Protocol
PM-03

SECTION: PM-03

PROTOCOL TITLE: PED ALLERGY/ANAPHYLAXIS

REVISED: June 15, 2021

PED ALLERGY/ANAPHYLAXIS

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

- Determine patient's color category on length based resuscitation tape (Broselow Tape)

Epi Pen Protocol (If optional Module not completed)

- Administer epinephrine via auto-injector per State of Idaho epinephrine auto-injector program guidelines
- In the absence of this training and patient has his/her own epinephrine auto-injector, the EMT may assist with its administration per the following guidelines
    - Confirm prior to administration:
    - Is Epi-Pen prescribed to the patient (Right Patient?)
    - Is it an Epi-Pen of the correct dose (Right Dose?)
        - Patient weight < 30 kg (66 lbs)?
            - Use Epi-Pen Junior: 0.15 mg 1:1,000 epinephrine
        - Patient weight > 30 kg (66 lbs)?
            - Use Epi-Pen Adult: 0.3 mg 1:1,000 epinephrine
    - Is the Epi-Pen an intramuscular (IM) auto injector (Right route?)
    - Is the Epi-Pen expired?
- Re-evaluate patient's sign and symptoms every 5 minutes following administration. Evaluate for presence adverse effects of epinephrine.
    - Chest pain
    - Headache
    - Palpitations
    - Anxiety/tremors
- Repeat in 10 minutes if no improvement

If signs of bronchospasm are present, consider bronchodilators:

- *Option 1:* Nebulizer Treatment
    - Albuterol 2.5 mg (0.83% in 3 cc)
    - Ipratropium Bromide (Atrovent) 0.5 mg (0.02% in 2.5 cc)
    - May repeat as needed using Albuterol only. May use equivalent solutions of above medications such as *DuoNeb* as available
- *Option 2:* Assist the patient with his prescribed "rescue inhaler." Use a spacer if the patient is prescribed one and has it available
    - Assisted Inhaler: 2 puffs or a specific number of puffs as prescribed by patient's MD
    - Repeat every 5-10 minutes or as prescribed by patient's MD
    - Hold for HR >150/min
- *Option 3:* As an alternative, the patient may be allowed to use his/her own prescribed nebulized medication. Use oxygen in lieu of a room air "condenser" and run at 6-8 lpm with the patient's hand-held nebulizer (HHN). The patient must prepare it him/herself

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

IV Fluid Resuscitation

- Treat hypotension aggressively with IV crystalloid up at 20 cc/kg repeated PRN to max of 1000 cc. Hold for s/s of CHF/pulmonary edema or CHF History

Sympathomimetic

- Epinephrine 1:1000
  - Patient weight < 30 kg (66 lbs): IM: 0.15 mg
  - Patient weight > 30 kg (66 lbs): IM: 0.3 mg
  - Repeat x 1 in 10 minutes if s/s do not significantly improve

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

IV Fluid Resuscitation

- Treat hypotension aggressively with IV crystalloid PRN. Hold for s/s of CHF/pulmonary edema or CHF History
  - 20 cc/kg Boluses repeated PRN.

Sympathomimetics

- Epinephrine Infusion: for persistent (age specific) hypotension and/or severe refractory s/s
  - IV Infusion: 0.05-1 mcg/kg/min, titrate for effect via infusion pump
  - To Mix: 1 mg epinephrine in 250 cc NS bag

- Epinephrine Neb *(for laryngeal edema only)*
  - 3 mg (3 ml) mixed with 3 ml NS for 6ml total epinephrine 1:1,000 nebulized

Antihistamine

- Benadryl (Diphenhydramine)
  - IV, IM, IO: 1-2 mg/kg MAX of 25 mg.
  - PO: (If available) 25 mg (for mild cases)

- Pepcid (Famotidine) May be used in conjunction with Benadryl
  - IV, IO: 0.5 mg/kg Slow admin Every 12 hours. To a MAX of 20 mg. *May* dilute to 100 or 250 cc and administer over 15 minutes.
  - PO: (If available) 20 mg (for mild cases)

CAUTION: All patients receiving inhaled beta agonists and/or anticholinergic medications should be observed for a least one hour following treatment for return of symptoms.

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ALS evaluation is indicated if Epi administered either PTA or by EMS, and transport strongly encouraged. Refusals require medical control contact.

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PHYSICIAN PEARLS:

Epinephrine Auto injector: EMTs can administer the epinephrine Auto-Injector if it has been prescribed to the patient. In addition, EMTs may administer an auto injector that HAS NOT been prescribed to the patient IF they have successfully completed additional training as required by the Department of Health and Welfare, Bureau of EMS and the ACCESS Medical Directors.

Epi IM admin Optional Module: EMTs can administer the epinephrine via IM injection after drawing it from a vial, glass amp, or other container if they have successfully completed additional training as required by the Department of Health and Welfare, Bureau of EMS and the ACCESS Medical Directors.

H2 Antagonists: H2 antagonists are adjunctive therapies to Benadryl (with or without epinephrine) in anaphylaxis & allergic reactions. It is not a stand-alone intervention. If Benadryl is given for anaphylaxis & allergic reactions, an H2 antagonist should also be given unless contraindicated. **PEPCID is IV/IO ONLY.**

Common Presentations: The most common symptoms were urticaria and angioedema, occurring in approximately 80% of patients. The next most common manifestations were respiratory symptoms, such as upper airway edema, dyspnea, and wheezing. Gastrointestinal symptoms occur most commonly in food-induced anaphylaxis but can occur with other causes as well. Oral pruritus is often the first symptom observed in patients experiencing food-induced anaphylaxis. Abdominal cramping is also common, but nausea, vomiting, and diarrhea are frequently observed as well.
Cardiovascular symptoms of dizziness, syncope and hypotension were less common, *but it is important to remember that cardiovascular collapse may occur abruptly without the prior development of skin or respiratory manifestations.*

A comment about FATAL and FOOD based reactions: It is commonly believed that all cases of anaphylaxis present with cutaneous manifestations, such as hives or mucocutaneous swelling. In fact, as previously mentioned, up to 20% of anaphylactic episodes may not involve these signs and symptoms on presentation for emergency care.
Moreover, a survey of children with food-induced anaphylaxis showed that 80% of fatal reactions were not associated with cutaneous manifestations. In one study (Sampson et al) many cases of fatal food-induced anaphylaxis occurred in a biphasic clinical pattern. In these, mild oral and gastrointestinal symptoms occurred within 30 minutes of food ingestion. These symptoms resolved, only to be followed 1–2 hours later by severe respiratory symptoms and hypotension.
Put simply, the many fatal reactions do not present with "skin signs".

Individuals at greater risk for a fatal reaction include those with asthma, atopic dermatitis (eczema), a prior anaphylactic history, and those who deny symptoms and therefore delaying treatment with epinephrine.

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