

Anaphylaxis

Simons FER. *J Allergy Clin Immunol* 2010;125:S161-81.
Arnold JJ, Williams PM. *Amer Fam Phys* 2011; 84(10):1111-8.

Definition: "A serious allergic reaction that is rapid in onset and might cause death"

Mechanism: IgE-mediated immune reaction

Pearl: Hypotension is NOT required to diagnose anaphylaxis.

Triggers: Almost any food, allergens, or medication can be a trigger

- Common culprits: Abx (esp beta-lactams), NSAIDs, peanuts, shellfish

Organ involvement: Skin 80-90%, Resp 70%, GI 45%, CV 45%, CNS 15%

Biphasic anaphylaxis pattern: 2nd flare may occur despite trigger removed (typically within 72 hours of onset)

Diagnostic criteria (highly likely if 1 of 3 criteria fulfilled) per 2nd National Institute of Allergy and ID/Food Allergy and Anaphylaxis Network

1. Acute onset (min-several hrs) with involvement of skin, mucosa, or both (eg. hives, pruritis, flushing, facial angioedema) AND at least 1 of following:
 - A. Respiratory compromise (eg. SOB, wheezing, stridor, reduced PEF, hypoxemia)
 - B. Reduced BP or associated sx of end-organ dysfunction (hypotonia, syncope, incontinence)
2. Two or more of following that occur rapidly after exposure to likely allergen:
 - A. Involvement of skin-mucosal tissue (eg. hives, itch-flush, facial angioedema)
 - B. Respiratory compromise (eg. SOB, wheezing, stridor, reduced PEF, hypoxemia)
 - C. Reduced BP or associated dx (eg. hypotonia, syncope, incontinence)
 - D. Persistent GI sx (eg. cramping abdominal pain, vomiting)
3. Reduced BP after exposure to known allergen
 - A. Infants/children: Low SBP (age specific*) or >30% decrease in SBP
 - B. Adults: SBP <90 mmHg or >30% decrease in person's baseline

* Low pediatric SBP definitions:

Age 1 mo-1 yr: SBP < 70 mmHg

Age 1 yr-10 yr: SBP < (70 mmHg + [2 x age])

ED management:

- Supine position, ABC's
- **IM epinephrine** STAT. Repeat every 5-15 min if refractory.
 - 0.3-0.5 mg for adults = 0.3-0.5 mL of 1:1000 concentration of epinephrine
 - 0.15 mg for pt wt <30 kg
 - **IM injection into lateral thigh** – quickest absorption centrally
- IV fluids 2 liters
- **H1 antagonist** (eg. Benadryl)
- **H2 antagonist** (eg. Ranitidine)
- **Glucocorticoids** (eg. Methylprednisolone; may blunt biphasic response)
- **Albuterol (beta-agonist) nebulizer** for wheezing/ lower airway obstruction
- Consider: **Glucagon** 3.5-5 mg IV if refractory to epinephrine and on beta-blockers
- If discharging patient home after observation, prescribe **epinephrine pen!**

