

Table 1. Results of cow's milk challenge, before and after the sublingual immunotherapy during 6 months

Patients no. (years)	First cow's milk challenge			Second cow's milk challenge		
	Subjective symptoms (dose of CM)	ED (ml)	Objective symptoms	ED (ml)	Symptoms	Evolution/remarks
1 (12)	4 (pruritus)	44	Angioedema, RC	–	None	Normal dairy diet
2 (6)	–	106	Angioedema, urticaria	–	None	Normal dairy milk
3 (8)	0.1 (tickly throat)	37	Digestive anaphylaxis*	–	None	Normal dairy milk
4 (6)	5 (erythema)	36	Digestive anaphylaxis*	150	Abdominal pain	Normal dairy milk 3 months later
5 (17)	0.5 (tickly throat)	8	Asthma, RC	93	Asthma	
6 (9)	0.1 (tickly throat), 4 (cough)	14	Asthma, urticaria	44	Urticaria	DBPCFC at first challenge
7 (6)	9 (cough)	68	Asthma	70	Asthma	Poor compliance
8 (9)	–	4	Digestive anaphylaxis*, urticaria	Not done		Withdrawn

ED, eliciting dose; RC, rhinoconjunctivitis; DBPCFC, double-blind placebo-controlled food challenge.

*Abdominal pain, vomiting and diarrhea.

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Occupational asthma from dried flowers of *Carthamus tinctorius* (safflower) and *Achillea millefolium* (yarrow)

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Key words: *Achillea millefolium*; *Carthamus tinctorius*; occupational asthma safflower; yarrow.

A 44-year-old woman, non-smoker, with a clinical history of spring seasonal rhinoconjunctivitis and asthma. She had no family history of atopy. For the last 6 years, she had been working temporarily as instructor of personnel making dried flower arrangements (centre-pieces and baskets). Since 5 months after

her first contact with dried flowers of safflower and yarrow she began to experience rhinitis, asthma and urticaria symptoms in the workplace when she handled these dried flowers.

The physical examination was normal. Basal spirometry and chest X-ray was normal. Methacholine inhalation test was positive with a PC₂₀ of 2.5 mg/ml. Total serum IgE was 7.94 kU/l. Skin prick test with common aeroallergens were positive to pollen from *Cupressus sempervirens*, *Olea europaea*, *Lolium perenne*, *Salsola kali*, *Artemisia vulgaris* and *Parietaria judaica* and to cat and dog epithelium.

Skin prick test with aqueous extracts from dried flowers were positive to safflower (8 × 5 mm) and yarrow (10 × 7 mm). Specific Inhalation Bronchial Challenge with aqueous extract of safflower (0.625 mg/ml) and yarrow (1.25 mg/ml) elicited an asthmatic response with a fall in FEV₁ of 27% and 31% respectively (Fig. 1). Specific IgE (EAST) with safflower and yarrow flowers was 1.4 and 0.9 kU/l respectively. Immunoblotting with safflower flowers revealed several IgE binding bands of 64, 61, 47, 45, 41, 21, 18.6, and between 14–15 kDa and with yarrow flowers bands of 51, 21 and 18 kDa.

Occupational respiratory symptoms caused by decorative flowers are seldom reported in the literature (1). Only two dried flowers (*Limonium tataricum* and *Gypsophila paniculata*) have been reported as a cause of allergic asthma (2, 3).

We report two dried flowers (*Achillea millefolium* and *Carthamus tinctorius*) as new causes of occupational asthma.

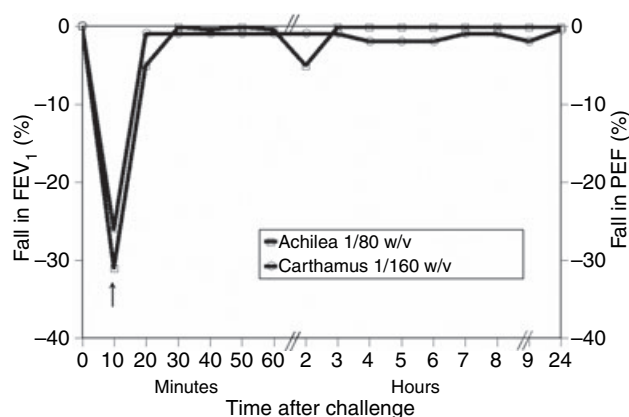


Figure 1. Specific inhalation challenge with dried flowers from *Carthamus tinctorius* and *Achillea millefolium*.

Carthamus tinctorius L. (safflower) and *Achillea millefolium* L. (yarrow) belong to the Compositae family. Although yarrow is a well-known cause of contact dermatitis no cases of IgE mediated allergy to yarrow or safflower had been reported before (4, 5).

We have described two additional dried flowers as new cause of occupational asthma demonstrated by provocative bronchial challenge. The results of the skin prick and bronchial provocation tests as well as the demonstration of specific IgE antibodies by EAST and Immunoblotting strongly suggest that an IgE mediated immunologic mechanism is responsible for the patient's symptoms.

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Sodium benzoate-induced pruritus

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Key words: food additives intolerance; food allergy; pruritus.

There is growing evidence that some cases of chronic generalized pruritus may be induced by food additive intolerance. In previous studies sodium nitrate was the most fre-

quently involved substance (1–3), and one case of sodium metabisulphite-intolerance has been reported (3). A case of sodium benzoate-induced chronic pruritus is reported here.

A 75-year-old woman presented with a 6-year history of diffuse, severe pruritus in the absence of any skin rash. On clinical examination the patient showed severe scratching lesions at the upper back and deltoid regions. The woman had been given a number of different anti-histamines, including cetirizine, loratadine, mizolastine, and ebastine with little benefit. She did not report a familiar or personal history of atopic disease, and scored negative on skin prick tests (SPT) with a large panel of commercial food extracts (Abello 1 : 20 w/v). The autologous serum skin test (4) did not elicit any wheal and flare reaction. The woman had suffered from Graves' disease 20 years before and had developed hypothyroidism following ¹²⁵I treatment; for this reason, she was presently taking thyroxine. After exclusion of diseases associated with itching (lymphomas, parasitoses, polycythaemia vera and hepatic diseases) (5) by appropriate laboratory and radiographic investigations, an elimination diet (free of food additives) was started. Ten days after the start of the diet regimen the woman reported 80% reduction of pruritus that totally disappeared 1 week later. The effect of the diet regimen was also indirectly shown by the progressive healing of the scratching skin lesions at the back and upper limbs. Pruritus re-appeared 3–4 days after resuming an unrestricted diet and disappeared again when the additive free regimen was restored. After 3 weeks without symptoms double blind, placebo-controlled oral challenges with food additives were carried out. The patient continued the elimination diet throughout the procedure.

Additives and doses given are shown in Table 1. All preparations were given in opaque capsules (Lofarma Allergeni, Milano, Italia) in a randomized sequence using multiple placebos. Active substances and placebos were challenged at least 1-week apart.

About 24 h after taking sodium benzoate 100 mg the patient experienced a relapse of diffuse pruritus that lasted for 48 h. None of the other substances nor

The first reported case of generalized pruritus induced by sodium benzoate.