

## Anaphylaxis

### ANAPHYLAXIS (and Anaphylaxis Prevention)

#### **30 Second Review**

#### **Anaphylaxis**

#### **RN, LPN**

**DEF:** A rapidly progressing, life-threatening allergic reaction.

**S/S:** Dyspnea, hives, intestinal irritation, and altered heart Rhythm. Can progress to airway obstruction, shock, and death.

**RX:** 1) **Epinephrine 1:1000 0.3cc SQ,**  
2) Benadryl 50-100 mg IM  
3) Oxygen 2-8L (NP or mask) or Ambu-bag (15L)  
4) Transport to Emergency Room  
5) While awaiting transport: Start IV, give nebulizer treatment, may repeat Epinephrine in 5 minutes

**SKILL LEVEL:** RN, LPN

**DEFINITION:** A hypersensitivity reaction usually occurring within seconds to minutes after exposure to an antigen. The reaction can move from moderate symptoms to shock to death rapidly. Symptoms may include flushing or pallor, cool clammy skin, itching, welts, confusion or change in LOC, breathing difficulty and/or vascular collapse.

**Note:** Generally, agents administered parenterally (injectables or insect stings) are more likely to result in life-threatening or fatal anaphylactic reactions than those ingested orally or administered topically to mucous membranes. Medications administered orally, such as aspirin or penicillin, however, have been associated with fatal reactions.

#### **DATA BASE:**

**Subjective:** Patient is identified as being exposed to allergen or rapid onset of objective features, even in the absence of notable history of exposure. Sometimes the trigger is never discovered.

**Objective:** Clinical features-Anaphylaxis is usually characterized by some or all of the following sequence of signs and symptoms. The sooner symptoms develop after the initiating stimulus, the more intense and dangerous the reaction may be.

- Generalized flush
- Pallor
- Cool clammy skin
- Urticaria

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- Swelling of the face, mouth or throat (“angioedema”)
- Paroxysmal coughing
- Severe anxiety
- Confusion
- Change in LOC
- Dyspnea
- Wheezing
- Orthopnea
- Vomiting
- Cyanosis
- Shock

### **Plan:**

**Treatment: Check for allergies before administering medical treatment.**

1. Transport patient immediately to hospital via ambulance. Any patient experiencing anaphylaxis should be hospitalized. Notify practitioner that transport has occurred, but do not delay transport.
2. Maintain airway. If possible, give Albuterol inhaler 2-4 puffs (or unit dose Nebulizer Treatment) immediately and again in 5 minutes as needed.
3. Start Oxygen O<sub>2</sub> by nasal canula or mask at 4-8 L/min. If the patient has a slow ineffective respiratory rate, use Ambu-bag at high flow (15L)
4. Give the following medications:
  - Epinephrine Give 0.3 ml. of 1:1000 epinephrine (May repeat in 5 minutes).
  - Benadryl 50-100 mg IM
5. If time allows while ambulance is enroute, start an IV and give intravenous fluid normal saline or lactated Ringer's solution rapidly to support blood pressure. In anaphylaxis, shock results from vasodilation and subsequent inadequate plasma volume. Consider running a liter or two of fluids in “wide open”: 1000 ml per 15-30 minutes
6. Maintain a flow sheet with time, vital signs, and medications administered.
7. For patients with rapidly evolving symptoms of urticaria and/or angioedema of the face, mouth, or throat, give Benadryl 50-100mg IM and observe for improvement and/or call the medical provider.

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If worsening symptoms, consider moving to step 1 above, prepare for emergency transport.

8. For patients with mild symptoms of itching and flushing without dyspnea and with a slow onset of symptoms, see Urticaria protocols.

### **Complications:**

**Upper airway obstruction**-Pharyngeal, uvular, or laryngeal edema, or any combination of these, can develop acutely. Observe respiratory status frequently. Be prepared to insert oral airway.

**Lower airway obstruction**-Bronchospasm may be so severe that decreased tidal volume makes wheezing inaudible.

**Hypotension**-Frequent pulse and blood pressure determinations should be done. Use Trendelenburg's position if possible.

**Cardiac arrhythmias**-Arrhythmias may arise owing to hypoxia, especially in adults. Be ready to begin CPR if the patient's condition deteriorates.

**Aspiration of gastric contents**-Vomiting often accompanies anaphylaxis, especially with Hypoxic seizures or Cardiac arrest.

### **Nursing Education:**

- Suspected overdose of narcotic/opiate is treated with Narcan, not Epinephrine and Benadryl. (see "Poisoning/Overdose")

Agents commonly associated with anaphylaxis include the following. This list is not exhaustive.

- Antibiotics (especially penicillin and its semisynthetic derivatives)
- Biologicals
  - Nonhuman serums
  - Gamma globulin
  - Influenza vaccine
  - Tetanus toxoid
  - Measles and other egg-based vaccines
- Injectable medications
  - Imferon (iron dextran injection)
  - Dextran
- Local anesthetics

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- Aspirin
- Hymenoptera stings (bee, yellow jacket, wasp, and hornet)
- Allergic extracts (skin-testing and treatment solutions)
- Foods (especially eggs, nuts, and shellfish)

Before administering or prescribing any medication, inquire carefully for a history of reactions. Note: anaphylactoid reactions can occur without prior known exposure and sensitization.

Minimize the use of biologic products (e.g., horse antiserum, unnecessary boosters of tetanus toxoid). After receiving an agent capable of inducing anaphylaxis (e.g. injection of antibiotic, allergy shot, vaccine, etc.) the patient should be required to remain in the clinic for at least 15 minutes.

Symptoms beginning within 15 minutes after administration of the inciting agent require the most expedient management.

### Patient teaching:

Avoid allergen. If a patient is allergic to insect venom, he should be counseled not to go barefoot, to avoid fields of flowers, ripe fruit, bright-colored clothing and perfume during warm weather.

**Follow-up:** An allergy label should be placed on the front cover of the patient's health care record. This note **must** reflect the date of the reaction. Enter the information in the DOC 400 as well.

### APPROVED:

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