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URTICARIA FROM ALCOHOLIC BEVERAGES

By

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Alcoholic beverages contain several agents which can cause urticaria and angioneurotic oedema. Among these, yeasts (7), natural and artificial flavouring agents (6, 9) and salicylates (6, 9) are the most common. Allergic reactions to pure ethanol are apparently very rare. Dermatitis from ingested and locally applied alcohol was reported by Drevets & Seeborn (4). Both Biro & Pecache (1) and Streat (10) have described a case of urticaria probably due to alcoholic drinks. Unfortunately, challenge tests with pure ethanol were not made in either of the studies.

This study reports two typical cases of urticaria induced by yeasts in wines and one case of urticaria apparently due to ethanol itself.

CASE REPORTS

Case 1. A 34-year-old housewife, ES, had suffered from attacks of generalized urticaria and angioneurotic oedema 2-3 times a week for 6 weeks. Previously she had had only mild atopic dermatitis for a couple of years in her youth. Otherwise she had been in good health. A family history revealed atopic disorders in her two sons and asthma in her mother.

Intracutaneous tests were negative with the exception of *Candida albicans* (Dome Laboratories), which gave a highly positive reaction. A provocation test was made with a 5 per cent solution of the same allergen in her conjunctival sack. The result was clearly positive. Questions about her eating and drinking habits were made, to detect all possible sources of yeasts. The only probable source of yeasts was red wine, which she used to drink about twice a week. She was told to give up eating all food possibly containing yeasts. Urticaria disappeared, and after a symptomless period of 3 weeks a challenge test was made with 8 cl

of red wine with a positive result. The peroral challenge test was repeated after a week and the result was again positive. Since then, she has been on a low-yeast diet without any allergic reactions.

Case 2. A 33-year-old man, JL, complained of daily urticaria for 3 years. Weals appeared every day at about 8–10 a.m. and disappeared during the afternoon. His medical history revealed no signs of atopic disorders. In the intracutaneous tests, *Candida* was the only positive reaction. A conjunctival provocation test with *Candida* was positive. The patient was in the habit of drinking a glass of home-made apple wine every morning at 7.30 a.m. He never drank commercially available wines or beers. He stopped using the wine, and urticaria disappeared. A peroral challenge test with the apple wine was performed 2 weeks later. The result was positive.

Case 3. A 28-year-old woman, AS, was sent to hospital for severe attacks of urticaria for 1½ years. A family history revealed atopic disorders in several family members. The patient's mother and sister had allergic rhinitis, and one of her two sons had atopic dermatitis.

Because of recurrent tonsillitis, a tonsillectomy was performed in 1973. Otherwise she had been healthy.

In January 1972, acute urticaria appeared for the first time during a dinner. The symptoms disappeared within 4 hours. She thought that various alcoholic beverages were the cause of the attack. Since then, drinking alcohol was always accompanied by weals. The list of drinks eliciting the symptoms consisted of all kinds of alcoholic beverages from beer to Finnish vodka. Moreover, 2–3 months previously, acetic acid had also provoked an attack of urticaria.

Examinations were performed in August 1973. Her general condition was good. Intracutaneous tests were all negative. Nothing abnormal was found in routine blood tests. The following peroral challenge tests were made with positive results: ethanol 20 g, a French brandy 5 cl, and 4 per cent acetic acid 100 g. Ethanol 5 g, Coca Cola® 200 ml, salbutamol 4 mg, and acetaldehyde 10 mg and 30 mg gave negative results. Since then, the patient has used neither alcoholic drinks nor acetic acid, and had no attacks of urticaria.

COMMENTS

Yeasts have been shown to play an important role in chronic urticaria. James & Warin (7) examined 100 patients with chronic urticaria. In one of four patients, challenge tests with food yeasts gave positive results. Anti-*Candida* therapy and a low-yeast diet were beneficial for most of them. Against this background, it is easy to see that beverages containing yeasts may cause attacks of urticaria. In two of our cases, the probable cause was the yeasts in wines. The attacks were cured by

a low-yeast diet alone. No doubt, there are also cases in which the immunopathogenetic mechanisms are more complicated, not least because of cross reactivity between airborne moulds and dermatophytic fungi (8).

The mechanism of ethanol-induced urticaria may be a true anaphylactic-type allergic reaction to ethanol, or alcohol may alter other mechanisms to such an extent that weals appear. Ethanol may alter the absorption properties of the gut, and allergens may possibly pass through the gut more easily with than without ethanol. Ethanol also strengthens histamine-induced allergic reactions (3). In one of our cases (Case 3), the reaction was probably anaphylactic. Positive challenge test results, with both ethanol itself and acetic acid, speak in favour of this view. Moreover, challenge tests with acetaldehyde, an important metabolite of ethanol, remained negative.

Biro & Pecache (1) presented a male patient who had noted that various alcoholic drinks produced urticaria, and physical exertion provoked itching and weals. A provocation test with beer gave a positive result. Streat (10) reported a female patient who complained of angioneurotic oedema after ingesting beer. Provocation tests with beer and brandy brought on the condition. It seems that in the former case alcohol was only a provocative factor in cholinergic urticaria but in the latter it was probably the cause of allergic symptoms.

Flavouring agents in alcoholic drinks are numerous. They contain both volatile and non-volatile aromatic compounds. Moreover, a great many flavourings are added in the manufacture of liqueurs and bitters, e.g. quinine, licorice, saffron, cocoa, nutmeg, ginger, thyme, cinnamon, and various peppers (5). Their final concentrations in the beverages are low, but allergic reactions must be watched especially in patients allergic to salicylates (6, 9). Even fixed eruption can be caused by flavours (2). The exact composition of the causative compound usually remains unsolved because testing can only be performed with challenge tests.

SUMMARY

Three cases of urticaria/angioneurotic oedema produced by alcoholic beverages are presented. In two of them, the causative agent was probably yeasts in wines. An intracutaneous test with *Candida*, a conjunctival provocation test with *Candida*, and peroral challenge tests with wines were positive in both cases. The symptoms disappeared when the patients went on a low-yeast diet. In the third case, ethanol itself and acetic acid apparently were the factors underlying urticaria. Peroral challenge tests with ethanol, brandy and acetic acid were positive, but those with acetaldehyde remained negative. The patient has been asymptomatic after giving up alcoholic drinks alone.

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