Minimal Effect of Complete H_1 Receptor Blockade on Urticaria pigmentosa

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The effect of complete H1 receptor blockade on urticaria pigmentosa was studied in 6 patients. Astemizole 10 mg tds was given for 6 weeks to achieve complete H1 receptor blockade and the response measured by change in force-weal response measurements using two different forces on a dermographic stylus and measuring response as weal diameter. Weal and flare reactions to 8 μg histamine were completely abolished by the astemizole but dermographic weal-force responses were reduced only by 12–15% indicating that histamine acting at the H1 receptor plays only a small part in the wealing of urticaria pigmentosa. (Received January 22, 1985.)

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Skin mast cells are greatly increased in number in urticaria pigmentosa and the clinical features of itching and wealing are attributed to histamine release. Our recent finding that prolonged administration of a large dose of astemizole will completely inhibit the histamine weal and flare (1) allowed us to test this view.

Table I. *Diameters of dermographic weals produced by two forces before and after astemizole 40 mg tds for 6 weeks in 6 patients with urticaria pigmentosa*

Stylus force (g/cm^2)	Weal diameter		
	Pre-treatment	Post treatment	Difference %
56	3.6±0.4	3.4±0.4	11.6±4
85	4.0±0.5	3.7±0.4	14.7±4

MATERIALS AND METHODS

Six patients with urticaria pigmentosa were studied, 2 men and 2 women aged 40–60, 1 girl of 5 and 1 boy of 2. The diagnosis had been made clinically and histopathologically and all had dermographic wealing. Dermographic wealing was induced by a spring-loaded stylus and the response measured as weal diameter as previously described (2) using forces of 56 and 85 g/cm^2 on the stylus head before and after astemizole 10 mg tds for 6 weeks. We have previously shown this regimen to produce total inhibition of the histamine weal and flare response (1). Confirmation of this effect was sought in 3 of the adult patients using 8 μg histamine in 0.1 ml NaCl with 0.1 ml saline as control, measuring weal area at 10 min with a planimeter (3).

RESULTS

Before treatment all 6 patients gave a brisk dermographic response with both stylus forces (Table I). After 6 weeks of astemizole 10 mg tds there was little clinical change and only the small reduction in weal-force potency of 12–15% (Table I). At this time there was no weal and flare response to 8 μg intradermal histamine.

DISCUSSION

Our findings are that astemizole in a regimen which inhibits histamine weal and flare potency by more than 98% (1) produced only 13% inhibition of the dermographic weal response in patients with urticaria pigmentosa. Likewise there was little clinical improvement. We therefore conclude that the clinical features of urticaria pigmentosa are due only in small part to H1 active histamine. This presumably explains the poor response of urticaria pigmentosa to antihistamines and drugs which modify histamine metabolism. The involvement of substances other than histamine, e.g. mast cell proteases, would also explain the occurrence of bullae from dermo-epidermal separation since we have never produced blisters by experimental injection of histamine in many hundreds of subjects. The response of idiopathic dermographism and urticaria to H1 antihistamines is considerably greater (4) but in these disorders likewise H1 histamine only explains part of the wealing (1; Krause & Shuster, in preparation). The nature of the unknown additional vasoactive agent in these diseases is not clear and the definition of these mast cell products now appears essential for improved therapy of the urticarias.

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