

Anaphylaxis to wine

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(Received 2 October 1979; accepted for publication 19 October 1979)

Summary

Anaphylaxis following the ingestion of wine was found in a non-atopic woman. The reaction occurred within 15 min of wine ingestion but did not follow other alcoholic beverages. An immediate skin test response to the offending wine was found but specific IgE levels could not be measured by radioallergosorbent testing.

Introduction

Life threatening systemic anaphylaxis in humans to ingestion of a variety of foods is well known (Orange & Donsky, 1978). Alcoholic beverages have been reported to produce bronchoconstriction in asthmatic patients (Breslin, Hendrik & Pepys, 1973) and to exacerbate urticarial lesions in patients with chronic urticaria (Warin & Champion, 1974). The purpose of this report is to describe a patient without a history of asthma or atopic disease presenting in early adulthood with life threatening systemic anaphylaxis provoked by ingestion of wine.

Case report

A 31-year-old Caucasian female entered the hospital for evaluation of recurrent episodes of anaphylaxis. The patient was in good health until one year prior to admission when she developed generalized urticaria following ingestion of spaghetti, barbecued ribs, and wine. A subsequent reaction with resulting loss of consciousness followed within 30 min of a meal with hot dogs and wine 5 months prior to admission. Later that month within 1 hour of ingestion of a cheese and sausage pizza with wine, she developed generalized urticaria and was conveyed to an emergency room where she lost consciousness and responded to treatment with epinephrine. Following this episode the local fire rescue team was given a key to her apartment due to the fear of losing consciousness before help could arrive. In addition, the patient's mother moved in.

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Two months prior to admission she again required emergency treatment with epinephrine following the onset of generalized angioedema, urticaria and light-headedness after ingestion of a chicken pot pie. She could not remember what beverage was ingested with the meal. Two days later while taking diphenhydramine 50 mg every 6 hr, she developed urticaria treated by self-administration of epinephrine. This episode followed ingestion of ham and wine 4 hr prior.

The frequency of reactions and rapidity of onset of loss of consciousness mandated documenting the offending agent. On consecutive days the patient was challenged with a hot dog and chicken pot pie which were without effect. On the third day of hospitalization the patient was challenged with a cheese and sausage pizza followed by a glass of sherry wine. Two and one half hours later generalized pruritis and feeling of faintness developed. An urticarial rash with large weals developed over the arms, legs and abdomen. Hypotension and bradycardia developed with a blood pressure of 60/35 and pulse rate of 48. Wheezing was not observed; however, the patient complained of chest tightness and developed swelling of her lips. Administration of epinephrine and diphenhydramine resulted in prompt increase in blood pressure and pulse. The hives faded.

Rechallenge with the same pizza the following day resulted in no adverse effect implicating wine as the cause of the patient's anaphylactic episodes. Rechallenge with wine alone was not performed because of the life threatening nature of the reactions. Further questioning revealed that she had ingested other alcoholic beverages other than wine (martini's and beer) between episodes of anaphylaxis without adverse effects. Follow-up one year after discharge with avoidance of wine ingestion and no avoidance of pizza or hot dog revealed no further episodes of anaphylaxis or urticaria.

Methods and results

Laboratory evaluation revealed peripheral eosinophilia with 4,700 white blood cells per mm³ and 11% eosinophils. IgE level was 20 iu/ml. Complement levels were normal with a C₃ of 98 µg/dl and a CH₅₀ of 57 µg/ml.

Prick tests to undiluted sherry and rhine wine produced a flare without a weal. Prick test to undiluted sherry was negative on normal control. A Prausnitz-Küstner test was performed by intradermal injection of 0.02 ml of the patient's serum into a human control who had previously demonstrated ability to accept passive transfer of allergic antibody followed by ingestion of 4 oz of sherry 48 hr later. No weal or flare developed. Sherry coupled to activated paper discs was used in a radioallergosorbent test (RAST) to the patients serum performed at the Research Laboratory for Allergic Diseases at the Mayo Clinic, Rochester. Specific IgE could not be demonstrated to the wine. Prick skin tests to extracts (1:20 glycinized) of wheat, barley, rye, corn, pork, tomato, peanut, onion, milk, potato, oat, chicken, bean mustard, lobster, flaxseed, cotton-seed, mustard and whitefish (Greer Laboratories) were all negative.

Discussion

Our patient had an apparent immediate hypersensitivity reaction to wine with life threatening anaphylaxis. Alcoholic beverages including wine have been implicated in provoking acute airway obstruction. Both allergic and non-allergic mechanisms have been proposed.

Geppert & Bouche (1978), reported the development of bronchoconstriction with associated vasomotor symptoms after ingestion of ethanol in a 28-year-old non-atopic

female. The reaction was not blocked by atropine or disodium cromoglycate. The authors suggested that ethanol may have acted through release of secondary mediators with vasoactive and bronchoactive properties. Association of vasomotor sensitivity to ethnic background has made (Ewing, Rouse & Pellizzari, 1974).

Breslin, Hendrik and Pepys (1973), reported six asthmatic patients who developed bronchoconstriction following challenge with alcoholic beverages. Reactions occurred to specific beverages such as wine or whisky but not ethyl alcohol tested by oral ingestion or through a nasogastric tube. Pre-treatment by disodium cromoglycate inhibited the asthmatic reaction. The clinical picture suggested immediate hypersensitivity to a substance peculiar to a particular alcoholic beverage and not to ethyl alcohol.

Our patient developed vascular collapse, angiodema and urticaria following ingestion of wine (red or white) but not to other alcohol containing beverages. The clinical features suggest allergic hypersensitivity to wine and not a reaction to ethanol in general. Reaginic antibody was not demonstrable by either classic Prausnitz-Kustner test or by RAST suggesting that the antigen is a metabolic product of the ingested wine or that there was technical difficulty coupling the antigen upon performance of the RAST.

Wine is yet another substance, albeit a rare one, which may produce life-threatening anaphylaxis. As with other foods which more commonly are implicated in severe allergic reactions, the responsible antigen is unknown and may well be a metabolic product of the ingested substance rather than a pure substance in the food itself.

Acknowledgments

The authors thank Dr John Yunginger, Mayo Clinic, Rochester, Minnesota, for performing the RAST.

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