Chapter 18 Immunologic Emergencies

Introduction

- At least 1,000 Americans per year die of allergic reactions.
- Allergy-related emergencies may involve:
  - Acute airway obstruction
  - ________________ collapse
- You must be able to treat these life-threatening complications.
- ________________ is the study of the body’s immune system.

Immune System

- Immune system protects the body from ________________ substances and organisms.
- When a foreign substance invades the body:
  - Body goes on alert.
  - Body initiates a series of ________________ to inactivate the invader.

Allergic Reactions

- Allergic reaction
  - Exaggerated immune response to any substance
- ________________ and leukotrienes
  - Chemicals released by the immune system
- ________________
  - Substance triggering body’s immune system

Anaphylaxis

- Extreme ________________ reaction
- Involves multiple organs
- Can rapidly result in ________________
Most common signs:
- _______________________
- Urticaria (hives)

6 **Severe Allergic Reaction**

7 **Five General Allergen Categories**

- _______________________
- Medications
- Plants
- _______________________
- Chemicals

8 **Common Allergens: Insect Bites and Stings**

- When an insect bites and injects the bite with its venom, this is called _______________________.
- The reaction may be _______________________ (swelling and itchiness) or _______________________ (involving the entire body).

9 **Common Allergens: Medications**

- _______________________ injection may cause an immediate and severe reaction.
- Oral penicillin may take longer.
- A person will typically experience an allergic reaction after becoming _______________________.

10 **Common Allergens: Plants, Food, Chemicals**

- Plants
  - _______________________, pollens, other plant materials
- Food
  - Reaction can be relatively slow
  - _______________________, nuts
Chemicals
- ________________________, soap, latex

**Insect Stings (1 of 2)**
- Death from insect stings outnumber those from snakebites.
- ________________________ is injected through stinging organ.
- Some insects and ants can sting repeatedly.
- May cause local or ________________________ reaction.
- Honeybees cannot withdraw their stinger.
  - Fly away and die
- Wasps, hornets, and fire ants can sting ________________________ times.

**Insect Stings (2 of 2)**
- Some ants, especially the ________________________ ant, also strike repeatedly.
  - Often inject a particularly irritating ________________________ at the bite sites.

**Signs and Symptoms of Insect Stings**
- Sudden pain, ________________________, and redness at site
- Itching and sometimes a ________________________
- Sometimes dramatic swelling
- Localized ________________________
- Redness in light-skinned individuals

**Wheal**

**Management of Insect Stings (1 of 3)**
- There is no specific ________________________ for these injuries.
Applying ice sometimes helps.
Swelling may be dramatic and frightening.
Local manifestations are not _______________________.

Management of Insect Stings (2 of 3)
- Stinger of the honeybee can continue to inject venom for up to __________ minutes.
- Attempt to remove the stinger by ________________ the skin with the edge of a sharp, stiff object such as a credit card.

Management of Insect Stings (3 of 3)
- Do not use __________________ or forceps.
- Wash the area with soap and water.
- Remove any __________________ from the area.
- Be alert for __________________ or signs of shock.
- Give oxygen if needed.
- Monitor the patient’s vital signs.

Anaphylactic Reactions to Stings
- 5% of all people are allergic to bee, hornet, yellow jacket, and wasp stings.
- Anaphylaxis accounts for approximately __________ deaths a year.
- Most deaths occur within ____________________ an hour of being stung.

Signs and Symptoms of Allergic Reaction
- Itching and burning
- Widespread __________________
- Wheals
  - __________________ of the lips and tongue
• Bronchospasm and wheezing
• Chest tightness and coughing
• _______________________
• Anxiety
• Abdominal cramps
• _______________________
• Loss of Consciousness

**Patient Assessment**
• Allergic symptoms are almost as varied as allergens themselves.
• Assessment should include evaluations of:
  - ______________________ system
  - Circulatory system
  - Mental status
  - _______________________

**Questions to Ask?**
• Have any interventions been completed?
• Do you have any prescribed, preloaded __________________ for allergic reactions?
• Do you have any respiratory symptoms?
• Do you have other ____________________?
• Have you had ____________________ allergic reactions, asthma, or hospitalizations?
• What were you doing or what were you exposed to before the onset of symptoms?

**Emergency Medical Care (1 of 2)**
• Give _______________________.
• Perform a focused history and physical examination.
  - Find out if the patient has a ______________________ of allergies.
Obtain baseline vital signs and a SAMPLE history.
Inform medical control.

Emergency Medical Care (2 of 2)

- Find out if the patient has a prescribed auto-injector.
- Be prepared to use standard airway procedures and CPR.
- _______________ the patient with the auto-injector if permitted or use EMS auto-injector.
- If bee sting, carefully _______________ stinger and venom sac away if present.
- Apply _______________.

Epinephrine (1 of 2)

- Mimics the _______________ (fight-or-flight) response
- Causes the blood vessels to constrict
- _______________ vasodilation and hypotension
- Increases cardiac contractility and relieves bronchospasm
- Rapidly reverses the effects of

Epinephrine (2 of 3)

- Indications include:
  - A severe _______________ reaction
  - Hypersensitivity to an _______________ substance
- Remember that your EMS service may or may not allow you to assist the patient in the administration of epinephrine. Call medical control!

Epinephrine (3 of 3)

- Normal adult dosage is __________mg via auto-injector (___________ to __________mg SC)
Pediatric dosage is normally _________mg via auto-injector (__________mg/kg SC).

In this area, EMS carries and utilizes either subcutaneous Epi or auto-injectors.

**27 Using an Epi Auto-Injector**

- Receive order from medical direction, __________________________ order
- Follow BSI precautions.
- Make sure the prescription is for the patient (or EMS).
- Make sure the medication is not __________________________ or expired.

**28 Epinephrine Auto-Injector**

- Epinephrine dilates bronchioles and constricts blood vessels
- Dosage:
  - Adult: ____________mg
  - Pedi: ____________mg
- Route is intramuscular (IM)

**29 Administering an Auto-Injector**

- __________________________ the injection site (bare and clean)
- Remove the safety cap.
- Place tip of the injector against the __________________________ side of the patient’s thigh.
- Push the injector firmly and hold until all of the medication is injected.
- Remove the injector.
- Record the time and dose.
- __________________________ and record vitals every 2-5 minutes.
**Auto-Injector Kit**

**Epinephrine Side Effects**
1. Pallor
2. Dizziness
3. Pain
4. Headache
5. Nausea
6. Headache
7. High BP
8. Anxiety
9. Cardiac

**Using an AnaKit (1 of 2)**
- Follow the same preliminary steps.
- Prepare injection site.
- Hold syringe so that air rises to base of needle.
- Turn plunger one turn.

**Using an AnaKit (2 of 2)**
- Insert needle .
- Push plunger until it stops.
- Have the patient chew and swallow  tablets.
- Apply a cold pack.

**Key Points**
- Epinephrine is a powerful drug and is not intended or indicated for allergic reactions; only anaphylactic reactions
- Follow local for Epinephrine
usage