Anaphylaxis in the ED:
A Reference for Physicians

This reference for emergency physicians was developed by an expert panel of allergists and emergency physicians convened by the American College of Allergy, Asthma and Immunology (ACAAI).* The recommendations are based on a review of the latest evidence-based research, consensus guidelines and clinical experience.

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Epinephrine dosages for allergic reactions:

When an exact dose can be administered:
0.01 mg/kg IM (maximum 0.5 mg)

When using a fixed-dose auto injector:
Children weighing >23 kg/50 pounds and adults: 0.3-mg dose
Children <23 kg: 0.15 mg dose.

Administer every 5 to 15 minutes as necessary to control symptoms.
The 5-minute interval can be liberalized for more frequent injections if necessary.

ANAPHYLAXIS/SEVERE ALLERGIC REACTIONS IN THE ED

- **Evaluate symptoms/patient history.**
- **Use epinephrine as the first-line therapy** for anaphylaxis, for severe allergic reactions, and for those at risk of anaphylaxis.
- **When in doubt, administer epinephrine.**
- **Document the patient presentation and ED course** clearly to facilitate follow-up evaluation.
- **Provide prescriptions for epinephrine auto-injectors at discharge** and instruct family members/caretakers to fill prescription while patient is still in ED if possible.
- **Discuss when to use the epinephrine auto-injector and "return to ED"** criteria prior to discharge in the event of a biphasic reaction.
- **Provide an Action Plan** for potential future events.
- **Refer to an allergist** (or to PCP with recommendation for allergist referral).

Managing Anaphylaxis and Severe Allergies

- Administer epinephrine (adrenalin) as first-line therapy for anaphylaxis and severe allergic reactions.[1-4]
- Epinephrine in appropriate intramuscular (IM) doses is safe and there are no absolute contraindications for its use in treating anaphylaxis.[5]
- Delay in administration of epinephrine may lead to more severe and treatment-resistant anaphylaxis.[6-10]
- Epinephrine administration is indicated for use in anaphylaxis, severe allergic reaction or for patients identified as being at risk of anaphylaxis, based upon a previous severe reaction, who have had imminent exposure to their allergic trigger with or without the development of symptoms.[1-4]
- The National Institutes of Allergy and Infectious Disease/Food Allergy and Anaphylaxis Network (NIAID/FAAN) clinical criteria are useful in diagnosing anaphylaxis, but the criteria do not have to be met in order to administer epinephrine.[4]
- Antihistamines and steroids are not indicated as first-line treatment for anaphylaxis but may be administered following the administration of epinephrine if considered to be appropriate in the judgment of the treating professional.[1-4]
- Provide a prescription for epinephrine auto-injectors and an action plan for their use prior to discharge for patients treated in the emergency setting for anaphylaxis, severe allergic reaction, and those who are at risk of a future event.
- Refer patients to an allergist to assist with diagnosis confirmation, trigger identification, and continued outpatient management.
- Document vital signs, triggers considered, the sequence and timeline of events preceding anaphylaxis onset, the severity of the episode, organ systems involved, medications administered, how quickly the patient responded to treatment, and the observation time prior to discharge or admission.

Patient Observation

Patients who respond to therapy require observation, as symptoms may recur in some patients. Although there is no agreement on length of observation, clinical experience suggests that it is reasonable to observe patients for an hour after the physician determines the patient is stable. Patients who may benefit from longer observation include those who:

- Had hypotension
- Required more than one epinephrine injection for resolution of symptoms
- Required breathing treatments for wheezing in addition to epinephrine
- Have a history of asthma

**Fineman SM, Bowman SH, Campbell RL, Dowling P, O'Rourke D, Russell WS, Sublett JW, Wallace D. Addressing barriers to emergency anaphylaxis care: From emergency medical service to emergency department to outpatient follow-up. Ann Allergy Asthma Immunol. 2015; 115(4):301-5.*

Anaphylaxis Signs and Symptoms

Symptoms of anaphylaxis are usually sudden in onset and can progress in severity over minutes to hours. Typically, at least two organ systems are involved, although only one organ system might be initially involved. There is a broad spectrum of anaphylaxis presentations that require clinical judgment.[4]

Some common symptoms, which patients may feel or notice before they become apparent or more obvious to others, include:[11]

- General sense of pending doom or anxiety
- Shortness of breath, wheezing, coughing, shallow breathing
- Stomach cramps, nausea, vomiting, diarrhea
- Runny or itchy nose, sneezing
- Red or watery eyes
- Itchy mouth or throat
- Difficulty swallowing

Signs/symptoms that are more obvious:

- Lips and/or tongue swell
- Face or skin rashes, hives, swelling, redness, facial swelling
- Choking
- Weak pulse, low blood pressure, dizziness, passing out, loss of consciousness

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