

ALLERGIC REACTION AND ANAPHYLACTIC SHOCK

OBJECTIVES:

- 1) To understand the causes of allergic reactions.**
- 2) To recognize the signs and symptoms of allergic reactions.**
- 3) To review and familiarize yourself with the SPEMS Allergic Reaction protocol.**

An allergic reaction, also known as a hypersensitivity reaction, is a reaction caused by the immune system in response to a foreign substance, or allergen. It is the body's way of responding to an "invader". Allergies come in different forms and affect people with varying degrees of severity.

Allergies are very common. Most allergic reactions are not too serious, maybe a rash from poison ivy or sneezing from hay fever. However, in rare cases, an allergic reaction can be life threatening. Each year, in the United States, over four hundred people die from allergic reactions to penicillin, and over fifty people die from allergic reactions to bee and fire ant stings.

Anything can be an allergen and cause an allergic reaction. Some causes of allergic reactions are listed below:

- 1) Foods (milk, cheese, nuts, peanuts, soybeans, fish, shellfish, wheat, eggs.)
- 2) Medications (Antibiotics, anticonvulsants, aspirin, barbituates, chemotherapy drugs, contrast agents such as injectable dyes used in imaging procedures, hypertension medications, Novocain and similar anesthetics, non-steroidal anti-inflammatory drugs, penicillin, sulfa drugs).
- 3) Latex
- 4) Hymenoptera stings from insects such as bees, wasps, yellow jackets, hornets, ants.
- 5) Dust
- 6) Pollen

SYMPTOMS:

- Anaphylactic Shock
- Anxiety (including a sense of impending doom)
- Cough
- Difficulty breathing or shortness of breath
- Flushing
- Hair loss
- Hives
- Itching
- Itchy, watery, swollen eyes
- Nasal congestion
- Palpitations
- Skin rash
- Stomach pain
- Swelling of one or more parts of the body
- Tears (due to angioedema and stress)
- Vomiting
- Wheezing

Anaphylaxis is an extremely severe and rapid systemic allergic reaction. Anaphylaxis may occur after ingestion, inhalation, skin contact, or injection of an allergen or “trigger substance”. The most severe type of anaphylaxis, called **anaphylactic shock**, will usually result in death in mere minutes if not treated.

Anaphylactic shock is a life threatening medical emergency because of rapid constriction of the airway, often within minutes of onset. The body’s immune system, which is there to tackle substances or organisms which are a threat, such as bacteria or viruses, decides that something harmless poses a great danger, and launches a massive overreaction. Large quantities of an antibody called immunoglobulin E are produced, which cause a variety of effects on the body’s cells and tissues. The body, then, releases an excess amount of histamine, a dangerous chemical. This results in muscle contractions and swelling, often closing the throat, making it difficult to breathe.

Sufferers may also experience abdominal pain, vomiting, and diarrhea. Immunoglobulin E expands blood vessels, resulting in a drop in blood pressure, leading to syncope or unconsciousness. The most visible signs that it is a food allergy are swelling, rashes on the skin, lips or tongue.

Most people suffer allergic reactions to certain items such as pet fur, pollen, etc., but the symptoms are not life threatening and can be treated with antihistamines. However, these treatments take up to an hour to reach the bloodstream. True anaphylactic shock requires immediate treatment with an adrenaline injection. Adrenaline is the “fight or flight” hormone which is released naturally when the body is in a stressful or dangerous situation. It makes the heart beat faster, widens the air passages in the lungs, and reverses the widening of the blood vessels caused by immunoglobulin E.

Most people who realize that they have severe allergic reactions, carry a ready-filled adrenaline injector (Epi pen) with them at all times. However, anaphylactic shock can come on so rapidly that even immediate treatment with adrenaline is not guaranteed to save a victim’s life.

TREATMENT:

- Assess the pt’s ABC’s.
- Oxygen
- Assist ventilations if needed.
- Place the pt on cardiac monitor.
- Establish an IV.
- Give medications as needed per protocol.

MEDICATIONS:

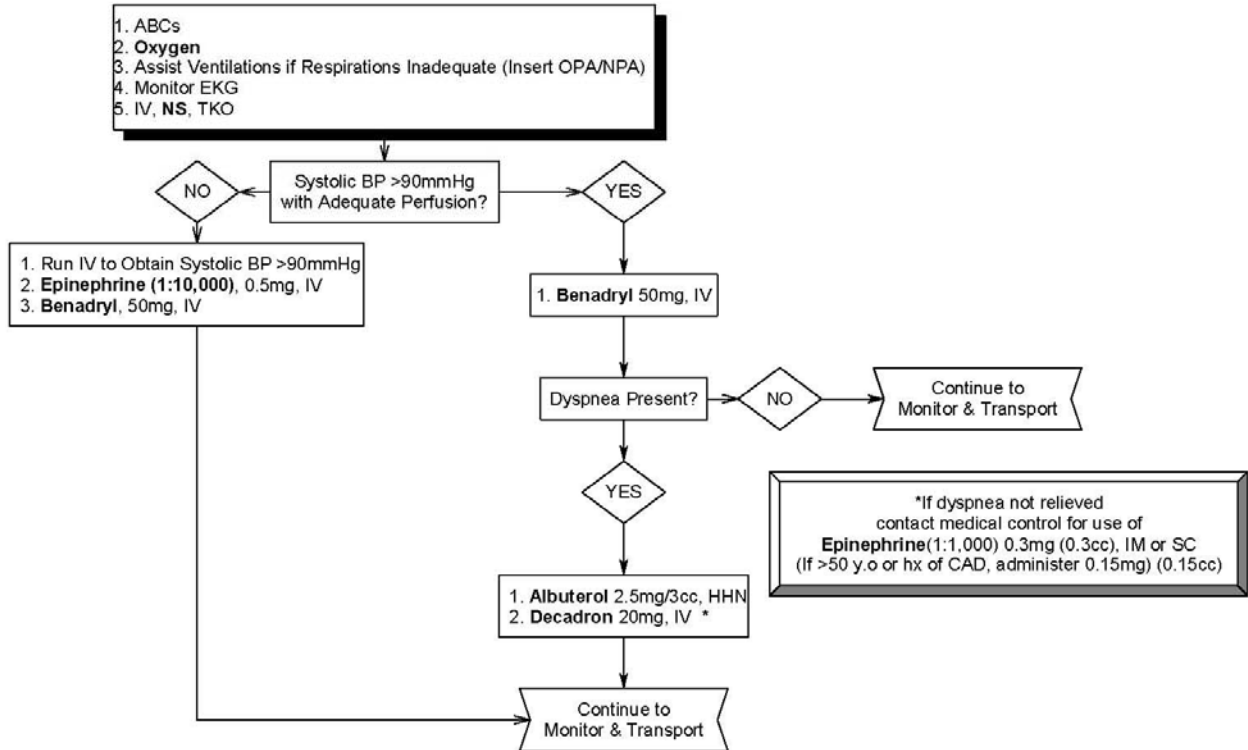
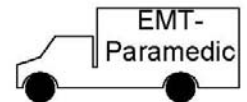
- Albuterol- 0.5 mg/3cc, HHN
- Benadryl- 50 mg IV
- Decadron- 20 mg IV
- Epinephrine- 1:10000 0.5 mg IV
- Epinephrine- 1:1000 0.3 mg IM or SC (If <50 y.o. or hx of CAD, 0.15 mg IM or SC.) Contact Medical Control for orders.

PEDIATRIC MEDICATIONS:

- Albuterol- 2.5 mg/3cc, HHN
- Benadryl- 1.0 mg/kg IV to a max of 50 mg
- Decadron- 0.6 mg/kg IV to a max of 20 mg
- Epinephrine- 1:10000 0.01 mg/kg IV to a max of 0.5 mg (5cc)
- Epinephrine- 1:1000 0.01 mg/kg to a max of 0.15 mg SC. Contact Medical Control for orders.

*The patient may require intubation enroute to the Emergency Room.

ALLERGIC REACTION



PEDIATRIC DOSE	
•Epinephrine (1:10,000),	0.01mg/kg, IV to a max of 0.5mg(5cc) (Administer only if evidence of Shock is present)
•Epinephrine (1:1,000),	0.01mg/kg, to a max of 0.15mg (0.15cc), SC
•Benadryl	1.0mg/kg, IV to a max of 50mg
•Decadron	0.6mg/kg to a max of 20mg, IV
•Albuterol	2.5mg/3cc, HHN