

cypress pollen-allergic patients present IgE directed against carbohydrate epitopes which seem to be shared by bromelain (5, 6). Therefore, the administration of drugs containing bromelain should be carefully evaluated in patients presenting allergic reactions to foods which may cross-react with such enzymes.

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Hypersensitivity to ASA

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Key words: acetylsalicylic acid; sodium benzoate; sodium salicylate.

● THE pathomechanism of immediate-type hypersensitivity reactions to acetylsalicylic acid (ASA) is not yet clear. Several findings suggest nonimmunologic (nonallergic hypersensitivity) mechanisms.

We treated a 39-year-old female kindergarten teacher who had suffered for 10 years from recurrent episodes of flush, rhinoconjunctivitis, facial edema, dyspnea, and loss of consciousness after intake of analgesics containing ASA. For the last 2 years, she had several times developed flush and rhinoconjunctivitis, and twice also loss of consciousness, after eating ready-

cooked meals. There was no history of atopic diseases, asthma, urticaria, or nasal polyps.

Skin prick tests with ASA, a panel of food preservatives, and coloring agents yielded immediate-type reactions to ASA (1 mol/l in ethanol), sodium benzoate (1 mol/l in aqueous solution), and sodium salicylate (1 mol/l in aqueous solution). Skin prick tests were done twice and gave identical results. Ten controls had no skin test reactions to these substances.

Specific IgE antibodies to ASA in the patient's serum were not demonstrable by a commercial kit (Hycor Biomedical, Kassel, Germany). Incubation of a preparation of the patient's peripheral blood leukocytes with three concentrations (1.0, 0.1, and 0.01 mmol/l) of ASA, sodium salicylate, or sodium benzoate did not induce release of histamine or leukotrienes (CAST-ELISA, DPC Biermann, Germany).

Single-blind oral-challenge tests were done with analgesics, preservatives, and coloring agents administered in gelatin capsules at least 90 min apart. There were clear-cut immediate-type reactions after ingestion of 50 mg acetylsalicylic acid (after 5 min, rhinoconjunctivitis, flush, and edema), 250 mg sodium benzoate (after 5 min, flush and nausea), and 500 mg

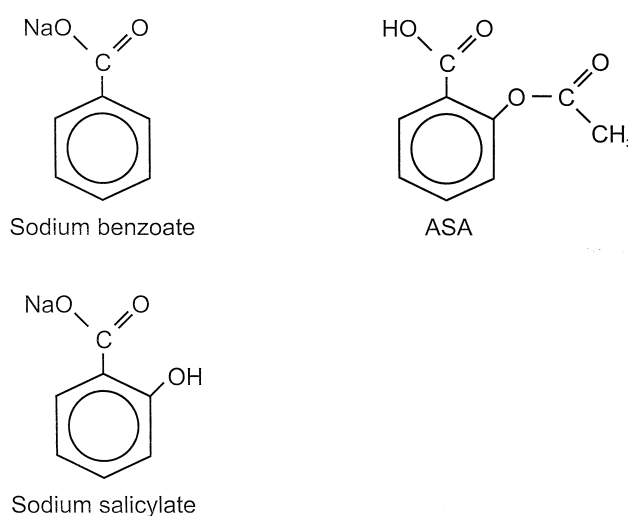


Figure 1. Chemical structure of ASA, sodium salicylate, and sodium benzoate.

sodium salicylate (after 3 min, rhinoconjunctivitis, generalized urticaria, and facial edema). All other analgesics (paracetamol, ibuprofen, propyphenazone, and diclofenac) and low-molecular-mass food components (several food dyes, potassium disulfite, sodium nitrite, sorbic acid, PHB esters, and sodium propionate) were tolerated without symptoms. The patient was told to avoid ASA and food possibly containing benzoates or salicylates. For 3 years, she has had no further hypersensitivity reactions.

Clinical cross-reactivity is not uncommon when patients with clinical reactions to ASA are challenged also with sodium salicylate or sodium benzoate: 17.4% of 167 patients exhibited clinical reactions to both ASA and sodium salicylate (1), and 17.4% of 132 patients to both ASA and sodium benzoate (2). Only a few patients with immediate-type skin test reactions to ASA have been reported so far (3). In these studies, a conjugate of ASA with polylysine was used for the skin prick test. In a large series of patients with clinical immediate-type hypersensitivity to mild analgesics including ASA, skin prick test reactions to unconjugated ASA were not found (4). Nor has *in vitro* testing provided conclusive evidence of an immunologic mechanism of reactions to ASA. Only in exceptional patients have specific IgE antibodies to ASA been demonstrated in the serum (5, 6).

In our patient, the history of severe clinical reactions, the reproducible skin prick test reactions to structurally related substances (Fig. 1), and the occurrence of challenge reactions to rather low doses of the three compounds support the idea of an allergic mechanism.

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String bean-induced anaphylaxis

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Key words: anaphylaxis; immunoblotting; lipid transfer protein (LTP); skin test; string bean.

• ALLERGY to legumes other than peanut and soybean has been rarely reported in adults. We report a case of string bean-induced anaphylaxis. A 20-year-old girl

experienced collapse, gastroenteritis, and generalized urticaria 1 h after eating pasta, grilled fish, and

boiled string beans. She had the following

Allergy to a 35-kDA, heat-stable allergen.

history:

- 1) oral allergy syndrome from peach, hazelnut, walnut, and almond
- 2) urticaria from fresh fennel, boiled cabbage, mustard, commercial hazelnut cream, and commercial pear juice
- 3) acute scalp dermatitis after using shampoos containing fruit extracts.

The patient underwent skin prick test (SPT) with

- 1) a large series of airborne allergens
- 2) apple, pear, peach, cherry, plum, almond, celery, carrot, peanut, bean, soybean, pea, rice, corn, wheat, barley, oats, onion, garlic, orange, tomato and potato extracts (DHS)
- 3) apple peel and peach peel extracts (Lofarma, Milan, Italy): these extracts are rich in lipid transfer protein (LTP) and do not contain Bet v 1 and profilin (1, 2)
- 4) fresh apple, hazelnut, peach, fennel, raw string bean, and cooked string bean (20 min in boiling water).

IgE specific for cross-reactive allergens (Bet v 1, Bet v 2, and CCD) were detected by RAST (1). Reactivity to LTP purified from peach peel by chromatographic means was detected by ELISA (1). Cross-reactivity to LTP from different vegetable foods was assessed by ELISA inhibition experiments; apple, walnut, hazelnut, peanut, rice, corn, and fennel extracts were used as inhibitors (1). Peach and ovalbumin were used as positive and negative controls, respectively. Finally, IgE reactivity to both peach and boiled string bean extracts was assessed by immunoblot, as previously described (2).

No reactivity to airborne allergens was found. The patient showed strong (3+/4+) reactivity to rice, plum, celery, peanut,