Protocol
PM-09

PEDIATRIC TOXICOLOGICAL EMERGENCIES

SECTION: PM-09

PROTOCOL TITLE: PEDIATRIC TOXICOLOGICAL EMERGENCIES

REVISED: November 1, 2021

GENERAL COMMENTS: This protocol directly supplements protocols R-1 through R-10 (Adult Toxicological Emergencies.)

BLS SPECIFIC CARE: *See General Pediatric Care Protocol PM-1*

Scene safety:

- Ensure law enforcement is on scene for traditional overdoses
- Wear appropriate PPE including respiratory and topical skin protection
- Request HAZMAT for suspected toxic exposure, such as meth labs, chemical mishaps, and topical poisons

In addition to standard medical history obtain:

- Name of ingested substance
- Quantity ingested
- Time of ingestion
- Has vomiting occurred?

Basic BLS assessments and V/S every 15 minutes unless unstable, then reassess and V/S every 5 minutes

- Assess a Blood Glucose. Treat as appropriate. See *Pediatric Hypoglycemia Protocol (PM-06)*
- *Obtain Temperature*

All toxicological emergencies *shall* receive ALS evaluation.

Patients with respiratory complaint or abnormality should receive supplemental oxygen, regardless of oxygen saturation. Assist ventilations as needed

Restraints may be used for patient and/or rescuer safety

Suspected (symptomatic) opiate ingestion:

- Oxygenation: Initiate basic airway/oxygenation/ventilation maneuvers prior to opioid antagonists. Some opiate overdose patients will respond well to simple assisted ventilations.
- Narcan (naloxone)
    - IM/IN**:** 2-8 mg. Repeat as needed to a maximum of 10 mg if IV access is unavailable.
    - If patient has obviously aspirated, consider bypassing Narcan and manage airway if required.
- Do not delay basic care (i.e., Airway positioning, ventilations, or CPR) waiting for Naloxone availability or for Naloxone to take effect.

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AEMT/O.M. Specific Care: *See General Pediatric Care Protocol PM-1*

Suspected (symptomatic) opiate ingestion:

- Narcan
  - IV/IO: 0.01 - 0.05 mg/kg to max single dose of 2 mg. Administer slowly. Repeat as needed every 1-2 minutes to a maximum of 10 mg.
  - If patient has obviously aspirated, consider bypassing Narcan and manage airway as required.
  - IV/IO in cardiac arrest: 2 mg

ALS SPECIFIC CARE: *See General Pediatric Care Protocol PM-1*

12 Lead ECG for all pediatric toxicological emergencies.

Seizures secondary to toxic ingestion:

- Follow Pediatric Seizure Protocol (PM-4)

Hypotension secondary to toxic ingestion:

- Follow Pediatric Hypotension and Shock Protocol (PM-5)

Suspected TCA overdose: (do not administer Amiodarone)

- Sodium Bicarbonate for hypotension, arrhythmia, QRS >100 ms
  - IV: 1 meq/kg IV
  - Re-bolus in 5-10 min at 1 meq/kg if s/s persist

- Magnesium Sulfate *(for Torsades REFRACTORY to sodium Bicarbonate)*
  - IV/IO: 25-50 mg/kg in 100 ml Buretrol over 2-5 minutes, **MAX 2 GM**

Calcium channel blocker/beta blocker ingestion

- **Calcium Chloride (for Calcium Channel Blockers Only)**
  - IV (Slow): 20 mg/kg over 10 minutes until s/s improve

- **Glucagon**
  - IV, IM, SQ: 0.1 mg/kg to a max of 1 mg every 5 minutes as needed and as available
  - Do not use diluents (e.g., propylene glycol) supplied with single use kits. Use Normal Saline instead

- **Epinephrine Infusion**
  - 0.1-2 mcg/kg/min, see drug index

Organophosphate Exposure

- Atropine Sulfate
  - IV/IO/IM: 0.05 mg/kg, repeated PRN for continued symptoms

Hyper-dynamic drug ingestion/exposure (with active s/s)

- Diazepam (Valium)
    - IV/IO/IM: 0.2 mg/kg every 5-10 min PRN to a max of 10 mg
- Midazolam (Versed)
    - IV/IO: 0.1 mg/kg every 5-10 min (over 2-5 minutes if IV). Maximum dose of 2.5 mg
    - IN/IM: 0.2 mg/kg repeat every 5 min PRN. If no IV access is available (Max 5mg)

EPS:

- Benadryl (Diphenhydramine)
    - IV/IM: 1 mg/kg IVP max of 25 mg

PHYSICIAN PEARLS:

The following are high risk toxicological situations that should be evaluated at a hospital regardless of clinical stability. *These are the substances that, for a variety of reasons, result in the highest ICU admissions.*

- **Any situation where 2 or more agents/drugs may be involved** (Poly-Pharmacy ingestion). 44% of fatal pediatric overdoses involve more than one substance
- **Iron Ingestions** (as little as 20-60mg/kg) Iron ingestions may present with a latent period at about 1-6 hours with cardiovascular collapse occurring 12-24 hours post ingestion. Commonly found in OTC supplements, *iron ingestions are a leading cause of pediatric fatal ingestion*
- **Hyper-dynamic Drug Ingestions**/Meth Lab exposures
- **Antidepressants** of any type: Tricyclic Antidepressants (TCAs) are especially high risk
- **Anticonvulsants**
- **Digitalis** (Nightshade) or Digitalis containing substances. (Digoxin)
- **Opiates**
- **Hydrocarbon-based household products**:
    - Gasoline, kerosene, etc.
    - Gases & fumes (huffing)
- **Alcohols** (any type): Alcoholic Beverages, Wood Alcohol, Isopropyl alcohol, Etc.
- **Benzodiazepines**
- **Aspirin**
- **Cleaning substances**

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In addition to the above substances, the following situations and symptoms are also worrisome with suspected toxic ingestion and should be transported to the hospital.

- Sudden onset of:
    - Abdominal pain
    - Nausea
    - Vomiting
    - Seizures
    - Coma
    - Decreased LOC
    - Bizarre behavior
    - Abnormal walking gait
- Sudden onset of unexplained illness
- Bizarre, incomplete, evasive history
    - Suspect abuse, neglect, or illegal activity
- Pediatric patient with cardio-respiratory distress