

Table 1. The frequencies of elevated food allergen-specific and total IgE levels at the age of 2 years depending on the use of maternal obstetrical epidural anesthesia (EA)

Outcome variable	Group	Frequency of elevated levels*	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Allergen-specific IgE	No EA	12/40 (30%)	1.00	1.00
	EA-exposed	10/83 (12%)	0.32 (0.12–0.82), $P = 0.018$	0.36 (0.12–1.06)†, $P = 0.064$
Total IgE	No EA	17/38 (45%)	1.00	1.00
	EA-exposed	9/83 (11%)	0.15 (0.06–0.39), $P < 0.001$	0.19 (0.07–0.57)‡, $P = 0.003$

CI, confidence interval; OR, odds ratio.

*See text for details. Adjusted for the effect of: †season and cord blood pH; ‡number of first-degree allergic relatives, season, 10–15 min Apgar and birth length. The criteria for entering and removing explaining variables into the final models were: probability of F-to-enter ≤ 0.10 and probability for F-to-remove ≥ 0.15 .

obstetrical EA is unlikely to contribute to the increase in allergy prevalence. Whether it may in contrast have protective effects, needs to be confirmed with larger study population.

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Tea infusion, another source of Rosaceae allergy

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Key words: allergens; food allergy.

Allergy to *Rosaceae* fruits is a common cause of anaphylaxis in the Mediterranean area, the major allergens involved are lipid transfer proteins (LTP) (1, 2). These allergens are highly resistant to pepsin digestion and thermal processing (3). Fruit tea infusions may contain different ingredients from the *Rosaceae* family and they continue to be allergenic after boiling. We present a case of an anaphylactic reaction after consumption of fruit tea containing rosehip, a *Rosaceae* fruit, in a patient sensitized to *Rosaceae* without related pollinosis

A 31-year-old man presented with abdominal pain, pruritus and generalized urticaria 20 min after drinking fruit tea. He was treated with intramuscular adrenaline and oral antihistamines in the emergency department. Later, he was referred to the Allergy Clinic for study.

Clinical history revealed that in the past, he had presented with an oral allergy syndrome to peach and almonds and he had suffered an anaphylactic reaction after consuming cherries. He had eaten apples without any adverse effects. There was no history of asthma or rhinitis.

Skin prick tests performed on the patient, were positive to mites, nuts, fig, peach, cherry and apple. All pollens and other fruits tested were negative.

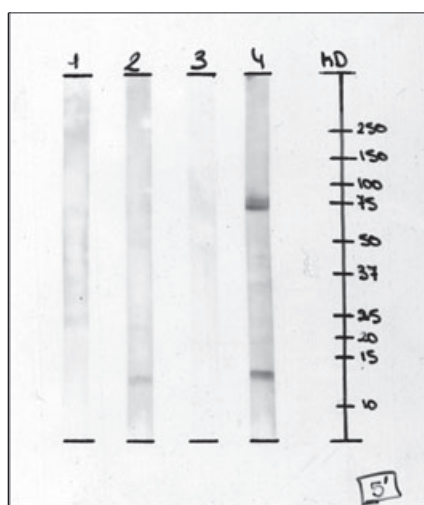
Prick tests were also carried out with the fruit tea and with the allergenic extracts obtained from individual ingredients of the fruit tea that were facilitated by the tea producers. The tea was a blend of rosehip, hibiscus, apple, orange peel and elderberry. The patient showed positivity for fruit tea extract and rosehip extract.

Total IgE was 33 UI/ml. Specific IgE were positive to D pteronysinus: 19.7 kU/l; peach: 3.38 kU/l; apple: 1.05 kU/l; cherry: 2.27 kU/l; plum: 0.99 kU/l; and walnut: 0.8 kU/l. Specific IgE with recombinant allergens were also positive to Pru p 3: 2.90 kU/l and Mal d 3: 0.81 kU/l.

Immunoblot of the patient's serum demonstrated a single 13-kDa band in rosehip and peach extracts (Fig. 1). This band was also identified when the extracts were incubated with polyclonal anti-LTP antibody. Thus, the antipolyclonal antibody identified Pru p 3 (peach LTP) and a similar protein in the rosehip extract. Therefore, the allergen isolated

A case of an anaphylactic reaction caused by a rosehip allergy.

IgE-immunoblotting



- 1: Rosehip + control serum
2: Rosehip + patient's serum
3: Peach skin + control serum
4: Peach skin + patient's serum

Figure 1. Immunoblotting with patient's serum. IgE-binding bands in the peach and rosehip extracts.

belongs to the family of the LTP, the allergens responsible for the most *Rosaceae* sensitization's in the Mediterranean area (4).

Rosehip is the fruit of the dog rose, a plant that belongs to the *Rosaceae* family. The fruit, a berry like structure, is noted for its high vitamin C level and astringent properties. It is used to make tea and preserves. No hypersensitivity reaction after consuming this fruit has been previously reported. The patient was sensitized to LTP present in *Rosaceae* fruits. He already had allergic reactions after consuming cherries, almonds and peaches. However, the presence of specific IgE, demonstrated by *in vivo* and *in vitro* methods, against the rosehip contained in the fruit tea, strongly suggests that this fruit was the cause of the anaphylaxis in the patient and an LTP the allergen involved (5). Cutaneous tests carried out with the other ingredients of the fruit tea were negative and he could eat apple without any symptoms. We did not perform a challenge test because of the severity of the reaction.

Subjects allergic to *Rosaceae* may experience a systemic allergic reaction after consuming fruit tea and they should be warned about this possibility (6). Especially, taking into account that LTPs are present mainly in the skin of the fruits and that they are resistant to heat.

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Anaphylaxis to the anticoagulant acid citrate dextrose

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Key word: drug allergy.

Acid citrate dextrose (ACD) is an anti-coagulant agent commonly used during plasma exchange as well as during blood drawing from donors for its preservation activity on red blood cells and on clotting factor (1). The adverse effects of ACD mainly consist of toxicity due to lowering of calcium (2), which can be prevented by concomitant infusional administration of calcium gluconate (3), but also atypical reaction with flushing and hypotension were reported (2). Moreover, in an animal model the intrapulmonary injection of ACD caused extensive degeneration and necrosis of alveolar pneumocytes and epithelial cells resulting in pulmonary fibrosis (4).

Here, we present a case of anaphylaxis, thus far unreported, caused by ACD. The subject, a 38-year-old Caucasian woman, was a blood donor since 1993. After about 10 min from the beginning of the donation she developed generalized itching, followed by giant urticaria, cough, dyspnoea and wheezing. The donation was immediately stopped and hydrocortisone 500 mg e.v., promethazine 50 mg e.v.

Anaphylactic reaction to ACD.