

# 353 Anaphylaxis

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## ■ BACKGROUND

Anaphylaxis is a potentially life-threatening systemic allergic reaction involving one or more organ systems that typically occurs within seconds to minutes of exposure to the anaphylactic trigger, most often a drug, food, or Hymenoptera sting. The term *anaphylaxis* was first described in 1902 by Charles Richet and Paul Portier who attempted to immunize dogs against sea anemone toxin in the same way Pasteur was able to vaccinate individuals against the smallpox virus. To their surprise, repeated administration of small, sublethal doses of sea anemone toxin reliably induced acute-onset death when readministered 2–3 weeks after initial “vaccination” to the toxin. The phenomenon was termed ana (anti)-phylaxis (“protection or guarding”) because vaccination with anemone toxin resulted in the opposite intended immune effect. Charles Richet was awarded the Nobel Prize in Physiology or Medicine in 1913 for this work, which led to further insights into hypersensitivity and mast cell biology.

## ■ CLINICAL MANIFESTATIONS

While 80–90% of anaphylactic episodes are uniphasic, about 10–20% of cases are biphasic, in which anaphylactic symptoms return about an hour or longer after resolution of initial symptoms. Anaphylactic reactions are particularly dangerous when hypotension or hypoxia occurs, leading potentially to cardiovascular collapse or respiratory failure, respectively. There may be upper or lower airway obstruction or both. Laryngeal edema may be experienced as a “lump” in the throat, hoarseness, or stridor, whereas bronchial obstruction is associated with a feeling of tightness in the chest and/or audible wheezing. Patients with underlying asthma are predisposed to severe involvement of the lower airways and increased mortality associated with anaphylaxis. In fatal cases with