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# Anaphylaxis only to a home-made rose wine from a variety of grape

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## KEY WORDS

*Anaphylaxis, wine and grape allergy, food allergy*

## SUMMARY

*This study reports a case of anaphylaxis to a home-made wine and tolerance to other wines.*

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## Introduction

*Vitis vinifera* is one of the most cultivated plants in southern Europe. Its fruit, grape, is primarily used in the production of wine. Few allergic reactions to grape and even fewer to wine are reported in the literature (1-3).

## Case Report

Herein we report the case of a 35-year-old man with a selective sensitization to one kind of wine, resulting in an anaphylactic episode. He was admitted to our department the past year and investigated by means of clinical history, skin prick tests (SPTs) with commercial extracts, fresh fruits and wines (prick-to-prick method), measurement of specific IgE and oral provocation tests (OCTs).

A detailed history revealed that our patient experienced generalized pruritus, eyelid and face angioedema, urticaria and chest tightness within twenty minutes after having

drunk a glass of home-made rose wine. His symptoms relieved after administration of adrenaline, corticosteroids and antihistamines at the emergency room. Wine consumption was not preceded by any medication, food or other beverage intake the previous 4 hours, nor was it followed by physical exercise. He still ate different varieties of grapes, drank white and red wine as well as other alcoholic beverages without any reaction. He did not suffer from other allergic disease, rhinitis, asthma, atopic dermatitis, drug or food allergy, including oral allergy syndrome.

An SPT with the commercial extract of grape (Staller-gens, Paris, France) provided a negative result while prick-to-prick tests were marginally positive to fresh white and red grape (mean wheal 3mm each) but strongly positive to the variety of rose grapes, so called cardinale, used in the culprit wine production (mean wheal 6mm). An SPT with this particular rose wine elicited a positive response even after it was boiled for 15 minutes (mean wheal 6mm) while SPTs with undiluted commercial

white and red wines were negative. SPTs to aeroallergens were positive to grass pollen and *D. pteronissinus* extracts. Grape specific serum IgE (ImmunoCAP System, Phadia-Sweden), was negative. OCTs with white and red wine as well as with 200 mg sulphites were negative. Our patient did not give his written consent for an OCT with the culprit wine.

## Discussion

Diagnostic approach to wine allergy without evidence of concomitant grape allergy (positive history or SPTs to grape) may be a difficult task since wine along with grape juice contain occasionally a mixture of potential allergenic compounds such as sulphites, alcohol, yeast, and egg white. Most of these agents were excluded as causatives of anaphylaxis in our patient by evaluating clinical history and suitable tests. We should not ignore that the primary and most important wine ingredient is derived from grape. Therefore, all the potential varieties of grape which might have been used in every single wine should be tested. Differences in IgE sensitization between varieties of grapes and kinds of wine have been indicated by some studies, but drawn little attention (4, 5). In one interesting study all 3 allergic to wine patients suffered repeated anaphylactic reactions after having drunk freshly produced red wine (from *V. labrusca* grape) while they had shown tolerance to other kinds of wine (4). There is another case report in literature with anaphylaxis selectively to one grape species, the americana grape (5). Our patient was proved to be allergic only to a rose wine made by a specific variety of grape. Strong skin reactivity to these specific wine and grape, as well as negative OCT to sulphites, indicate that the culprit agent is an allergen persisting through the process of vinification and coming from proteins of this particular variety of grape and not the fining agents. Such allergens are Endochitinase class IV from *V. Vinifera*, Lipid-Transfer-Protein (LTP) (*Vit v 1*), and Thaumatin-like Proteins from *V. Vinifera* (6), with the first considered as the main wine allergen (4). Further immunochemical investigation is definitely needed to verify the culprit agent in our case. However, it is of critical significance to notice that this culprit agent appears to be different in other kinds of wine, since our patient tolerated other wine products. A possible explanation to this

might be the observation that although highly similar set of proteins seems to occur in all wine varieties, the exact protein composition differs depending on the particular wine. Grape variety and growing conditions as well as the vinification process can influence the protein composition of the end product wine. Vinification process may also result in hydrolysis products of grape proteins in particular wines (6). In a recent interesting case of beer allergy with tolerance to some beer products the authors point, among others, the different fermentation processes, filtration and malting conditions as a possible explanation for variable degrees of IgE reactivity (7).

Clinicians should always bear in mind the possibility that a patient appearing with anaphylaxis to a certain wine variety might tolerate other wine products. In our case, detection of some wine products risk free to consume was feasible by evaluating appropriate prick to prick tests along with OCTs. The current available commercial extracts for SPTs might not be reliable on setting diagnosis to grape and wine allergy, as pointed elsewhere (8).

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