Allergic Reaction/ Anaphylaxis

History
- Onset and location
- Insect sting or bite
- Food allergy / exposure
- Medication allergy / exposure
- New clothing, soap, detergent
- Past history of reactions
- Past medical history
- Medication history

Signs and Symptoms
- Itching or hives
- Coughing / wheezing or respiratory distress
- Chest or throat constriction
- Difficulty swallowing
- Hypotension or shock
- Edema
- N/V

Differential
- Urticaria (rash only)
- Anaphylaxis (systemic effect)
- Shock (vascular effect)
- Angioedema (drug induced)
- Aspiration / Airway obstruction
- Vasovagal event
- Asthma or COPD
- CHF

Assess Symptom Severity / Suspected Exposure to Allergen

MILD
Skin Only

- **Diphenhydramine 25 - 50 mg PO**
- IV or IO Access Protocol UP 6 ***if indicated***
- **A** — **Diphenhydramine 25 - 50 mg PO / IV / IM / IO**
- **A** — **Famotidine 20 mg IV / IO**
- **B** — Monitor and Reassess Monitor for Worsening Signs and Symptoms

MODERATE
2 + Body Systems

- **Epinephrine 1:1000 IM 0.3 – 0.5 mg** Repeat every 5 minutes if no improvement
- **Diphenhydramine 25 - 50 mg PO** *See Pearls*
- **B** — **Albuterol Nebulizer 2.5 – 5 mg** Repeat as needed x 3 ***if indicated***
- **A** — **Epinephrine 1:1000 0.3 – 0.5 mg IM** Repeat every 5 minutes if no improvement
- **A** — **Diphenhydramine 25 - 50 mg IV / IM / IO** ***if not given PO (See Pearls)***

SEVERE
2 + Body Systems + hypotension
Or Isolated Hypotension

- **Epinephrine 1:1000 IM 0.3 – 0.5 mg** Repeat every 5 minutes if no improvement
- **B** — **Albuterol 2.5 – 5 mg** Nebulizer Repeat as needed x 3 ***if indicated***
- **A** — **Epinephrine 1:1000 0.3 – 0.5 mg IM** Repeat every 5 minutes if no improvement
- Airway Protocol(s) AR 1 - 4 ***if indicated***
- Hypotension/ Shock Protocol AM 5 ***if indicated***

- IV or IO Access Protocol UP 6
- **A** — **Albuterol Nebulizer 2.5 – 5 mg +/- Ipratropium 0.5 mg (DuoNeb)** Repeat as needed x 3 ***if indicated***
- **A** — **Famotidine 20 mg IV / IO**
- **A** — **Normal Saline Bolus 500 mL IV / IO** Repeat as needed **Maximum 2 Liters**
- **P** — No improvement with IM Epinephrine **Epinephrine IV / IO** See Page 2 for dosing regimen
- **P** — **Methylprednisolone 125 mg IV / IO Or Dexamethasone 10 mg IV / IO**
- **Notify Destination or Contact Medical Control**

Adult Medical Protocol Section

Allergic Reaction/ Anaphylaxis

Adult Medical Protocol Section

Allergic reactions occur when a patient is exposed to an allergen (pollen, insect, medication, food, etc.) causing the body to respond by releasing specific immunoglobulins such as histamine which causes hives, itching and capillary leaking leading to edema.

Anaphylaxis is likely present when any 1 of the 3 criteria below are present:

1. Acute onset of illness (minutes to hours) with skin involvement: Hives, erythema, itching and / or angioedema.

PLUS

Dyspnea, wheezing, stridor or hypoxemia.

OR

Hypotension, poor perfusion, shock, incontinence, syncope.

2. Acute onset of illness (minutes to hours) with 2 or more of the following are present:

a. Hives, erythema, itching and/ or angioedema.
b. Dyspnea, wheezing, stridor or hypoxemia.
c. Hypotension, poor perfusion, shock, incontinence
d. Nausea, vomiting an / or abdominal pain/ cramping.

3. Acute onset of illness (minutes to hours) with hypotension, poor perfusion, syncope, incontinence after exposure to known allergen.

- Anaphylaxis does not mean the patient must be in shock. Patients who demonstrate skin involvement plus a respiratory complaint have anaphylaxis. Patients who have skin involvement and GI symptoms such as nausea or abdominal cramping have anaphylaxis.
- And finally a patient may have anaphylaxis and have no skin findings such as rash or erythema.
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Famotidine:

- Dilute in at least 10 mL of NS and give slow IV Push over 2 – 3 minutes.

EPINEPHRINE IV IN SEVERE ALLERGY UNRESPONSIVE TO IM EPINEPHRINE AFTER 2 DOSES:

- Mix Epinephrine 1:1000 (1mg in 1mL) into 1000 mL of NS or LR = a concentration of 1 mcg/mL of Epinephrine.
- Give **5 mL – 10 mL** and repeat **5 - 10 mcg/min** every 2 – 3 minutes to effect SBP > 70+ 2(Age) mmHg and/or MAP ≥ 65 mmHg.
- Consider IV Epinephrine when no response after second dose of IM Epinephrine. Start infusion if unresponsive with ≥ 2 Push Doses.

Pearls

- **Recommended Exam: Mental Status, Skin, Heart, Lungs, Abdominal**
- **Anaphylaxis is an acute and potentially lethal multisystem allergic reaction.**
- **Epinephrine and administration:**
  - **Drug of choice and the FIRST drug that should be administered in acute anaphylaxis (Moderate / Severe Symptoms.)**
  - **IM Epinephrine should be administered in priority before or during attempts at IV or IO access.**
- **Diphenhydramine and steroid administration:**
  - **Diphenhydramine/ steroids have no proven benefit in Moderate/ Severe anaphylaxis.**
  - **Diphenhydramine/ steroids should NOT delay initial or repeat Epinephrine administration.**
  - **In Moderate and Severe anaphylaxis, Diphenhydramine may decrease mental status.**
  - **Diphenhydramine should NOT be given to a patient with decreased mental status and/ or a hypotensive patient as this may cause nausea, vomiting, and/ or worsening mental status.**
- **Anaphylaxis unresponsive to repeat doses of IM epinephrine may require IV epinephrine administration by IV push or epinephrine infusion. Contact Medical Control for appropriate dosing.**
- **Symptom Severity Classification:**
  - **Mild symptoms:**
    - **Flushing, hives, itching, erythema with normal blood pressure and perfusion.**
  - **Moderate symptoms:**
    - **Flushing, hives, itching, erythema plus respiratory (wheezing, dyspnea, hypoxia) or gastrointestinal symptoms (nausea, vomiting, abdominal pain) with normal blood pressure and perfusion.**
  - **Severe symptoms:**
    - **Flushing, hives, itching, erythema plus respiratory (wheezing, dyspnea, hypoxia) or gastrointestinal symptoms (nausea, vomiting, abdominal pain) with hypotension/ poor perfusion or isolated hypotension.**
- **Allergic reactions may occur with only respiratory and gastrointestinal symptoms and have no rash/ skin involvement.**
- **Angioedema** is seen in moderate to severe reactions and is swelling involving the face, lips or airway structures. This can also be seen in patients taking blood pressure medications like Prinivil / Zestril (lisinopril)-typically end in **-il.**
- **Hereditary Angioedema** involves swelling of the face, lips, airway structures, extremities, and may cause moderate to severe abdominal pain. Some patients are prescribed specific medications to aid in reversal of swelling.
  Paramedic may assist or administer this medication per patient/ package instructions.
- **Patients with moderate and severe reactions should receive a 12 lead ECG and should be continually monitored, but this should NOT delay administration of epinephrine.**
- **EMR/ EMT:**
  - **The use of Epinephrine IM is limited to the treatment of anaphylaxis and may be given only by autoinjector,** unless manual draw-up is approved by the Agency Medical Director and the NC office of EMS.
  - **Administration of diphenhydramine is limited to the oral route only**.
- **EMT administration of beta-agonist is limited to only patients currently prescribed the medication,** unless approved by the Agency Medical Director and the NC office of EMS.
- Agency Medical Director may require contact of medical control prior to EMT/ EMR administering any medication(s).
- The shorter the onset from exposure to symptoms the more severe the reaction.