

Anaphylactic Reaction to Camomile Tea

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ABSTRACT

Background: A type-IV-allergic reaction to German camomile (*Matricaria chamomilla*) in a form of allergic contact dermatitis is not unusual. However, only a few cases of anaphylactic reaction to camomile have been described in the literature.

Case Summary: We present the case of a 38-year-old Caucasian man who developed an episode of severe anaphylaxis with generalized urticaria, angioedema and severe dyspnoea one hour after consuming camomile tea. Laboratory examination demonstrated a total serum IgE of 123 kU/l with specific IgE against camomile (4.94 kU/l, class 3). Skin prick test and labial provocation test with camomile showed a strong positive reaction.

Discussion: Our case confirms the presence of a type-I allergy to orally ingested camomile and indicates that the incidence and risk may be underestimated. Additional response to mugwort and pollen-derived food allergens should be evaluated in patients sensitised to camomile due to a higher incidence of allergic cross-reactivity.

KEY WORDS

anaphylactic reaction, camomile, tea

INTRODUCTION

German camomile (*Matricaria chamomilla*) is a common and well-known allergen which elicits Type-IV-allergic reactions.^{1,2} Anaphylactic reactions caused by camomile are very rare, with only a few well documented reports.³

CLINICAL SUMMARY

A 38-year-old Caucasian man presented to our emergency department with an episode of severe anaphylaxis displaying generalized urticaria, angioedema and severe dyspnoea one hour after consuming camomile tea. Initially the patient reported discrete itching of his oral mucosa. His systemic symptoms improved 20 minutes after emergency treatment with intravenous antihistamine Dimetinden (Fenistil®) and corticosteroid 1,2-Dehydrocortisol (Prednisolon®) at a dose of 250 mg. His past history showed mild atopic eczema since infancy and an exacerbating seasonal allergic rhinitis to birch pollen for eight years with an oral allergy syndrome associated with

apple and tree nuts. A family history of allergic rhinitis in his sibling brother and mild atopic eczema in his father was noted. Physical examination was unremarkable. The patient had consumed camomile tea without any symptoms until puberty when his taste changed and thereafter he seldom drank camomile tea. In other words, the anaphylactic reaction developed after a latency of more than twenty years of abstinence from camomile tea.

Laboratory examination demonstrated a total serum IgE of 123 kU/l with specific IgE against mugwort (2.77 kU/l, class 2), birch (6.28 kU/l, class 3), alder (5.6 kU/l, class 3), apple (0.9 kU/l, class 2), peanut (1.62 kU/l, class 2) and camomile (4.94 kU/l, class 3) (ImmunoCAP 250, Phadia, Uppsala, Sweden). Skin prick testing showed positive reactions to tree pollen (birch, alder, hazel, common beech, oak) and herbs (mugwort, dandelion, goldenrod) (All extracts from Allergopharma, Reinbek, Germany). For the skin prick test and labial provocation test we brewed commercial camomile tea. Next we soured 3 g camomile bloom with 100 ml boiled water for 10

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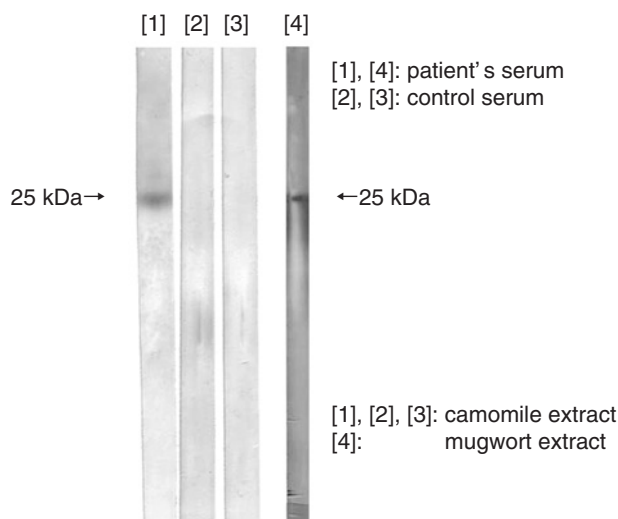


Fig. 1 Western blot analysis performed with liquid camomile extract and mugwort extract revealed specific IgE reactivity in the range of 25 kDa.

minutes. The patient responded positively in the prick test with the upper mentioned pure and 1 : 10 diluted tea, dry camomile bloom and brewed camomile bloom, but negatively with a sesquiterpen-lactone-mix. The labial provocation test was confirmatory, resulting in generalized pruritus with a 9-mm-diameter urticarial lesion one minute after allergen contact (1 drop undiluted camomile tea on the lip).

Sodium dodecyl sulphate polyacrylamide gel electrophoresis (SDS-PAGE) and immunoblots were performed with camomile extract and mugwort. In SDS-PAGE, the extracts were separated on 12.5% denaturing polyacrylamide gels. In immunoblot experiments, proteins were transferred to a polyvinylidene fluoride membrane (Millipore, Billerica, USA) according to the method described by Towbin *et al.* in 1979. To get the liquid extract, 5 g camomile bloom was incubated with 5 ml phosphate buffered saline (PBS) overnight at 4°C, followed by filtration. Western blot analysis of liquid camomile extract revealed a specific IgE reactivity pointing to 25 kDa which is in agreement with the results reported by Reider.³ In addition, the IgE reactivity against mugwort was also pointed to 25 kDa (Fig. 1).

The patient was advised to avoid contact with and ingestion of camomile and to carry an emergency kit

containing antihistamines, corticosteroids and an adrenaline autoinjector.

PATHOLOGICAL FINDINGS

We did not perform any histopathological examination in this patient.

DISCUSSION

German Chamomile (*Matricaria recutita*), is a Southern European annual plant of the sunflower family Asteraceae. Taken as an herbal tea, it is used worldwide as a medical remedy against sore stomach, irritable bowel syndrome, and as a gentle sleeping aid. The allergens responsible for type I camomile allergy have not yet been completely characterized. Reider *et al.*³ identified a homologue of Bet v 1 and noncarbohydrate higher molecular weight proteins (23–50 kDa) as possible eliciting allergens, which may account for the presence of cross-reactivity with other foods and pollen. Concerning cross-reactivity, patients sensitised to mugwort rarely show adverse reactions to camomile, while most subjects allergic to camomile are also sensitized to mugwort.^{4,5} Our findings of a 25 kDa IgE reactivity and cross-reactivity to mugwort pollen are consistent with these reports (Fig. 1).

Our case confirms the presence of a type-I allergy to orally ingested camomile, indicating that the incidence and risk may be underestimated. Furthermore, patients sensitised to camomile should be evaluated for their response to mugwort and pollen-derived food allergens, based on a high incidence of allergic cross-reactivity.

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