

hairdressers are persulfates, and to a lesser extent permanent hair dyes, latex and paraphenylenediamine (6), these workers are also routinely exposed to perfumes and cosmetics containing eugenol (1).

The late asthmatic response and the increase in eosinophil and lymphocyte counts in sputum after eugenol SIC in the patient support the specificity of the airway reaction to eugenol. The causative role of eugenol in occupational rhinitis and asthma should be investigated among hairdressers, beauty shop and drugstore workers, and in dental personnel exposed to this compound.

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Injection site reactions to TNF- α blocking agents with positive skin tests

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Key words: adalimumab; drug eruptions; etanercept; skin tests; tumor necrosis factor- α antagonists.

Tumor necrosis factor- α (TNF- α) antagonists (infliximab, etanercept, and adalimumab) have dramatically improved the quality of life of patients with rheumatoid arthritis (RA) and psoriatic arthritis (PA). Both immediate and delayed adverse reactions have been described, suggesting type I and III hypersensitivity mechanisms; however,

immunoglobulin (Ig) E-mediated or cell-mediated reactions have never been demonstrated. We describe here injection site reactions (ISR)

consisting in edema, erythema, and itching of at least 5–6 cm in diameter and lasting for 4–5 days. Two patients with RA received subcutaneous administration of etanercept, a soluble recombinant TNF receptor : Fc fusion protein, and two patients with PA received adalimumab, a recombinant fully human monoclonal antibody anti-TNF- α .

Case 1: A 62-year-old female treated with methylprednisolone, hydroxychloroquine, and methotrexate. Since the second administration of etanercept, 50 mg/week, an ISR occurred after 6 h.

Case 2: A 58-year-old female treated with methylprednisolone and methotrexate. After 5 years of therapy with etanercept, 50 mg/week, she noticed an ISR occurring quickly after 5 min, peaking at 30 min and lasting for 4 days.

Case 3: A 65-year-old male. Since the third dose of adalimumab, 40 mg/every other week, an ISR occurred after 24 h.

Case 4: A 61-year-old female. Since the sixth dose of adalimumab, 40 mg/every other week, she noticed, after 12 h, an ISR which lasted for 3–4 days.

All the patients were not atopic and had normal levels of total IgE.

A vial of Enbrel (25 mg etanercept, 40 mg mannitol, 10 mg sucrose, 1.2 mg tromethamine in 1 ml water) and a prefilled pen of Humira (40 mg

Four patients with injection site reactions to etanercept and adalimumab and positive intradermal tests.

Table 1. Results of skin tests

	Etanercept*					Adalimumab*			
	Prick	Intradermal				Prick	Intradermal	Intradermal	Patch
Reading	20 min	15 min	15 min	15 min	24–48 h	20 min	15 min	24–48 h	24–48 h
Concentration (mg/ml)	25	5	1	0.1	5	50	5	50	50
Controls (10)	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Case 1	0/0	7/12	7/10	5/5	0/0				
Case 2	0/0	6/15	6/6	0/0	0/0				
Case 3						0/0	0/0	7/7	0/0
Case 4						0/0	0/0	7/15	0/0

*Diameter in millimeter of wheal/flare.

adalimumab, 9.6 mannitol, 0.8 mg polysorbate 80 in 0.8 ml water) have been used.

The highest nonirritating concentrations found in 10 control subjects are shown in Table 1.

Intradermal tests with mannitol (18 mg/ml), an excipient of both preparations, were negative in 10 controls and four patients.

In patients 1 and 2 intradermal tests with etanercept were positive at the immediate reading and negative at the late reading, suggesting an immediate reaction, possibly IgE-mediated.

In patients 3 and 4 intradermal tests with adalimumab showed positive results only at the late reading and the reaction lasted 5 days, suggesting a cell-mediated reaction. Prick and patch test were negative (see Table 1). These results are compatible with type beta hypersensitivity reactions following the classification of Pichler (1).

As reported in the literature, ISRs, mild-to-moderate in intensity, occur in 29.3% patients with etanercept (2) and 15.3% with adalimumab (3). Skin test with proteins is highly predictive: in spite of this, a review of the literature did not evidence any allergological study in these cases.

Previous reports in cases of ISR describe histologic findings of a cell-mediated Th1 reaction, with CD8+ T cells composing the majority of the dermal infiltrate (4); however, histologic features of eosinophilic cellulitis as a response to etanercept suggest a Th2-mediated phenomenon (5).

Interestingly, similar large local reactions following Hymenoptera stings are frequently observed in patients who show specific IgE against the venoms (6).

Further studies are needed in more cases, also by means of biopsies of lesions and skin test reactions and determination of serum-specific IgE and IgG to anti-TNF- α blocking agents, to ascertain the precise immune mechanisms of these reactions.

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The prevalence of asthma and allergy among university students in Van, Turkey

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Key words: allergic rhinitis prevalence; allergy prevalence; asthma prevalence; Turkey.

Allergic rhinitis is a common atopic disorder worldwide. It can accompany to

conditions like asthma, otitis media, sinusitis, nasal polyposis, lower respiratory tract infections and dental malocclusion, which are the comorbid conditions of allergic rhinitis.

Asthma is one of the most important comorbid conditions (1). Allergic diseases are increasing in prevalence, and they add considerably to the burden of health care costs (2). Epidemiological studies have shown that the prevalence of asthma and allergic diseases may show variation from country to country (3, 4). The aim of our study was to determine the prevalence of asthma and allergic diseases in university students in an eastern part of Turkey, in Van city, through the ECRHS questionnaire.

First year students attending the Yüzüncü Yıl University for registration in September 2006 during the 4th–11th were asked to fulfill a questionnaire. Of the 2134 students who completed the questionnaire, 1463 (68.6%) were male and 671 (31.4%) were female. Mean ages were 20.50 ± 3.75 years for males and 19.79 ± 2.59 years for females. A total of 56.7% of the students' mothers had no primary school education. Only 10.3% of this group of mothers could read and write, while the remaining 46.4% were illiterate, and 94.7% of the students' mothers were housewives, 21% of the students' fathers had no primary school education. Only 10.3% of this group of fathers could read and write, while the remaining 10.7% were illiterate. The vast majority (54.7%) of the fathers had a primary school education. Fifty-one per cent of the students' families had a total salary below 250 Euro.

The prevalence of cumulative asthma in the population of first year students was 1.4%, and the prevalence of asthma for the past 12 months was 1%. The prevalence of asthma-like symptoms (wheezing, being woken by an attack of breathlessness and/or cough and/or chest tightness) was 12.1%. Two hundred and five students (9.6%)

The rate of self-reported asthma among university students in the eastern part of Turkey was found to be lower (1.4%) than in other countries, and smoking is an important public health problem in our region.