hypotension

1. two IV/IOs if patient has an SBP less than 70 mm Hg or (70 + (2 x age in years)). Administer (20 ml/kg bolus) up to 250 ml fluid boluses to SBP greater than or equal to 70 mmHg 70 + (2 x age years)). Reassess patient after each bolus. For neonate the fluid bolus is 10ml/kg.
    a. If hypotensive persists, give fluid bolus per pediatric shock protocol.
    b. PUSH DOSE EPINEPHERINE – 5 mcg to 10mcg (0.5 ml to 1ml) slow IV push every 1-5 minutes until SBP is GREATER than 70 mmHg or (70 + (2 x age in years))
2. **Place MONITOR**: treat rhythm as appropriate
3. CONSIDER PACING for HR LESS than 60 & SBP less than 70 mmHg or SBP less than (70 + (2 X age)) with signs of shock not responsive to fluids.

Hypoglycemia

1. Check the blood sugar and treat as appropriate.
2. see altered level of consciousness protocol.
3. Suspected insulin or oral diabetic agent overdose consider the need for additional dextrose or glucagon.

Seizure activity

See seizure protocol.

Charcoal

For ingestions of less than 1 (one) hour, transport time is greater than 30 (thirty) minutes and the patient is alert/has ability to handles secretions consider charcoal 1 gm/kg up to maximum dose of 50 (fifty) grams.

1. Charcoal is contraindicated with the following substances:
    a. organophosphates,
    b. hydrocarbons (petroleum products),
    c. corrosives,
    d. acids, and
    e. alkali products.
2. Withhold charcoal if decreasing level of consciousness is present or a possibility (e.g. tricyclics).
3. Avoid charcoal for foreign body ingestions.
4. Avoid charcoal if home ipecac administration.
5. Do not use N/G, O/G, or perform gastric lavage.
6. For toxic inhalations use albuterol if the patient has bronchospasm per protocol.

Dystonic Reactions

Benadryl (diphenhydramine) 1 mg/kg IV/IM/ (not IO). May repeat once for persistent symptoms.

Organophosphate or Carbamate Pesticides

Remember:

SLUDGE: Salivation, Lacrimation, Urination, Defecation, Gastric Distress, Emesis

Note: Must use Nitrile gloves for these patients.

1. Titrate Atropine 0.05 mg/kg doses IV/IO/IM as indicated to decrease symptoms (there is no maximum dose unless Atropine toxicity occurs).
2. Goal is to dry secretions and decrease respiratory compromise.
3. Organophosphate poisoning is “wet” with salivation, lacrimation, defecation (diarrhea), urination, and bronchorrhea (excessive pulmonary secretions) occurring.
4. **Atropine toxicity** is when the patient becomes “dry”; with the pneumonic: Hot as a hare, Blind as a bat, Dry as a bone, Red as a beet, and Mad as a hatter.
5. Use pralidoxime (2-PAM) for toxicity.
6. **Seizures** see appropriate pediatric protocol.

Tricyclics

1. Treat arrhythmias as follows:
    a. For wide QRS complexes, ventricular arrhythmias or hypotension not responsive to NS boluses (see shock protocol #05-0815 Pediatric Shock/Hypotension) administer Sodium Bicarbonate (1 mEq/ml) administer 1 mEq/kg slow IV push.
2. Seizures see pediatric seizure protocol.
    a. Not responsive to diazepam, lorazepam or midazolam:
    b. Consider giving sodium bicarbonate after maximum doses of benzodiazepines.
3. CYCLIC ANTIDREPRESSANT: FOR SBP LESS than 70 mm Hg or (70 + (2 x age in years)).
    a. SODIUM BICARBINATE (1mEq/ml) 1 mEq/kg slow IV push for hypotension.
    b. PUSH DOSE EPINEPHERINE – 5 to 10 mcg (0.5 ml to 1ml) slow IV push every 1-5 minutes for SBP LESS than 70 mmHg or (70 + (2 x age in years)).

Beta Blockers

FOR SBP LESS than 70 mmHg or HR less than or equal to 60 beats/minute.

1. Fluids per pediatric shock protocol.
2. PUSH DOSE EPINEPHERINE – 5 mcg to 10mcg (0.5 ml to 1ml) slow IV push every 1-5 minutes until SBP is GREATER than 70 mmHg or (70 + (2 x age in years))
3. Consider using external pacing.

Calcium Channel Blockers

CALCIUM CHANNEL BLOCKERS: FOR SBP LESS than 70 mmHg or (70 + (2 x age in years)):

1. CALCIUM CHLORIDE – (100mg/ml) 20 mg/kg very slow IV push (1ml/minute) over 10 minutes or SBP GREATER than 70 mmHg or (70 + (2 x age in years)).
2. PUSH DOSE EPINEPHERINE – 5 mcg to 10mcg (0.5 ml to 1ml) slow IV push every 1-5 minutes for SBP LESS than 70 mmHg or (70 + (2 x age in years)).
3. Consider using external pacing

Hydrocarbons

Examples include the following but are not limited to: petroleum (other fuels), paints, paint removers, lighter fluids, spot removers and polishing agents.

Symptom

1. Initially there may be a period of excitement and euphoria.
2. Followed by weakness, poor coordination, drowsiness, confusion, and coma due to the anesthetic effects.
3. Some petroleum products such as gasoline can cause hypoglycemia and cardiac dysrhythmias

Treatment

1. Supportive with attention to oxygenation and blood pressure management.
2. Do not give neutralizing agents.
3. Do not induce vomiting.
4. Do not give charcoal
5. Do not insert NG, OG, or perform gastric lavage.

Caustics

1. Acids: The following are examples but not limited to: toilet bowel cleaners, swimming pool cleaners, and battery acid.
2. Alkalis: The following are examples but not limited to: lye, drain cleaners, and Clorox bleach.

Treatment

1. Supportive with attention to oxygenation and blood pressure management.
2. Do not give neutralizing agents.
3. Do not induce vomiting.
4. Do not give charcoal
5. Do not insert NG, OG, or perform gastric lavage.

PUSH DOSE EPINEPHRINE SOLUTION MIXING INSTRUCTIONS

1. Take Epinephrine 1:10,000 concentration (1 mg/10 ml) and waste 9 ml of Epinephrine
2. In same syringe draw 9 ml of saline from the patients IV bag & shake well
3. Mixture now provides 10 ml of Epinephrine at 10mcg/ml (0.01 mg/ml) concentration
4. Label syringe Epi 10mcg/ml

USE EXTREME CAUTION WHEN USING PUSH DOSE EPINEPHERINE

Considerations

Administer fluid boluses with caution due to the high incidence of pulmonary edema in tricyclic overdose patients.