UNIT TERMINAL OBJECTIVE

At the completion of this unit, the paramedic student will be able to integrate pathophysiological principles and assessment findings to formulate a field impression and implement a treatment plan for the patient with an allergic or anaphylactic reaction.

COGNITIVE OBJECTIVES

At the completion of this unit, the paramedic student will be able to:

5-5.1 Define allergic reaction. (C-1)
5-5.2 Define anaphylaxis. (C-1)
5-5.3 Describe the incidence, morbidity and mortality of anaphylaxis. (C-1)
5-5.4 Identify the risk factors most predisposing to anaphylaxis. (C-1)
5-5.5 Discuss the anatomy and physiology of the organs and structures related to anaphylaxis. (C-1)
5-5.6 Describe the prevention of anaphylaxis and appropriate patient education. (C-1)
5-5.7 Discuss the pathophysiology of allergy and anaphylaxis. (C-1)
5-5.8 Describe the common methods of entry of substances into the body. (C-1)
5-5.9 Define natural and acquired immunity. (C-1)
5-5.10 Define antigens and antibodies. (C-1)
5-5.11 List common antigens most frequently associated with anaphylaxis. (C-1)
5-5.12 Discuss the formation of antibodies in the body. (C-1)
5-5.13 Describe physical manifestations in anaphylaxis. (C-1)
5-5.14 Differentiate manifestations of an allergic reaction from anaphylaxis. (C-3)
5-5.15 Recognize the signs and symptoms related to anaphylaxis. (C-1)
5-5.16 Differentiate among the various treatment and pharmacological interventions used in the management of anaphylaxis. (C-3)
5-5.17 Integrate the pathophysiological principles of the patient with anaphylaxis. (C-3)
5-5.18 Correlate abnormal findings in assessment with the clinical significance in the patient with anaphylaxis. (C-3)
5-5.19 Develop a treatment plan based on field impression in the patient with allergic reaction and anaphylaxis. (C-3)

AFFECTIVE OBJECTIVES

None identified for this unit.

PSYCHOMOTOR OBJECTIVES

None identified for this unit.
I. Introduction
   A. Epidemiology
      1. Incidence
      2. Morbidity/ mortality
      3. Risk factors
      4. Prevention
   B. Anatomy
      1. Review of cardiovascular system
      2. Review of respiratory system
      3. Review of nervous system
      4. Review of gastrointestinal system
   C. Physiology
      1. Antigens
      2. Antibodies
         a. IgE
   D. Terminology
      1. Allergic reaction
      2. Anaphylaxis

II. Pathophysiology
   A. Allergen
   B. Routes of entry
      1. Oral ingestion
      2. Injected/ envenomation
      3. Inhaled
      4. Topical
   C. Common allergens
      1. Drugs
      2. Insects
      3. Foods
      4. Animals
      5. Other
   D. Allergic response
      1. Histamine or histamine-like substance release
      2. Biphasic response
         a. Acute reaction
         b. Delayed reaction
      3. Immunity
      4. Sensitivity
      5. Hypersensitivity
   E. Urticaria
      1. Redness of skin
   F. Angioneurotic
      1. Swelling/ edema of the skin
   G. Anaphylactic shock
      1. Cardiovascular system
      2. Respiratory system
      3. Gastrointestinal system
III. Assessment findings
A. Not all signs and symptoms are present in every case
B. History
   1. Previous exposure
   2. Previous experience to exposure
   3. Onset of symptoms
   4. Dyspnea
C. Level of consciousness
   1. Unable to speak
   2. Restless
   3. Decreased level of consciousness
   4. Unresponsive
D. Upper airway
   1. Hoarseness
   2. Stridor
   3. Pharyngeal edema/spasm
E. Lower airway
   1. Tachypnea
   2. Hypoventilation
   3. Labored - accessory muscle use
   4. Abnormal retractions
   5. Prolonged expirations
   6. Wheezes
   7. Diminished lung sounds
F. Skin
   1. Redness
   2. Rashes
   3. Edema
   4. Moisture
   5. Itching
   6. Urticaria
   7. Pallor
   8. Cyanotic
G. Vital signs
   1. Tachycardia
   2. Hypotension
H. Gastrointestinal
   1. Abnormal crampings
   2. Nausea/vomiting
   3. Diarrhea
I. Assessment tools
   1. Cardiac monitor
   2. Pulse oximetry low
   3. End tidal CO₂ high

IV. Management of anaphylaxis
A. Remove offending agent (i.e. remove stinger)
B. Airway and ventilation
1. Positioning
2. Oxygen
3. Assist ventilation
4. Advanced airway

C. Circulation
1. Venous access
2. Fluid resuscitation

D. Pharmacological
1. Oxygen
2. Epinephrine - main stay of treatment
   a. Bronchodilator
   b. Decrease vascular permeability
3. Antihistamine
4. Antiinflammatory/ immunosuppressant
5. Vasopressor

E. Psychological support

F. Transport considerations

V. Management of allergic reaction
A. Without dyspnea
1. Antihistamine

B. With dyspnea
1. Oxygen
2. Subcutaneous epinephrine
3. Antihistamine

VI. Patient Education