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Cold urticaria

What is cold urticaria?

Cold urticaria is a relatively uncommon physical [urticaria](#). There are two forms of cold urticaria, a rare familial (hereditary) form and a more common acquired form. With both forms an urticarial rash develops after being exposed to cold, cold water, and cold objects.

What causes cold urticaria?

Cold urticaria is caused by exposure to cold. Why the cold stimulus causes the activation of mast cells and subsequent release of histamine and other inflammatory mediators remains unknown.

The acquired form of cold urticaria may be primary (idiopathic) or secondary to an underlying haematologic (blood condition) or infectious disease. Most cases are of the idiopathic (unknown cause) type. Underlying conditions that have been associated with cold urticaria include [cryoglobulinemia](#), chronic lymphocytic leukaemia, lymphosarcoma, ([chickenpox](#)) (varicella), hepatitis and infectious mononucleosis (glandular fever).

Swimming in cold water is the most common cause of a severe cold urticarial reaction. Because of the potential risk of a severe reaction and subsequent drowning, all patients with cold urticaria should be supervised during aquatic activities.

What are the clinical features of cold urticaria?

The onset of rash after exposure to cold differs between the acquired and hereditary forms.

- In the acquired form, symptoms become obvious in 2–5 minutes after exposure and last for 1–2 hours.
- In the hereditary form, symptoms may not become obvious until 9 to 48 hours after exposure and may last for up to 24–48 hours.

Signs and symptoms of cold urticaria include:

- Itchy weals (urticaria) and [angioedema](#) that may be localised (affecting certain parts of the body) or generalised (rash over the whole body).
- In some cases systemic symptoms may develop
 - Shortness of breath, wheezing
 - Abdominal pain, gastrointestinal ulcers
 - Rapid and irregular heartbeat
- In very severe cases hypotension (drop in blood pressure), shock, collapse and even death may occur

Who gets cold urticaria?

Acquired cold urticaria most often affects young adults between 18 and 25 years. It is commonly associated with the physical urticarias [dermographism](#) and [cholinergic urticaria](#). The condition lasts for an average of 5–6 years.

How is the diagnosis made?

Cold urticaria can be diagnosed by applying an ice cube against the skin of the forearm for 1–5 minutes. A distinct red swollen rash should develop within minutes in the area exposed to the cold–stimulation test if a patient has cold urticaria. Complete blood counts and metabolic tests may also be performed to determine any associated diseases.

Cold urticaria – ice–cube test



Ice applied to normal skin



Red patch on removal of ice



Enlarging weal 5 minutes later



What is the dtreatment for cold urticaria?

Patients with cold urticaria should learn to protect themselves from a rapid drop in body temperature. Any aquatic activities (e.g. swimming, surfing) should be done under supervision at all times.

Regular doses of [antihistamines](#) have generally proven to be ineffective, but high doses may be helpful (e.g., four times the usual dose). Some related medications that have been found to be useful include cyproheptadine, doxepin and ketotifen.

Patients that develop [anaphylactic reactions](#) should carry emergency adrenaline.

There have been reports of successful treatment with leucotriene antagonists, [ciclosporin](#), [systemic corticosteroids](#) and [oral antibiotics](#).

Cautious induction of cold tolerance by gradually hardening the skin to cold conditions and then exposing the skin to it regularly e.g., by taking regular cold showers.

Related information

References:

- Book: Textbook of Dermatology. Ed Rook A, Wilkinson DS, Ebling FJB, Champion RH, Burton JL. Fourth edition. Blackwell Scientific Publications.
- [Kim G. Primary \(idiopathic\) cold urticaria and cholinergic urticaria. Dermatology Online Journal 10 \(3\):13](#)

On DermNet NZ:

- [Urticaria](#)
- [Contact urticaria](#)
- [Cholinergic urticaria](#)

- [Angioedema](#)
- [Dermographism](#)

Other websites:

Books about skin diseases:

See the [DermNet NZ bookstore](#)

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