

The Results of the Examination of Patients with eczema in Greece

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Introduction

Atopic dermatitis or atopic eczema is the most frequent skin disease of childhood. It is characterized by a chronic recurrent inflammation of the skin accompanied by disturbing itching. The etiology is complex including the genetic defects of the epidermic barrier and of the innate immunity as well as environmental factors. Diagnosis is based on clinical criteria and laboratory investigation is supportive of the atopic predisposition being not always relative to the disease severity and natural history. Eczema is usually the first manifestation of the atopic symptoms starting the so called 'atopic march', being followed by allergic rhinitis and asthma.

The study includes the data of patients examined in the 1st Pediatric clinic of the University of Athens between 2013 and 2017 in an outpatients and inpatients basis.

Patients with eczema

Patients with eczema represent a number of 121 children among 1090 patients with other atopic diseases (11.02%). The number is not considered representative of the prevalence of eczema among patients with allergy, because eczema is a disease treated by Pediatricians and Dermatologists in Greece.

Clinical presentation

The patients reported had the typical characteristics of eczema according to age. They were 70 boys (58.33%) and 50 girls (41.67%) including 15 immigrants and Roma (12.4%) (Figure 1). In 36 of them the diagnosis was confirmed before the age of one year (29.75%), while in the rest diagnosis was delayed (Figure 2). The disease was characterized mild to moderate in 109 patients (90%) whereas moderate to severe in 12 patients (9.9%).

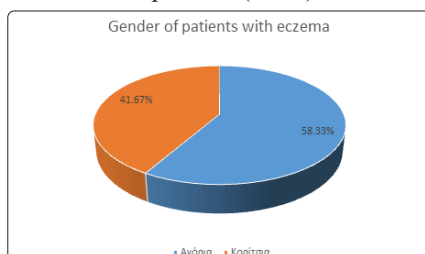


Figure 1: The distribution of gender among our patients (blue=boys, red=girls).

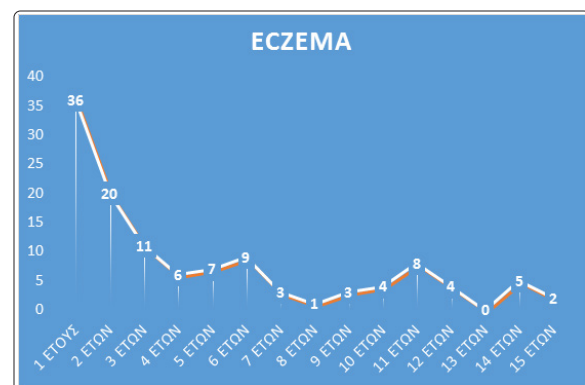


Figure 2: The distribution of the ages of referral for investigation

Sensitizations in food and aeroallergens

Skin prick tests were performed and the results were considered positive when a 3mm wheal was produced. Positive tests to food and aeroallergens were confirmed in 67 patients (55.37%), while negative ones in 52 patients (42.9%). In 9 patients skin prick tests were not considered necessary regarding the clinical presentation and course of the disease. Regarding the 67 patients with sensitizations, 36 had a food allergy (29.75%) and 31 sensitizations to aeroallergens (25.6%).

As far as patients with positive sensitization to foods are concerned, 23 (63.88%) had a clinical history relevant to an IgE mediated allergy. The percentage of patients with eczema with a confirmed food allergy with a challenge test was 19%. The most frequent sensitizations were to egg white, cow milk, fish and peanut (Figure 3). Regarding patients with sensitizations to aeroallergens, 11 patients developed allergic rhinitis and/or asthma (35.48%). The most frequent sensitizations were on grasses and especially Timothy, dust mites especially D. Pteronissinus, olive tree and animal dander (Figure 4). Sixteen patients presented with post infectious wheezing requiring treatment (13.22%) and negative sensitizations. The mean level of total IgE detected by the ImmunoCap method was 680.21IU/ml.

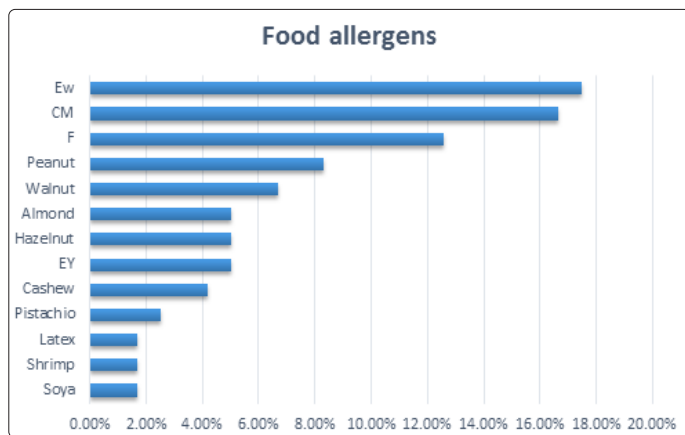


Figure 3: Sensitization to food allergens of our patients with eczema

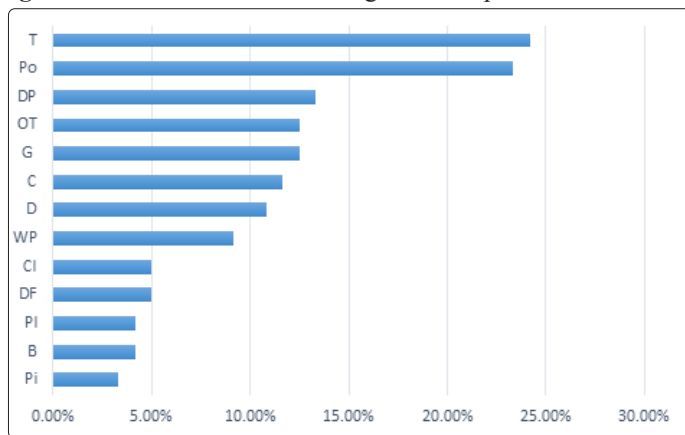


Figure 4: Sensitization to aeroallergens of our patients with eczema

Treatment

We emphasize the fact that education of the caregiver and the patient of an appropriate age was the main purpose of the nurse staff. Hand written instructions and printed material regarding the course of the disease were given. A significant number of patients reaching 109 (90%) required a mild treatment with moisturizers and application of a low potency corticosteroid (fucidic acid and betamethasone). In 19 of them treatment with montelukast was initiated due to post infectious asthma. Only 10 patients (9.9%) required high potency steroids (mometazone, Elocon) in combination with a calcineurin inhibitor (pimecrolimus, Elidel) to retain a long remission. In 1 patient immunoglobulin was given for 6 months and in 1 cyclosporin according to international consensus.

Family history

Our data revealed that 41 patients had an atopic history from the father (33.88%) and 46 from the mother (38%) whereas 21 had an atopy predisposition from both parents (17.35%). Parents were suffering from allergic rhinitis and asthma. However, 34 patients did not mention any atopic predisposition (28%).

Discussion

The prevalence of eczema shows a geographical distribution and it has been reported to range from 10 to 20% among children younger than 18 years showing a tendency to increase [1]. The frequency of patients with eczema among a biased population with atopic disease in our data was 11.1 % which is a relative low percentage. However,

our figures are not considered representative of the disease among Greek patients because the eczema is mainly treated by pediatricians and dermatologists in Greece.

The clinical presentation was relevant to the age and 29.75% of children were referred for investigation before the age of one year and 46.28% before the age of 2 years. However, due to the fact that the study is retrospective, a percentage of 31.4% examined after the 5th year for another allergic disease revealed a history of eczema. In the literature it is reported that 60% of children have the initial signs of disease before the age of one year and 90% by 5 years of age [1]. The discrepancy is considered a consequence of later referral of cases with moderate persistent eczema and with mild chronic eczema for investigation of another atopic disease. However as described in the literature there is a predominance of boys with the disease.

Atopic dermatitis is due to a combination of impaired innate and distorted adaptive immunity of the skin with suboptimal barrier function [2]. Sensitizations to both food and aeroallergens allergens of patients with eczema happens mainly through the skin rather than the intestine or the lung. Thus, those sensitizations are not frequently responsible for symptoms. Regarding our patient's sensitization to those allergens, positive results were detected in a percentage of 55.37% of patients, while 42.9% revealed negative results. Moreover, 29.75% of patients showed sensitizations to food allergens, whereas 13.33% to aeroallergens. The predominant food sensitizations were to egg white, cow's milk and peanut and the commonest sensitizations to aeroallergens was found for grasses and especially Timothy, mites, olive tree and animal dander. The mean level of total IgE was relatively high as expected.

As far as concomitant diseases are concerned, although 29.75% of patients had a food sensitization, only 19% of the total number had a food allergy confirmed by clinical symptoms. In the literature, it is reported that the one third of patients with eczema have a food allergy [3]. However, 89% of oral food challenge results were negative [4]. The commonest sensitizations were cow milk, egg and peanut as in our sample. In addition, 9% of our patients developed allergic rhinitis and/or asthma. We mention also that 13.33% had post infectious wheezing from a young age. In the literature, the above percentages are higher and 50% of patients with atopic dermatitis have associated asthma [5]. In addition, it is reported that 80% of patients have elevated serum IgE [1].

It is impressive that most patients had a mild disease well treated only with moisturizers and the application of mild hydrocortisteroid during flares. A small proportion of them (15.7%) were treated with montelukast due to respiratory symptoms. However, 9.9% of patients required more vigorous treatment with mometazone and calcineurin inhibitors for a long period. One patient received immunomodulation with g-globulin because of his severe disease with favorable results. It is supposed that favorable outcome and diminished requirement of more sophisticated treatment is due to the perseverance of the department on the education of the patients and parents. Appropriate daily skin care, avoidance of triggers and early treatment of flares were the main reasons for our favorable results [1].

Finally as far family history is concerned, in the literature approximately 70% of patients had a family history of atopy and maternal history is more predictive [1]. In our sample, the percentage

of hereditary predisposition is similar and inheritance from the maternal side was almost equal to the predisposition from the paternal side.

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