Anaphylaxis and Urticaria

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KEYWORDS

• Anaphylaxis • Urticaria • Treatment • Prevention

KEY POINTS

- Anaphylaxis is a serious, life-threatening allergic reaction that affects approximately 2% of the population.
- Urticaria is a rash of transient, erythematous, pruritic wheals that affects up to 25% of the population.
- All cases of anaphylaxis warrant thorough clinical evaluation by the allergist–immunologist, although most cases of urticaria are self-limited and do not require specialist referral.

INTRODUCTION

Anaphylaxis is an acute, severe systemic allergic reaction that can ultimately lead to death if not recognized early and treated properly. Resulting from the rapid release of mast cell–derived and basophil-derived mediators, an anaphylactic reaction can begin quickly and be difficult to control. Fortunately, if recognized early, anaphylaxis can be easily treatable.

Although often a component of anaphylaxis, urticaria is a common allergic complaint that can occur as an isolated incident or as a recurring problem. Urticaria is a rash that consists of transient, erythematous, pruritic, and usually blanching wheals. They can be found on any part of the body and can be triggered by a multitude of eliciting factors. Often, urticaria is quite bothersome and can last from minutes to months.

This article summarizes our current knowledge on the epidemiology, pathogenesis, associated triggers, diagnosis, and treatment of both anaphylaxis and urticaria. Preventative strategies are also discussed.

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ANAPHYLAXIS

Epidemiology

Anaphylaxis is an acute, life-threatening systemic allergic reaction that affects up to 2% of the population.[1,2] The majority of cases of anaphylaxis are in children, where the prevalence of food allergy has been estimated as high as 8%.[2–4] The exact proportion of cases resulting in fatality is unknown, but is rare overall.[5]

Recently a nationwide, cross-sectional, random digital dial telephone survey of 1000 adults was completed. In this population, nearly 8% of participants reported a prior anaphylactic reaction, but, when symptoms were evaluated, the lifetime prevalence of anaphylaxis was 1.6%.[6]

Previously, anaphylaxis was characterized as an allergic reaction that involved 2 or more organ systems or hypotension.[7] However, in the last 10 years, formal clinical diagnostic criteria for anaphylaxis have been developed by the National Institute of Allergy and Infectious Diseases and the Food Allergy and Anaphylaxis Network (now known as Food Allergy Research and Education; **Box 1**).[8] Despite these criteria,

Box 1
Diagnostic criteria for anaphylaxis

Anaphylaxis is diagnosed when 1 of the following criteria is met:

1. Development of acute illness within minutes to hours after exposure causing skin and/or mucosal tissue involvement (eg, rash, generalized urticaria, pruritus, flushing, angioedema, laryngeal edema).

   And at least 1 of the following are present:

   - Evidence of respiratory compromise (eg, dyspnea, cough, difficulty breathing, wheezing, stridor);
   - Hypotension (defined in point 3) or evidence of end organ dysfunction (eg, syncope, hypotonia, urinary incontinence).

2. Development of 2 or more of the following within minutes to hours after exposure to a likely allergen for that patient:

   - Skin or mucosal tissue involvement, including rash, generalized urticaria, pruritus, flushing, angioedema, laryngeal edema;
   - Respiratory compromise, including dyspnea, cough, difficulty breathing, wheezing, stridor, and hypoxia;
   - Hypotension or symptoms concerning for hypotension, including syncope, hypotonia, and urinary incontinence; and
   - Gastrointestinal symptoms, including nausea, vomiting, diarrhea, and crampy abdominal pain.

3. Development of hypotension within minutes to hours after exposure to a known allergen for that patient:

   - Infants and children age less than 1 year: SBP less than 70; children ages 1 to 10 years: SBP < (70 mm Hg + [2 × age in years]); children ages 11 to 17 years: SBP less than 90 mm Hg; or for all children: A greater than 30% decrease from that person's baseline.
   - Adults: SBP less than 90 mm Hg or greater than 30% decrease from that person's baseline.

Abbreviation: SBP, systolic blood pressure.

Adapted from Sampson HA, Muñoz-Furlong A, Campbell RL, et al. Second symposium on the definition and management of anaphylaxis: summary report–second National Institute of Allergy and Infectious Disease/Food Allergy and Anaphylaxis Network symposium. Ann Emerg Med 2006;47(4):374; with permission.