SECTION: Adult General Medical Emergencies

PROTOCOL TITLE: Medical – Allergic Reaction and Anaphylaxis

REVISED: 08/2019

Protocol 3-3

ALLERGIC REACTION

OVERVIEW:
Anaphylaxis allergic reactions are serious and potentially life-threatening medical emergencies. It is the body's adverse reaction to a foreign protein, (i.e., food medicine, pollen, insect sting or any ingested, inhaled, or injected substance). Patients with allergic reactions frequently present only with local or generalized swelling; in contrast, anaphylaxis is characterized by wheezing, significant airway compromise, and / or systolic BP < 90 mmHg. Common to both disorders are urticaria and Angioedema, which when isolated are best treated with simple antihistamine therapy. It is when respiratory symptoms, such as upper airway edema, dyspnea, and wheezing are present EMS personnel should attribute these findings to anaphylaxis, and subsequently move to more aggressive therapy. Cardiovascular collapse may occur abruptly, without the prior development of skin or respiratory symptoms. **Constant monitoring of the patient's airway and breathing is mandatory.**

Allergic Reaction	Anaphylaxis
• Symptoms involving only **one** organ system (i.e localized edema, hives, or vomiting)	• A more severe reaction characterized by the acute involvement of **two or more** organ systems (i.e. hives and respiratory distress, decreased BP and nausea/vomiting, etc)

HPI	Signs and Symptoms	Considerations
• Onset and location • Insect sting or bite • Food allergy / exposure • New clothing, soap, detergent • Past history of reactions • Medication history	• Itching or hives • Coughing, wheezing, or respiratory distress • Chest or throat constriction • Difficulty swallowing • Hypotension or shock • Edema	• Urticaria (rash only) • Anaphylaxis (systemic effect) • Shock (vascular effect) • Angioedema (drug induced) • Aspiration / airway obstruction • Vaso-vagal event • Asthma or COPD • Heart failure

	EMR	EMT	A	I	P
1. Perform general patient management.	•	•	•	•	•
2. Support life-threatening problems associated with airway, breathing, and circulation.	•	•	•	•	•
3. Administer oxygen to maintain SPO_2 94 - 99%	•	•	•	•	•
4. If signs of anaphylaxis, go to section 5. If localized allergic reaction, go to section 9.		•	•	•	•

Protocol 3-3 Continued

ALLERGIC REACTION

	EMR	EMT	A	I	P
5. If signs of **Anaphylaxis** and autoinjector or approved dose limiting system available, administer epinephrine.		•	•	•	•
6. If no autoinjector or approved device available, administer *EPINEPHERINE 1 mg/ml* 0.01 mg / kg up to 0.5 mg IM.			•	•	•
7. Administer *DIPHENHYDRAMINE* 1 mg / kg up to 50 mg IM or IV. The IV route is preferred for the patient in severe shock. If an IV cannot be readily established, give diphenhydramine via the IM route. If Benadryl injection not available, give one (1) 25mg PO capsule if patient is 25-49kg. If 50 kg or larger, give Benadryl two (2) capsules PO. During shortages, refer to medication references 13-39 or 13-40 for alternative medications and dosing recommendations.			•	•	•
8. If hypoperfusion persists following the first dose of epinephrine, consider administration of 20 mL / kg normal saline IV. While administering a fluid bolus, frequently reassess perfusion for improvement. If perfusion improves, slow the IV to KVO and monitor closely. If patient develops fluid overload respiratory distress (dyspnea, crackles, rhonchi, decreasing SpO_2), slow the IV to KVO.			•	•	•
9. For **Allergic Reaction** administer *DIPHENHYDRAMINE* 1 mg / kg up to 50 mg IM or IV. The IV route is preferred for the patient in severe shock. If an IV cannot be readily established, give diphenhydramine via the IM route. If Benadryl injection not available, give one (1) 25mg PO capsule if patient is 25-49kg. If 50 kg or larger, give Benadryl two (2) capsules PO. During shortages, refer to medication references 13-39 or 13-40 for alternative medications and dosing recommendations.			•	•	•
10. Assess for development of anaphylaxis and refer to section 5.		•	•	•	•
11. **For Both Allergic Reaction and Anaphylaxis:** If the patient is experiencing respiratory distress with wheezing, refer to the *Respiratory Distress protocol*.	•	•	•	•	•
12. Transport as soon as possible.		•	•	•	•
13. Establish an IV of normal saline at KVO.			•	•	•
14. Transport and perform ongoing assessment as indicated.		•	•	•	•

PEARLS:

1. A thorough assessment and a high index of suspicion are required for all potential allergic reaction patients.
2. Individuals with asthma, atopic dermatitis (eczema), prior anaphylactic history, and those who delay treatment can be at greater risk for a fatal reaction.
3. It is strongly recommended that all patients receiving anti-cholinergic medications should be transported for observation following treatment for return of symptoms.
4. Gastrointestinal symptoms occur most commonly in food-induced anaphylaxis, but can occur with other causes. 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.
5. Contrary to common belief that all cases of anaphylaxis present with cutaneous manifestations, such as hives or mucocutaneous swelling, a significant portion of anaphylactic episodes may not involve these signs and symptoms on initial presentation. Moreover, most fatal reactions to food-induced anaphylaxis in children were not associated with cutaneous manifestations.
6. Dose limiting systems are color coded syringes and other devices that do not require medication math to give the dose as approved by Virginia state medical control committee.

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