1 Chapter 18 Immunologic Emergencies

2 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.

3 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.

4 Allergic Reactions
   • Allergic reaction
     • Exaggerated immune response to any substance
     • ____________________________ and leukotrienes
       • Chemicals released by the immune system
     • ____________________________
       • Substance triggering body’s immune system

5 Anaphylaxis
   • Extreme ____________________________ reaction
   • Involves multiple organs
   • Can rapidly result in ____________________________
   • Most common signs:
     • ____________________________
       • Urticaria (hives)

6 Severe Allergic Reaction

7 Five General Allergen Categories
   • ____________________________ bites and stings
   • 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

11. **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.

12. **Insect Stings (2 of 2)**

- Some ants, especially the ________________ ant, also strike repeatedly.
  - Often inject a particularly irritating ________________ at the bite sites

13. **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

14. **Wheal**

15. **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 ________________.

16. **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

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.
23 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 ____________________

24 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 ____________________

25 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!

26 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.

30 □ Auto-Injector Kit

31 □ Epinephrine Side Effects
• _______________________
• Pallor
• Dizziness
• _______________________ Pain
• Headache

32 □ 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.

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

34 □ Key Points
• Epinephrine is a powerful drug and is not intended or indicated for _______________________ allergic reactions; only anaphylactic reactions
• Follow local _______________________ for Epinephrine usage