

Supplement Table 1. The diagnostic method of subtypes in chronic urticaria

Type	Diagnostic method
Dermographism	linear stroking at various pressures (20~144 g/m ²) using dermatographometer, Frick Test or ball point pen ¹¹ .
Pressure urticarial	A 100 g/m ² of pressure for 5~180 seconds duration on the forearm using a dermatographometer and 15 lbs. weight bearing on shoulder or lower leg for 15~20 minutes ^{11,12} .
Vibratory angioedema	A laboratory vortex mixer can be used as a provocation tool. The forearm is kept on a flat plate laid on the vortex mixer, which is run between 780 rpm and 1,380 rpm for 10 minutes. After 10 minutes the patient should be checked for swelling at the site of provocation ¹² .
Cold urticaria	A typical case of cold urticaria can easily be recognized by the patient history and can be confirmed by a simple cold stimulation test, during which an ice cube, melting in a see-through plastic bag, is placed on the skin for 5 minutes. Ten minutes after removal of the cube a local wheal will develop. Shorter or longer provocation times may be used for some patients, e.g., 30 seconds (in patients who are very sensitive or afraid of strong reactions) and up to 20 minutes (in patients with a positive history but no reaction after 5 minutes) ¹² .
Cholinergic urticaria	Moderate physical exercise, matching the patient's age and general condition, should be applied (e.g., on a stationary bicycle or on a treadmill). Patient should reach the point of sweating and continue for another 15 minutes. If this first step is positive, a passive warming test should be performed at least 24 hours later (full bath at 42°C for up to 15 minutes until body core temperature rises more than 1°C), in order to rule out exercise-induced urticaria/anaphylaxis ¹² .
Local heat urticarial	The diagnostic method of choice is skin testing with metal or glass cylinders filled with warm water or a warm water bath ¹¹ . Heat provocation testing is performed for 5 minutes with a temperature of 45° on the volar forearm. The provocation time and temperature can be adapted individually. If a palpable, clearly visible wheal and flare type skin reaction occurs, the test reaction is rated positive ¹¹ .
Aquagenic urticarial	Aquagenic urticaria presents with urticarial symptoms after contact with water. Diagnostically, wet cloths at body temperature can be applied to the patient for 20 min ¹² .
Autoimmune urticarial	Thyroid function tests, anti-microsomal antibody, anti-thyroglobulin antibody, autologous skin test, in vitro anti-IgE receptor ¹³ .
Urticarial vasculitis	In this condition the wheals last more than 24 h ± often as long as 48 h or even longer. Unlike chronic idiopathic urticaria, the wheals of urticarial vasculitis may leave purpuric staining of the skin. Only a skin biopsy can resolve this issue. Urticarial vasculitis should not be deemed to be conformed in the absence of histologic evidence ¹⁴ .
Allergic urticaria	Diagnosis is based on a thorough history, which should cover possible trigger factors, such as infections (e.g., acute viral upper respiratory infections), medications (e.g., non-steroidal analgesic drugs), and foods. Only very strong symptoms and a history pointing to relevant sensitizations to type I allergens, e.g., to foods or drugs, should prompt skin prick testing, and measurements of specific IgE ¹⁴ .
Hereditary angioedema	The 3 types of HAE can be differentiated with complement testing and, in the case of HAE with normal C1 inhibitor levels, genetic testing ¹⁵ .

IgE: immunoglobulin E, HAE : hereditary angioedema C: complement.