

## **APPENDIX XII: Unit #1 - Pathophysiology and Management of Anaphylaxis**

### **OBJECTIVES**

After this unit of study, the student should be able to:

1. Describe the structures and functions associated with the immune system.
2. Discuss antigens:
  - a. Examples
  - b. Four routes of introduction into the body.
3. Explain the production of antibodies (the antigen/antibody reaction).
4. Detail the physiology and pathophysiology of anaphylaxis.
5. Explain the acid/base and electrolyte imbalances resulting from anaphylaxis.
6. Discuss the effects of the pathological anaphylactic reaction on the following:
  - a. Respiratory system
  - b. Cardiovascular system
  - c. Skin
  - d. Central nervous system
  - e. Gastrointestinal system
7. Identify the two substances released by mast cells during anaphylaxis.
8. Identify the signs and symptoms of a patient with pathological anaphylaxis as related to:
  - a. Respiratory system
  - b. Cardiovascular system
  - c. Skin
  - d. Central nervous system
  - e. Gastrointestinal system
9. Describe the assessment and history (including pertinent negatives) of the patient with anaphylactic shock.
10. Identify the causes and treatments for anaphylaxis.
11. List the priorities of patient assessment and treatment for anaphylaxis.
12. Complete a drug card and discuss the following aspects for epinephrine, benadryl, Solu-Medrol® steroid, to include (\*information for both pediatric and adult):
  - a. trade name
  - b. generic name
  - c. classification

- d. actions
- e. dosage and route(s)
- f. indications
- g. contraindications
- h. precautions
- i. side-effects
- j. indications
- k. toxic effects

13. Define and explain the following terms:

- a) anaphylaxis
- b) antigen
- c) antihistamine
- d) bronchospasm
- e) histamine
- f) hives
- g) immune system
- h) mast cell
- i) shock
- j) steroid
- k) urticaria

### Pathophysiology and Management of Anaphylaxis

lesson	<b>Topic Outline</b>		<b>Assigned Reading</b>	
1	Review Shock Syndrome		<u>Paramedic Emergency Care</u>	Chapter 12,
	<ol style="list-style-type: none"> <li>1. definition</li> <li>2. parameters</li> <li>3. aerobic metabolism</li> <li>4. anaerobic metabolism</li> </ol>			
	Antigens		<u>Paramedic Emergency Care</u>	Chapter 25 (& other assigned readings)
	<ol style="list-style-type: none"> <li>1. definition</li> <li>2. examples</li> <li>3. method of introduction</li> </ol>			
2	Antibodies		Physiology for the Health Related Professions	Chapter 3
	<ol style="list-style-type: none"> <li>1. immune system</li> <li>2. definition</li> <li>3. production</li> </ol>			
	Anaphylaxis		Physiology for the Health Related Professions	Chapter 3
	<ol style="list-style-type: none"> <li>1. pathophysiology</li> <li>2. effects on systems</li> <li>3. signs and symptoms</li> <li>4. patient assessment</li> <li>5. patient history</li> <li>6. management</li> </ol>			
3	Pharmacological Agents		drug cards and master file	
	<ol style="list-style-type: none"> <li>1) oxygen</li> <li>2) epinephrine               <ol style="list-style-type: none"> <li>a) 1:1000</li> <li>b) 1:10,000</li> </ol> </li> <li>3) diphenhydramine</li> <li>4) aminophylline</li> </ol>			
4	Skills practice selecting medication - epinephrine 1:1000 or 1:10,000 - benadryl 25mgs or			*note: these skills are taught in another course and are only to be practiced here

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	<p style="text-align: center;">50mgs</p> <p>Medication checklist - right medication, right route, right patient, right dose, clarity, date, etc.</p> <p>select site - obtain informed consent - administer medication - observe for action, reaction and side effects</p>			

**Course Schedule**

**EMC 340**

**Tuesdays & Thursdays 09:15 - 11:30**

**Spring 2000    Disney 234**

**(Refer to complete syllabus for further details)**

<b><u>Date</u></b>	<b><u>Lesson</u></b>	<b><u>Topic</u></b>	<b><u>Reading</u></b>
01/18	1	Anaphylaxis	Paramedic Emergency Care Chapter 12 & 25
01/20	2	Anaphylaxis	Paramedic Emergency Care Chapter 12 & 25
01/25	3	Anaphylaxis	Paramedic Emergency Care Chapter 12 & 25 <i>Turn in drug cards</i>
01/27	4	Anaphylaxis (skills)	