

exogenous stimulus (1). The most common drugs that cause anaphylaxis are  $\beta$ -lactam antibiotics, nonsteroidal anti-inflammatory agents, antineoplastic compounds, protamine, and angiotensin-converting enzyme inhibitors (2). Anaphylactic reactions provoked by aminoglycoside are rare. Ribostamycin is an aminoglycoside antibiotic in the same family as neomycin. Erythroderma was proven after intramuscular administration of ribostamycin (3). No report of anaphylaxis because of ribostamycin has been published. Ribostamycin is effective against *Neisseria gonorrhoeae*, *Escherichia coli*, *Klebsiella* spp., and *Proteus* spp. groups A and B streptococci and excellent in point of cost, convenience of administration, and safety (4). Many clinicians used ribostamycin for treatment of pelvic inflammatory disease in Korea. We report a case of systemic anaphylaxis after intramuscular injection of ribostamycin. A 33-year-old woman was transferred to our emergency room for management of anaphylaxis. She had three previous intramuscular injection of ribostamycin every 3 weeks as a result of recurrent pelvic inflammatory disease. At the third time of the ribostamycin injection, she experienced generalized pruritus, flushing and shortness of breath but these symptoms were resolved spontaneously without medication. Therefore, she did not see the attending physician. During the fourth injection of ribostamycin, she developed generalized urticaria and angioedema with dyspnea, dizziness, and

### Anaphylaxis due to ribostamycin in patient with pelvic inflammatory disease.

severe hypotension. After treatment with subcutaneous injection of epinephrine, and intravenous hydrocortisone and diphenhydramine with aerosolized salbutamol sulfate, symptoms resolved completely within 24 h. Two weeks after full recovery, we performed skin-prick test and intradermal test to ribostamycin and other commonly used aminoglycoside and  $\beta$ -lactams in Korea. Positive prick test reaction and intradermal test was found for ribostamycin but there was no reaction to other aminoglycoside and  $\beta$ -lactams (Table 1). Prick and intradermal tests with ribostamycin at a concentration 1 mg/ml were negative in 15 healthy control subjects. The patient noted pruritus but no systemic reaction after intradermal test. Her total serum immunoglobulin (Ig)E level was 125 IU/ml. The clinical diagnosis of anaphylaxis is supported by typical signs and symptoms shortly after exposure to causative agent. Also, exclusion of other conditions which can mimic anaphylaxis and demonstration of immediate hypersensitivity to the suspected agent by skin of serum radioallergosorbent test (RAST) testing (5). Measurement of serum markers of mast cell activation may be used to confirm a diagnosis of anaphylaxis in equivocal cases (6). Although our study could not show specific IgE by RAST, it is possible that the three previous injections of ribostamycin-induced sensitization and the fourth injection-provoked anaphylaxis. The clinical finding and the positive prick test and intradermal test with ribostamycin strongly suggest that she had developed an IgE-mediated allergy to this drug.

This work was supported by BumSuk Academic Research Fund of 2003.

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Accepted for publication 7 June 2004

Allergy 2004; 59:1134–1135

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DOI: 10.1111/j.1398-9995.2004.00683.x

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## Allergy to wine

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**Key words:** food allergy; prick-by-prick; red wine; specific immunoglobulin E; white wine.

We report the case of a patient suffering from multiple food allergies (chicory, peach, strawberry), who developed an immunoglobulin (Ig)E-mediated anaphylactic reaction to wine. The

### IgE-mediated anaphylactic reaction to wine.

Table 1. Results of skin prick test and intradermal test

| Drug preparation<br>(concentration, mg/ml) | Prick test<br>(wheal/erythema) | Intradermal test<br>(wheal/erythema) |
|--------------------------------------------|--------------------------------|--------------------------------------|
| Ribostamycin (5)                           | 4 × 3.5/26 × 21                | 11 × 11/50 × 42                      |
| Micronomicin (4)                           | Negative                       | Negative                             |
| Tobramycin (4)                             | Negative                       | Negative                             |
| Cefazolin (5)                              | Negative                       | Negative                             |
| Histamine (10)                             | 4 × 3/21 × 15                  | 6 × 5/35 × 35                        |

Intradermal test was done with 10-fold dilution of the preparation for prick test.

patient, a 35-year-old man, had an history of urticaria angioedema after ingestion of red and white grapes started at the age of 28 years. The prick-by-prick test with grape and the specific IgE measurement were positive (1.34 KUa/l).

On the contrary, the patient tolerated wine. After at least 4 years since sensitization to grape, the patient experienced an episode of glottis edema and asthma some minutes after drinking a glass of *prosecco* (sparkling white wine of Northeast Italy) as an aperitif without having drunk or eaten anything else in the previous 4 h. When he was admitted to our department the patient reported having tolerated red wine on the previous days. He underwent skin prick-by-prick and intradermal reaction tests with *prosecco*, *chardonnay* (widespread white wine grape), *cabernet franc* (worldwide red wine grape), *chianti* (classic red wine of Central Italy), *nero d'Avola* (classic red wine of South Italy). The prick-by-prick test was performed with each undiluted wine obtaining a mild response with wheal and flare reaction (about 1/2 histaminic diameter). The intradermal tests were performed at a dilution of 1 : 10 with physiological saline for all the wines. With the exception of *chianti*, we obtained a remarkable pruritic reaction with wheal, flare, and pseudipodia (three times greater than the histamine diameter, while the control test with physiological saline was negative). In intradermal reaction *chianti* evoked a wheal which was half the histaminic one. It was therefore reassessed at a 1 : 3 dilution obtaining a wheal that was three times as great as the histaminic one. An oral challenge test was then excluded and the patient returned home after 30-min observation. Prick tests and intradermal reactions were subsequently performed with fractions of wine (*prosecco*) of different molecular weight obtained by ultrafiltration (Centricon, Centrifugal Filter Devices, Millipore Co., USA). We divided 2 ml of wine in four fractions: (i) molecular weight > 50 000 Da; (ii) molecular weight between 50 000 and 30 000 Da; (iii) molecular weight between 30 000 and 10 000 Da; (iv) molecular weight < 10 000 Da. All the fractions were restored to the starting

volume by adding H<sub>2</sub>O in order to avoid variations of the concentration of molecules initially present in the samples after ultrafiltration. Only the fraction weighing more than 50 000 Da evoked a clear erythematous response with wheal formation. The patient was recommended to abstain from wine and in the following months he experienced tongue edema after drinking a little red wine (*barbera*). Two patients, aged 50 and 30, were then examined. They reported face erythema and cough respectively, a few minutes after ingestion of red wine. The skin test performed under the same conditions as the reported case was negative for both of them. As regards the first case, not even an oral challenge with 200 mg sulphites evoked a response.

The value of this report springs from the evidence that IgE-mediated anaphylactic reactions to wine are only anecdotal (1). Reactions to wine because of intolerance to histamine have been described (2), which is almost exclusively restricted to red wines (3), whereas we observed a reaction to all kinds of wines. Recent studies deny the importance of histamine in this type of reactions (4, 5). At our knowledge, few cases have occurred with *novello* (Italian for 'new wine,' used in the same sense as the French *beaujolais nouveau*), made by an accelerated fermentation process (carbonic maceration) and with *fragolino*, which is obtained through fermentation of *vitis labrusca* rather than of *vitis vinifera*. The protein involved in this case seems to be an allergen of 30 kDa. All the other cases dealt within allergology are because of well-known phenomena of dose-dependent intolerance to the common antioxidants of wine (sulphites) probably together with other non-IgE-mediated mechanisms (6). This is probably the first case described of a real allergic reaction to wine.

It is interesting to note that our patient tolerates *grappa*, an alcoholic product that is not obtained through fermentation but through distillation of grape marc.

Wine proteins, in particular the fractions weighing more than 50 kDa, are included, although anecdotally, in the number of substances that can evoke a severe food allergy.

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Accepted for publication 28 January 2004  
Allergy 2004; 59:1135–1136  
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DOI: 10.1111/j.1398-9995.2004.00589.x

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## A case of pollinosis to *Broussonetia papyrifera*

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**Key words:** *Broussonetia papyrifera*; pollinosis.

A wide number of plants are responsible for pollinosis in Europe (1). Here we report a source of pollen allergy previously unrecognized, represented by

### A new pollinosis.