

IgE-mediated type-I-allergy against red wine and grapes

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In the literature few allergic reactions to grapes and wine are reported. In some cases these reactions were associated with peach and cherry allergy (1–3).

Pastorello et al. could characterize the major allergens of grape and wine. The major allergens are endochitinase 4A and a lipid-transfer-protein that is responsible for

A case of anaphylactic reaction to red wine and grapes.

cross-reactivity to peach. A 24-kD protein homologous to the cherry thaumatin-like protein is very likely a minor allergen (4).

We present the case of a 66-year-old white man who developed an episode of anaphylaxis with swelling of the tongue and respiratory distress 2 h after consuming red wine. His symptoms relieved 15 min after injection of corticosteroides. In march 2004, the patient developed 2 h after eating grapes an episode of anaphylaxis with swelling of the tongue and of the eyes with respiratory distress. Up to March 2003 he was tolerating red wine and grapes without any reactions. Other alcoholic beverages, i.e. beer, were tolerated without any symptoms.

In addition, the patient had a 10-year history of seasonal rhinitis during the birch and grass pollen season. His physical examination revealed an otherwise healthy patient. Allergy diagnosis included positive skin prick tests reactions to tree pollen, grass pollen, pear, peach, orange, kiwi and melon (extracts from Allergopharma, Reinbeck, Germany). The skin prick testing with fresh food, performed in the prick-to-prick-

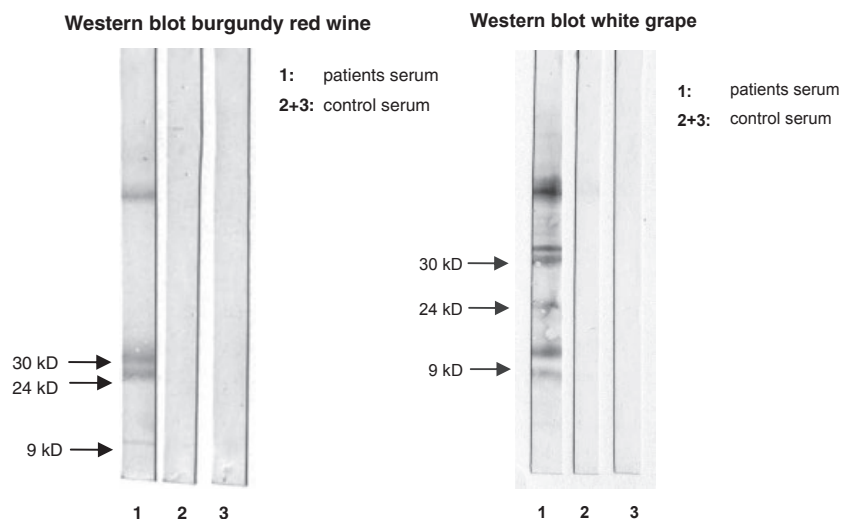


Figure 1. Western blot analysis with burgundy red wine extract and white grape extract showing specific IgE protein bands at 30, 24 and 9 kD.

technique, showed positive reactions to red wine, white wine and grapes.

In the patient's serum specific IgE (CAP-FEIA, Pharmacia, Uppsala, Sweden) was found against birch, mug word, egg, milk, codfish, wheat flour, soy, peanut, apple, carrot, latex, grape (RAST Class 2), celery (RAST Class 5), cherry (RAST Class 2) and peach (RAST Class 2). Total IgE counted 607 kU/l. Idiosyncrasy to potassium-metabisulfate was excluded by oral provocation. Western blot analysis of grape and red wine extracts revealed specific IgE reactivity to three allergens in grapes and red wine, previously identified as 30-kD-endochitinase 4A and 4B, 24-kD-thaumatococcus protein and the 9-kD-lipid transfer protein (4).

Grape chitinases account for 50% of the soluble proteins of grapes and persist through the process of vinification. Other important allergens in grapes are the thaumatin-like proteins. Their amino acid sequence has been shown to be highly homologous to apple and cherry thaumatin. The presence of the 24 kD protein in grapes may explain the

cross-reactivity to cherry. The identification of the 9 kD lipid transfer as a major grape allergen may explain why allergic reactions to grapes are often associated with reactions to other fruits, like e.g. peach as a high rate of sequence homology between grape and peach lipid transfer proteins could be found (4).

Our Western blot analysis performed with a wine extract from burgundy red wine and extract of white grapes showed specific IgE protein bands according to the prescribed grape and wine allergens (Fig. 1).

The patient was recommended to obtain from wine and grapes and a emergency kit containing antihistamines, corticosteroids and an adrenaline inhaler was prescribed.

This case report demonstrates that the already known allergens in grapes and wine could be detected by Western blotting in our patient suffering from grape and wine allergy. He also showed sensitizations to cherry and peach who are known to be cross-reactive to wine and grapes. In conclusion, reactions to wine are not only caused by intolerances

towards histamine and potassium-metabisulfate (5), but can be IgE-mediated. History of allergic reactions or positive sensitization towards peach and cherry should be taken seriously and should be a part in the diagnostic work-up for patients with grape and wine allergy.

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