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SKIN PRICK TESTS IN PATIENTS WITH CHRONIC URTICARIA

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Acute or chronic urticaria is not a common manifestation of systemic disease. However it affects 15% of the population at least once during their lives. The most common causes of urticaria are allergic. In all, we studied 130 patients (mean age 54.8) with chronic urticaria, 88 women and 42 men, in an effort to identify common causes of urticaria, using environmental and food allergens. 90 of our patients (69.2%) did not present with skin sensitivity. The remaining 40 individuals presented with skin sensitivity: 20 (15.3%) to food allergens, 14 (10.7%) to environmental allergens and 6 patients (4.6%) to both allergens (environmental and food). We note that in chronic urticaria it is unusual to find underlying causes.

Acute or chronic urticaria is not a common manifestation of systemic disease, despite the fact that it appears in 15% of the people during their lives (1). A number of mechanisms have been implicated in the manifestation of urticaria (2-3). However, in the majority of patients (60-70%) no specific cause of urticaria can be found (3-5). The mast cell secretory products (histamine, bradykinin, tryptase etc), are thought to be the agents for producing urticaria lesions and urticaria clinical manifestations (3, 5, 6). In vitro and in vivo tests aimed at establishing the generative causes for urticaria have proven of a rather limited value, more so in chronic urticaria. In contrast the case history and the results of clinical evaluation are of great importance in establishing the generative causes of the disease.

MATERIALS AND METHODS

We studied 130 patients (mean age 54.8) with chronic urticaria, 88 women and 42 men, who suffered from chronic urticaria for the last 1 and 10 years. We estimated their skin sensitivity with the method of prick test to environmental allergens (pollen grasses, pollen trees, weed pollen, moulds, dust mite, animal dander, and feathers) and to food allergens (eggs, meat, fish, milk, cheese).

RESULTS

90 patients of the total of 130 (69.2%) did not develop skin sensitivity. The remaining 40 (30.8%) developed skin sensitivity to the allergens we used. Specifically, twenty individuals (15.3% of the total) presented with skin sensitivity to food allergens: 5 to fish, 5 to eggs, 4 to milk, 3 to meat and 3 to cheese. Fourteen patients (10.7% of the total) presented with skin sensitivity to environmental allergens: 4 to pollen grasses, 3 to parietaria, 3 to pollen tree, 3 to dust mites

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and 1 to moulds. Six patients (4.6% of the total) presented with skin sensitivity to both environmental and food allergens (Tables I and II). It is noteworthy that food allergens appear to be a more frequent causal factor of chronic urticaria than environmental allergens (Table II). Concerning the type of skin manifestation, the majority (94 patients or 72.3%) presented with maculopapular rash, 34 patients (26.15%) presented with multiform erythema and 2 patients (1.55%) with angioedema (Table III).

DISCUSSION

Many release factors and pathogenic mechanisms lead to the degranulation of mast and basophil cells and to the clinical manifestation of urticaria. These release factors are separated into immune and non-immune (2-5).

Regarding the immune factors a specific antibody response to a specific allergen is observed. When individuals are exposed to a specific allergen, they are sensitized and, as a result, they produce specific antibodies. In the hypersensitivity reaction type I, which is characterized by the production of IgE antibodies, these antibodies are connected with high affinity receptors (Fce-R1) on the surface of the mast and basophil cells. During the next exposure of the sensitized individual to the same allergen, the mechanism for the release of mediators (cytokines, chemotactic factors, vasoactive substances, enzymes, and neuropeptides) (7-8) is triggered.

The degranulation of mast and basophil cells also presents in types II and III immune reactions in which IgG and IgM antibodies participate through the mechanism of the complement activation and through the production of anaphylatoxins, especially C3a and C5a. These anaphylatoxins increase capillary permeability and enhance the action of vasoactive mediators (8-10).

Besides the immune mechanisms, many other factors (e.g., physical factors, medicines, radiopaque substances, exercise etc) can cause a non specific activation of the mast and basophil cells and the release of vasoactive mediators, underlining the complexity of mechanisms that cause urticaria. The activation of mast and basophil cells, whether specific or not, leads to the synthesis and the release of many mediators, mainly histamines (2-3, 7, 10).

The non effectiveness of antihistamine drugs in treating urticaria is considered proof that many substances, which are released by mast cells or are produced locally, participate in urticaria mechanism (6). The quinines, which are produced by the enzymatic action of kallikrein (a substance contained in the mast cell granules) upon blood plasma or tissue kininogen, are examples of locally produced vasodilator substances (2, 11-13).

Recently, autoimmune mechanisms have also been described as causes of certain types of chronic urticaria, which were usually characterized as "idiopathic". According to experimental results, the mast

Table I. *Estimation of skin sensitivity with the method of prick test in patients with chronic urticaria.*

Number of patients	Positive Skin Test	Percentage of Positive Skin Test (%)	Negative Skin Test	Percentage of Negative Skin Test (%)
130	40	30.76%	90	69.24%
	Skin sensitivity to food allergens 20	15.30%		
	Skin Sensitivity to environmental allergens 14	10.70%		
	Skin Sensitivity to both allergens 6	4.61%		

Table II. *Skin sensitivity in chronic urticaria accordingly to caused allergens.*

Skin Sensitivity to food allergens 20 (50%)	To fish	5	(12.50%)
	To eggs	5	(12.50%)
	To milk	4	(10.00%)
	To meat	3	(7.50%)
	To cheese	3	(7.50%)
Skin Sensitivity to environmental allergens 14 (35%)	To pollen grasses	4	(10.00%)
	To parietaria	3	(7.50%)
	To olive	3	(7.50%)
	To dust mites	3	(7.50%)
	To moulds	1	(2.50%)
Skin Sensitivity to both (food and environmental) allergens 6 (15%)			

cells may become a target of IgG autoantibodies that are directed against IgE high affinity receptors (FceRI) on the mast cell surface or against IgE antibodies (14-15).

Besides the immune triggering reactions, many other substances and factors may cause a non specific activation of the mast and basophil cells and the release of vasoactive mediators, underlining the complexity of mechanisms that cause urticaria and explaining many types of urticaria caused by natural factors, medicines and radiopaque substances (5, 13, 16-17).

Finally, many factors that release histamine (Histamine Releasing Factors, HRFs) have also been identified. They derive from inflammatory cells (B- and T- lymphocytes, monocytes, neutrophil cells, platelets and macrophages) and they increase the release of histamine from mast and basophil cells. HRF identification showed that they are cytokines, which belong to the subcategory of _-chemokines. They contribute to basophil and other cell migration during the allergic reaction and they are responsible for the late release of histamine in skin reactions (18-19). We must, however, underline the fact that the increased readiness of histamine release from the basophil cell of systemic circulation has not been proved in patients with chronic urticaria (20).

Concerning our results, the percentage of non-identified causes is particularly high (69.2%) and it is almost the same with previous references. M. Greaves (3) highlights the fact that finding the underlying causes in the majority of cases of chronic urticaria is highly improbable. The factor that differentiates our results, from others in the literature, is that they implicate food-allergens as the most frequent proven causes of urticaria.

Table III. *Skin manifestations in patients with chronic urticaria.*

Types of skin manifestations in chronic urticaria	Number of patients	Percentage (%)
Maculopapular rash	94	72.3
Multiform Erythema	34	26.15
Angioedema	2	1.55

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