

onstrated. As expected, since all of the three LA used belong to the amide class, cross-reactivity among them did not appear.

Key words: adverse reactions; bupivacaine; challenge tests; local anesthetics.

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Intolerance to sodium metabisulfite in beer

Where report on a patient who developed facial erythema and edema shortly after consumption of alcoholic beverages, namely, one specific brand of beer. Extensive allergologic testing identified sodium metabisulfite as the causative agent of the patient's symptoms and the pseudo-allergic pathogenesis of his symptoms.

■ In 1993, a then 25-year-old white man began to experience numerous episodes of itchy erythematous rashes and swelling in the face, namely, over the zygomatic arches and periorbitally. These symptoms developed within minutes after consumption of various brands of wine and most often after

enjoying his favorite brand of beer. All symptoms resolved spontaneously within 1-2 h. Prick tests of relevant cereals (malt, barley, rice, rye, wheat), hops, and brewer's yeast, along with food preservatives, the food dye tartrazine, and the implicated brand of beer (Irseer Klosterbräu®), were negative.

To test whether ethanol or its metabolites acetaldehyde or acetic acid might be the relevant agents, the respective prick tests were performed and yielded negative results (Table 1). Oral challenge with food preservatives (including 500 mg of *p*-hydroxybenzoic acid and 500 mg of sodium salicylate) and 100 mg of tartrazine did not result in any reactions, nor did oral challenge with 50 ml of the accused beer. Thirty minutes later, the patient was challenged with another 50 ml of the beer and developed pronounced erythema and edema over the zygomatic arches and periorbitally within 10 min. The symptoms were accompanied by a significant ($P < 0.01$; Student's *t*-test) increase of serum histamine from a value of 9.8 nM before exposure to 26.3 nM after exposure (normal range: < 10 nM), as detected by radioimmunoassay (Immunotech, Hamburg, Germany). Identical symptoms were observed after oral exposure to the amount of 10 mg sodium metabisulfite, a dose recommended by others (1). No specific IgE or IgG antibodies to sodium metabisulfite could be detected in the patient's serum by the radioimmunosorbent test (Pharmacia, Uppsala, Sweden). Since sodium metabisulfite was capable of inducing the clinical symptoms also realized after consumption of beer, a fresh sample of the beer preferred by the patient was analyzed for its sulfite content by means of distillation and subsequent

No need to panic. You can still enjoy a beer or two.

Table 1 Results of allergologic tests

Mode	Substance	Result
Skin prick	5% Sodium metabisulfite	Neg
	1% <i>p</i> -Hydroxybenzoic acid	Neg
	Tartrazine	Neg
	Brewer's yeast	Neg
	Cereals	Neg
	Ethanol 96% and 9.6%	Neg
	Acetaldehyde 100%	Neg
	Acetic acid 9.6% and 0.96%	Neg
	Beer	Neg
	<i>p</i> -Hydroxybenzoic acid (500 mg)	Neg
Oral challenge	Sodium salicylate (500 mg)	Neg
	Tartrazine (100 mg)	Neg
	Beer (100 ml)	Pos *
	Sodium metabisulfite (10 mg)	Pos *

*Erythema and edema over zygomatic arches and periorbitally.

titration with iodide ("iodimetry") and was found to contain 3–4 mg/l.

■ The patient described here developed symptoms of type I hypersensitivity within minutes after ingestion of alcoholic beverages, namely, wine and a specific brand of beer. Wine generally contains sulfite in relatively high concentrations. The beer not tolerated by the patient was also shown to contain readily detectable amounts of sulfite, a finding explicable by the (legal) practice of adding sulfur to hops used in brewing beer (2). Since the symptoms encountered by the patient after consumption of these beverages could exactly be mimicked by pure sodium metabisulfite, this is the most likely cause of the patient's symptoms. Dose dependence and histamine release, as well as the absence of specific antibodies to this substance, argue for the diagnosis of food intolerance according to the classification of the EAACI Subcommittee on Adverse Reactions to Food (3). Other possible causes such as ethanol and its metabolites, food additives, or – in the case of beer – cereals, can be ruled out on the basis of the results of the extensive allergologic test program described above.

Key words: beer; food intolerance; metabisulfite.

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Prevalence of allergic conjunctivitis in Italian young men

THERE are very few reports on the real prevalence of allergic conjunctivitis in the general population (1). In this regard, the conscript model is a very reliable tool to evaluate the prevalence of a disease. The aims of the present study were as follows:

- 1) to evaluate the prevalence of allergic conjunctivitis in a large group of young men
- 2) to consider the possible association with other allergic diseases
- 3) to define the various sensitizations.

■ In 1993, 1994, and 1995, 1529 out of 23 157 Italian conscripts for Navy call-up, resident in northern Italy, underwent an allergologic visit at the Naval Hospital of La Spezia to confirm the doubtful diagnosis of an allergic disease, based on history and/or medical examination.

On this occasion, history, clinic visit, spirometry, methacholine bronchial challenge, and the skin prick test were performed on all subjects. The skin prick test was performed according to methodology and criteria proposed by the Italian Society of Allergy and Clinical Immunology (2). The allergen extracts

used were all of DHS-Bayer Group make; the panel consisted of mites (*Dermatophagoides farinae* and *D. pteronyssinus*), cat, dog, grass mix, Compositae mix, *Parietaria judaica*, birch, hazelnut, olive tree, *Alternaria tenuis*, *Hormodendrum*, and *Aspergillus* mix. They are the most representative causal allergens in our area. Sensitization was considered when there was an agreement between history and skin prick test positivity (i.e., wheal diameter ≥ 3 mm). Subjects with skin prick test positivity alone were considered monosensitized; on the other hand, subjects with two or more skin prick test positivities were considered polysensitized.

Allergic conjunctivitis and rhinitis were diagnosed on the basis of the agreement among history, clinical examination (if reliable), and sensitization(s). Conjunctivitis, itching, and red eye were considered the most important symptoms mentioned by subjects. Asthma was diagnosed on the basis of agreement among history, clinical examination (if reliable), and functional tests.

The medical procedures to examine conscripts are standardized by military regulations.

Statistical analysis was performed with the chi-square test.

■ After analysis of the data of 3 consecutive years (i.e., 1993, 1994, and 1995), the present study shows that 394 subjects out of 23 157 had a diagnosis of allergic conjunctivitis. Therefore, the prevalence of allergic conjunctivitis was 1.7%. Table 1 reports the data on the analysis of single allergens.

The prevalence of allergic conjunctivitis in conscripts to the Italian navy is 1.7% – and is increasing.

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