

Chronic Spontaneous Urticaria

Etiology and Pathogenesis

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KEYWORDS

• Chronic urticaria • Mast cells • Basophils

KEY POINTS

- Acute urticaria occurs in up to 20% of the population, and may be associated with a drug or food allergy or with infection. It is generally self-limited.
- Chronic urticaria affects up to 1% of the population, and in most cases lesions occur spontaneously without an identifiable external cause.
- Approximately 20% of patients with chronic urticaria have a reproducible physical trigger for their skin lesions, termed physical urticaria.
- There are multiple theories of pathogenesis for chronic urticaria, none of which is clearly established. One theory is that a subset has an autoantibody-mediated disease process.
- Abnormalities in skin mast cells and blood basophils have been described in chronic urticaria.

INTRODUCTION

Urticaria, also known as hives, is a very common condition thought to affect up to 20% of the population in their lifetime.¹ This skin condition is characterized by the appearance of pruritic, erythematous papules or plaques with superficial swelling of the dermis. The major complaint is the symptom of pruritus. Urticaria can be classified by both time course of symptoms and the underlying etiology. Acute urticaria is defined as having skin-symptom duration of less than 6 weeks, whereas chronic urticaria (CU) is generally defined by the presence of urticaria on most days of the week for a period of 6 weeks or longer.

CU is further classified by additional criteria. Approximately one-fifth of CU patients have a clear-cut physical trigger for their skin eruptions, therefore it is termed physical urticaria. These cases are labeled according to the nature of the inciting stimulus

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(Table 1; see also the article by Maurer and colleagues elsewhere in this issue).^{2,3} Among the causative physical factors are dermographism, delayed-pressure urticaria, cholinergic urticaria, cold- and heat-contact urticaria, solar urticaria, aquagenic urticaria, exercise-induced urticaria, and vibratory urticaria. In the remaining 80% of CU, no external allergen or contributing disease process is identified and, thus, the condition is termed chronic idiopathic urticaria (CIU), which has also more recently been labeled as chronic spontaneous urticaria (CSU).⁴ Approximately 40% of patients with CIU/CSU will also report accompanying episodes of angioedema or deeper swelling of dermal or mucosal tissues, whereas 10% have angioedema as their main manifestation.^{5,6} In this review, the terms CSU and CIU are used synonymously. Some guidelines and experts further divide CIU/CSU patients based on serologic evidence of a presumed autoimmune etiology (observed in 30%–40% of these subjects), and call the condition chronic autoimmune urticaria (CAU). In this setting, the remaining 60% to 70% of patients are classified as CIU/CSU.^{4,7}

EPIDEMIOLOGY

Given that the lifetime risk of an episode of urticaria is 20% to 25%, several conditions have been noted to be associated with urticaria. In acute urticaria, 20% of cases have

Disorder	Trigger Factor	Test Description
Dermographism (urticaria factitia)	Stroking, scratching, pressure	Mild stroking of skin with tip of pen or tongue blade, or dermatographer
Delayed-pressure urticaria	Application of pressure 30 min to 12 h before onset	Shoulder sling placed for 15 min weighing 7 kg; patient records symptoms over 24 h
Cholinergic urticaria	Elevation of body temperature with exercise, hot water, strong emotion, or spicy food	Exercise with a stationary bike for 15 min beyond sweating Passive heating of one arm to 42°C with water bath Evidence of reaction to sweat antigen
Cold-contact urticaria	Exposure of skin to cold air, cold objects, or cold liquids	Ice cube test for 5 min on arm Temperature test where available
Heat-contact urticaria	Warm object in direct contact with skin	Application of test tube containing warm water at 45°C
Aquagenic urticaria	Skin contact with water at any temperature	Application of water compress at 35°C for 30 min
Solar urticaria	Exposure of skin to sunlight of specific wavelength	Exposure of skin to ultraviolet A, ultraviolet B, or visible light
Vibratory urticaria	Lawn mowing, riding a bike, exposure to vibrating machinery	Vortex platform held to skin for 10 min

Data from Magerl M, Borzova E, Gimenez-Arnau A, et al. The definition and diagnostic testing of physical and cholinergic urticarias-EAACI/GA2LEN/EDF/UNEV consensus panel recommendations. *Allergy* 2009;64:1715–21.

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