

GRADING OF THE WHEALING RESPONSE IN CASES WITH COLD URTICARIA

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Summary

Seven patients having cold urticaria and showing whealing response to the cryo-stimulation test were tested again after adjusting the temperature of the exposure surface at 0, 5, 10, 15, 20, 25 and 30°C to determine the maximum temperature capable of producing a wheal in the patient (CTW). It was 25°C in 2 patients and 20°C in 3. In the remaining 2 patients, whealing at the test site was absent with 30°C, incomplete with 25°C and complete with 20°C. On repeating the CTW in 5 patients within 7 days, it was found to be the same.

It is now well recognised that cold urticaria is far commoner^{1,3} than believed a few years ago⁴, and all cases do not develop a wheal when tested with ice-cold temperatures^{5,6}. Thermo-stimulator⁷, a simple device designed by us to apply a measured stimulus of cold, proved quite useful in confirming the diagnosis of cold urticaria in cases who do not develop whealing with an ice-cube^{6,8}. In addition, the thermo-stimulator helps in grading the sensitivity of an individual patient to cold. The present report describes a method for grading the cold sensitivity of patients who develop whealing when tested with the thermo-stimulator.

Materials and Methods

Seven patients with the following two characteristics were included in the study. Firstly, they fulfilled the clinical criteria for the diagnosis of idiopathic acquired cold urticaria¹ and secondly, all of them showed whealing response

to the standard cryo-stimulation test (CST)⁸.

Each of these patients was tested with the thermo-stimulator after adjusting the temperature of the exposure surface at 0, 5, 10, 15, 20, 25 and 30°C. Each test was done at a different area of the back and the thermo-stimulator was applied for exactly 2 minutes. The maximum temperature which produced whealing on the skin was designated as the *critical temperature for whealing* (CTW).

In 5 patients, the tests were repeated within 7 days to check constancy of the CTW.

Results

Response of the 7 patients to the CST at various temperatures is shown in table 1. The CTW was 25°C in 2 patients and 20°C in 3. In the remaining 2 patients, the test with 25°C resulted in a wheal which did not cover the entire stimulated area; the test with 20°C resulted in a complete wheal while with 30°C there was no whealing.

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Determination of critical temperature for whealing (CTW) in various patients.

Patient Number	Whealing response to the cryo-stimulation test at						
	0°C	5°C	10°C	15°C	20°C	25°C	30°C
1.	+	+	+	+	+	+	—
2.	+	+	+	+	+	±	—
3.	+	+	+	+	+	—	—
4.	+	+	+	+	+	±	—
5.	+	+	+	+	+	—	—
6.	+	+	+	+	+	+	—
7.	+	+	+	+	+	—	—

± response means incomplete whealing of the stimulated area.

Out of 5 patients in whom the CTW was determined again within 7 days, it remained the same in 4 cases. In the fifth case, the wheal was complete with 20°C, incomplete with 25°C and negative with 30°C during the first test. During repeat testing after 3 days, there was complete whealing with 20°C, but no wheal with 25°C. A third test 4 days later showed again complete whealing with 20°C, but no wheal with 25°C.

Discussion

Determination of the critical temperature for whealing has two clinical applications. Firstly, it gives an indication about the temperature of the environment or any other incident stimulus which is likely to precipitate an attack of urticaria in that patient, and secondly, it is useful in assessing the progress of the disease and the effect of any therapeutic procedure in the patient. Constancy of the CTW on repeat testing shows that the test is dependable. Another possible method for grading the cold hypersensitivity consists of keeping the temperature of the exposure surface constant at 0°C, and varying the period for which it is applied to the skin.

References

1. Pasricha JS and Nayyar KC: Idiopathic acquired cold urticaria in North India. *Ann Allergy*, 34: 363, 1975.
2. Sarojini PA, Gopinathan T and Mohandas PP: Studies on 100 cases of urticaria with particular reference to the etiology. *Ind J Derm and Vener*, 38: 132, 1972.
3. Misra RS, Ratan Singh and Pandhi RK: Essential cold urticaria. *Ind J Derm Vener and Leprol*, 43: 242, 1977.
4. Houser DD, Arbesman CE, Ito K and Wicher K: Cold urticaria, immunologic studies. *Am J Med*, 49: 23, 1970.
5. Sarkany I and Gaylarde PM: Negative reactions to ice in cold urticaria. *Brit J Derm*, 85: 46, 1971.
6. Pasricha JS and Nayyar KC: An exaggerated erythema response to a cold pressure test in patients with cold urticaria. *Brit J Derm*, 89: 587, 1973.
7. Pasricha JS, Kandhari KC and Malhotra YK: Thermo-stimulator - A device to investigate cases of physical urticaria. *Ind J Derm and Vener*, 35: 99, 1969.
8. Pasricha JS and Nayyar KC: Evaluation of cryo-stimulation test for the diagnosis of cold urticaria. *Ann Allergy*, 35: 382, 1975.