



Allergic reactions – anaphylaxis

*** CME Version ***

Aaron J. Katz, AEMT-P, CIC

www.es26medic.net



Some terms

- Allergic reaction
 - Exaggerated immune system response to an allergen
- Allergen
 - The *thing* that causes an immune response
- Anaphylaxis
 - Severe **systemic** life threatening immune response to an allergen



Some causes

- **Insects**
 - Honey bee sting
- **Foods**
 - Nuts, seafood, milk
- **Plants**
 - Poison ivy
- **Animals**
 - Animal dander
- **Medications**
 - **Penicillin, Sulfa**
- **Others**
 - Soap, dust, chemicals, **latex**



Anaphylaxis S/S -- Skin

- Itching
- Hives
- Erythema
- Periorbital edema
- **Swollen lips/tongue**



Anaphylaxis S/S -- respiratory

- Chest/throat tightness
- Cough
- Tachypnea
- Muffled voice
- Wheezing
- Stridor



Anaphylaxis S/S -- cardiac

- Tachycardia
- Hypotension
- **Rapid onset, rapid progression**
- **“cardiovascular collapse”**
- **Severe “relative hypovolemia”**



Anaphylaxis S/S -- abdominal

- Abdominal Pain
- Nausea
- Vomiting



Some important facts

- Cannot occur on first exposure
- **Reactions tend to worsen with each exposure**
- **Onset may be rapid or delayed**
- **Must educate patient and family as to the severity of anaphylaxis**



Patient assessment

- **ALS – Call early!**
- ABCs
- Focused SAMPLE history
 - History of allergies?
 - Suspected allergen
 - How was the patient exposed
 - Ingestion, injection
 - Signs and symptoms
 - **Progression of S/S**
 - **Interventions – treatments attempted**
- **Vital signs repeated frequently**



Anaphylaxis -- treatment

- **ABCs**
 - Suction
 - O₂
- Determine history of anaphylaxis and/or recent exposure to allergen
- If both cardiac and respiratory status are normal
 - Transport
 - Frequent V/S – monitor closely for changes



Anaphylaxis – treatment (cont'd)

- If **either** cardiac or respiratory status is abnormal:
 - Prescribed EpiPen?
 - Has it? **Assist** patient in taking it
 - Does not have it/expired? **Administer** EpiPen
 - **EpiPen not prescribed?**
 - Contact medical control for authorization to administer EpiPen
 - Contact medical control for authorization for a second dose PRN
 - Rapid transport
 - Frequent V/S; monitor LOC
 - → **Anticipate cardiac arrest; return of anaphylaxis**



Anaphylaxis – ALS Treatment

- 1) Begin Basic Life Support Anaphylactic Reaction procedures.
- 2) If the patient is exhibiting obvious airway compromise, perform Endotracheal Intubation (sedate PRN).
- 3) Administer Epinephrine 0.3 mg (0.3 ml of a 1:1,000 solution), IM.
- 4) If the patient has signs of bronchospasm, administer Albuterol Sulfate 0.083% (one unit dose bottle of 3 ml), by nebulizer, at a flow rate that will deliver the solution over 5 – 15 minutes.
- 5) Monitor vital signs every 5 minutes.
- 6) Begin Cardiac Monitoring, record and evaluate EKG rhythm.



Anaphylaxis – ALS Treatment

- 7) Begin an IV infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL) via a large bore (14 - 16 gauge) catheter to keep vein open, or a Saline Lock.
- 8) If the patient has signs of decompensated shock:
 - a) Administer Epinephrine 0.1 mg (1 ml of a 1:10,000 solution), diluted in 50 ml Normal Saline (0.9% NS), IV/Saline Lock-drip, over 5 minutes, and
 - b) Begin rapid IV/Saline Lock infusion of Normal Saline (0.9% NS) or Ringer's Lactate (RL), up to 3 liters via macro-drip.
- 9) If the patient has no signs of shock, administer Diphenhydramine 50 mg, IV/Saline Lock bolus, or IM, if IV/Saline Lock access has not been established.
- 10) Contact Medical Control for implementation of one or more of the following MEDICAL CONTROL OPTIONS:



Anaphylaxis – ALS Treatment

MEDICAL CONTROL OPTIONS:

OPTION A: Repeat any of the above Standing Orders.

OPTION B: Administer Epinephrine 1 ug/min, IV/Saline Lock drip. Prepare infusion by adding 1 mg of Epinephrine (1 ml of a 1:1,000 solution) to 250 ml of Normal Saline (0.9% NS) (1 ug/min = 15 ml/hr = 15 gtts/min). If there is insufficient improvement in hemodynamic status, the infusion may be increased until the desired therapeutic effects are achieved or adverse affects appear. (Maximum dosage is 4 ug/min, IV/Saline Lock drip.)

OPTION C: Administer Dopamine 5 ug/kg/min, IV/Saline Lock drip. If there is insufficient improvement in hemodynamic status, the infusion rate may be increased until desired therapeutic effects are achieved or adverse effects appear. (Maximum dosage is 20 ug/kg/min, IV/Saline Lock drip.)

OPTION D: Administer Methylprednisolone 125 mg, IV/Saline Lock bolus, slowly, over 2 minutes.

OR

Administer Dexamethasone 12 mg, IV/Saline Lock bolus, slowly over 2 minutes.

OPTION E: Transportation Decision