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Subject: Garlic as possible cause of contact dermatitis

Introduction

Recently we reported on a case of allergic contact dermatitis to garlic (1). It concerns a 30 year old owner of several restaurants, who used to work in his own restaurant as a cook, making new sauces. He complained for about 7 months of eczema on both hands. The patient reported that the process started between the 3rd and 4th finger of the left hand. After that, the disease spread over both hands. Detailed studies revealed that he was allergic to garlic. Extracts of onion did not give positive skin reactions. Avoidance of contact with garlic cleared the symptoms.

This case of garlic dermatitis was a reason for us to include garlic extracts in our routine patch test series. Some results of these tests will be reported in this communication.

Patch tests with garlic and onion extracts

A group of 125 persons were tested with water and ethanol extracts from garlic and with water and ethanol extracts obtained from onion (for details see reference 1). The group consisted of 62 patients (33 men, 29 women) with dermatitis and 63 persons (32 men, 31 women) with ulcus cruris. The results of the tests have been collected in Table 1. Ten of 125 (8%) showed positive 1+ or 2+ reactions to an aqueous garlic extract and 6 (4.8%) to an ethanol extract of garlic. Only one patient (female) reacted to an ethanol extract, without showing positive tests to a water extract. All patients who reacted positive after being tested with an aqueous garlic extract were women.

	No. of patients positive to Garlic				Ibidem Onion	
	water extract 2+	1+	ethanol extract 2+	1+	w ex	eth ex
Patient with garlic dermatitis (1)	1		1		0	0
Ulcus group (63)	4	2	2	3	0	0
Contact dermatitis group (62)	1	3	1	0	0	0
Total Pat. control group (125)	5 (4%)	5 (4%)	3 (2.4%)	3 (2.4%)		

1) reactions read after 48 and 72 hrs.

Table 1. Patch tests with garlic and onion extracts 1)

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It is worth noticing that extracts of onion (a narrowly related vegetable also belonging to the family of the Liliaceae) did not give rise to positive skin reactions; neither in the control group nor in the persons with skin responses to garlic.

Additional testing in three persons revealed the active component to be of low molecular weight and heat-labile. In three garlic reactors tested an extract of tulip (also belonging to the Liliaceae) did not give positive reactions. On the other hand, our first patient with garlic dermatitis showed a 1+ reaction to an acetone extract of tulip bulbs.

Comment

A remarkable point is the high incidence of positive reactions to garlic. Moreover, in the history of all positive reactors no indications could be found to suspect garlic as a cause of contact dermatitis. These findings might suggest that we are dealing with a toxic reaction. On the other hand, all persons showing positive reactions to aqueous garlic extracts were women (average age 58 years). They will come into contact with this vegetable from time to time so that sensitisation may have occurred.

Another possible explanation for the high score of positive reactions is that garlic contains substances cross-reacting with components of other origin (for example plant material). In this connection it is of interest to point to the finding that in the group of positive garlic reactors 15 x positive reactions were observed to woodtar, coaltar, balsam of Peru, colophonium and benzylsalicylate. Eight of the 11 patients show skin responses to the latter allergenic materials. In the other 114 persons tested only 34 positive reactions to the latter substances were observed.

These findings are comparable with the observations of Rothenberg and Hjort (2), who found a high incidence of positive reactions to wood-tar (46%), coaltar (37%) and balsam of Peru (23%) among 78 persons with a perfume allergy.

References

1. E. Bleumink, H.M.G. Doeglas, A.H. Klokke and J.P. Nater. Brit. J. Dermatol. in press

2. H.W. Rothenberg and N. Hjort. Arch. Derm. 97 (1968) 417-421

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