HOSPITAL CHRONICLES 2022, 17(1): 8–11

ORIGINAL PAPER

# A Retrospective Study of 120 Patients With Eczema in Greece

Katerina Salavoura, Nikoleta Laliotou, Dimitrios Xatzis

*Department of Allergy, Asthma and Inflammation, 1st Pediatric Clinic, National and Kapodistrian University of Athens, Children's Hospital "Agia Sophia", Athens, Greece*

## ABSTRACT

**OBJECTIVES:** Eczema is a common chronic and troublesome disease for the patients and the parents. The knowledge of the process of disease and management of treatment and comorbidities is important.

**METHODS:** This is a retrospective study of 120 patients.

**RESULTS:** A significant number of patients had sensitization of no clinical importance. Most of them responded well to hydration treatment and they did not need more sophisticated drugs.

**CONCLUSIONS:** Eczema is a chronic disease with exacerbations and remissions. However, environmental factors rather than foods and aeroallergens contribute to exacerbations. Educating parents and patients properly about the hydration of epidermis and the use of anti-inflammatory drugs could help in long term remissions.

**KEY WORDS:** *eczema, sensitizations to allergens, disease severity, treatment*

## 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[1]. 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 progress. Eczema is usually the first manifestation of the atopic symptoms starting the so called "atopic march", being followed by food allergies as well as allergic rhinitis and asthma.

The study includes the data of patients examined in the Department of between 2013 and 2017 in an outpatients and inpatients basis.

## METHODS

We have analyzed retrospectively the data from 120/1090 (11.01%) patients examined due to eczema during the period 2013-2017 in the Allergy Department of a Pediatric University Clinic. The number is not considered representative of patients

*Correspondence to:*
Katerina Salavoura
45 Georgiou Papandreou street,
15773 Athens, Greece
Mobile: +30 6977592484
E-mail: salavourakaterina@gmail.com

*Manuscript received November 28, 2021; Revised manuscript received September 11, 2022; Accepted September 11, 2022*

**Conflict of Interest:** none declared

suffering from eczema, because a significant number of patients with eczema are examined by Pediatricians in Primary Care and Dermatologists.

The Department of Allergy, Asthma and Inflammation works as an outpatient Unit within the 1st Pediatric Clinic of the University of Athens as well as an inpatients referral unit from the pediatric clinics and it has a high incidence of emergencies. Detailed clinical history including the age, gender and the first appearance of symptoms, clinical presentation, concomitant diseases and physical examination was performed. Children had a follow up every 3 or 6 months depending on the severity of their disease.

Sensitization measurements to food and aero-allergens were performed. Skin prick tests performed by the same experienced nurse were recorded. Skin prick tests were considered positive when a ≥3mm measurement was detected with concomitant histamine reaction above 3mm. Specific IgE was measured in severe cases using the ImmunoCap method and a titer ≥0.35 was considered positive. Statistical analysis was performed by a specialist in excel using our data.

## RESULTS

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%). In 36 of them the diagnosis was confirmed before the age of one year (29.75%), while in the rest diagnosis was delayed (Figure 1). The disease was characterized mild to moderate in 109 patients (90%) whereas moderate to severe in 12 patients (9.9%).

Positive tests to food and aeroallergens were detected in 67/120 patients (55.83%), while negative ones in 52/120 patients (43.33%). In 9/120 (7.5%) patients skin prick tests were not considered necessary regarding the clinical presentation and course of the disease. Regarding the 67 patients with positive sensitizations, 36/120 had a positive test to food allergens (30 %) and 31/120 had positive tests to aeroallergens (25.83%).

As far as patients with positive sensitization to foods is concerned, 23/120 (19.16%) had a clinical history relevant to an IgE mediated allergy. The most frequent sensitizations were to egg white=21/120, (17.50%), egg yolk=6/120, (5%), cow milk =20/120, (16.67%), fish=15/120, (12.55%) peanut=10/120, (8.33%) and walnut 8/120, (6.67%) (Figure 2). Regarding patients with sensitizations to aeroallergens, 11/120 (9.1%) patients developed symptoms of allergic rhinitis and/or asthma. The most frequent sensitizations were on Timothy grass=29/120, (24.17%), Poplar=28/120, (23.33%), D. Pteronyssinus=16/120, (13.33%), Olive Tree=15/120, (22.55%), Grass mix 15/120, (12.50%), pets, (cat=14/120, 11.67%, dog=13/120, 10.83%) and Wall Pellitory=11/120, (9.17%) (Figure 3). The mean level of total IgE of patients with eczema detected by the ImmunoCap method was 680.21IU/ml (normal rates <50IU/ml depending on the age), which is a high level.

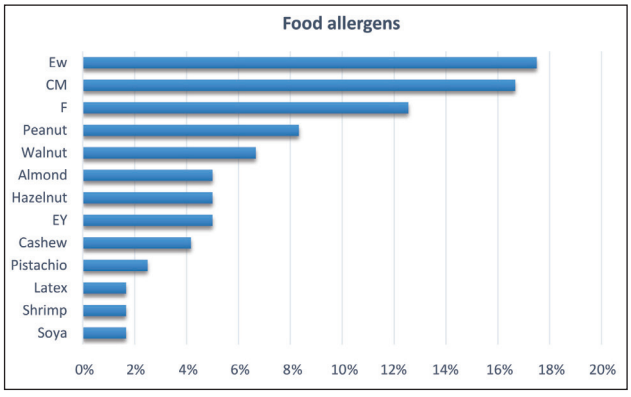


**FIGURE 2.** Sensitization to food allergens in our patients with eczema.

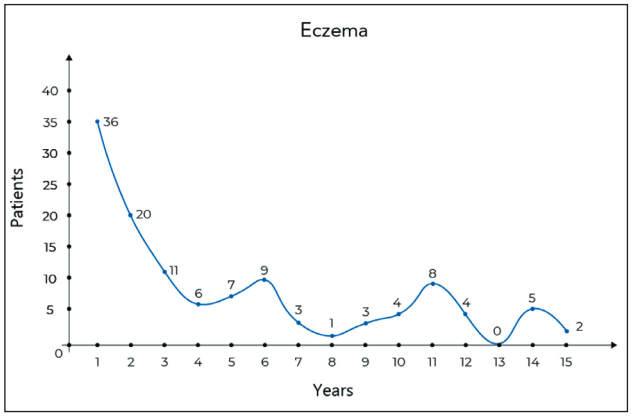


**FIGURE 1.** The distribution of ages regarding initial diagnosis of eczema.

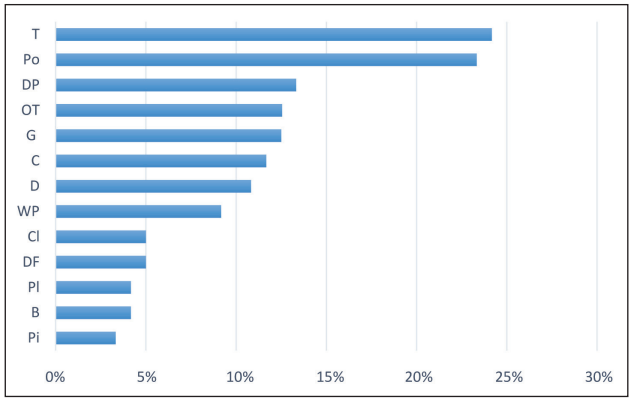


**FIGURE 3.** Sensitization to aeroallergens in our patients with eczema.

It is important to emphasize that education of caregivers was a priority. Hand written instructions and printed material regarding treatment and the course of the disease were offered. A significant number of patients reaching 109/120 (90%) required a mild treatment with moisturizers and application of a low potency corticosteroid (fucidic acid and betamethasone). In 19/120 (15.83%) of patients, treatment with montelucast was initiated due respiratory symptoms. Only 10/120 (8.33%) patients required high potency local steroids (mometazone) and/or a calcineurin inhibitor (pimecrolimus) for 1 month and to a further schedule of application 2 times per week to retain a long remission. In 1 patient immunoglobulin was given for 6 months and in 1 cyclosporin according to international consensus.

Our data revealed that 41/120 (33.88%) patients had an atopic history from the father and 46/120 (38%) from the mother whereas 21/120 (17.35%) had an atopic predisposition from both parents. However, 34/120 (28%) patients did not mention any atopic predisposition. Parents were suffering mainly from allergic rhinitis and asthma.

## 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 rise[2].

The clinical presentation was relevant to the age and 36/120 (29.75%) of children were referred for investigation before the age of one year and 56/120 (46.28%) before the age of 2 years. A significant percentage 63/120 (52.5%) had their first examination by an allergist at the age of 3 years and older. However, a significant percentage of them were managed by their pediatrician. It is reported that 60% of children had the initial signs of disease before the age of one year and 90% by 5 years of age[2]. The discrepancy is considered a consequence of later referral of cases with moderate and with mild chronic eczema for investigation when another atopic disease was present. As described in the literature there is a predominance the boys with the disease[2].

Atopic dermatitis is due to a combination of epidermis barrier dysfunction and impaired innate immunity. 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[1].

Sensitization to allergens and thus an atopic predisposition was detected in 55.83% of patients in our sample. Although 30% of them were sensitized to one or more food allergens only 19.16% had clinical symptoms when consuming the relevant foods (23/36, 63.88%). Additionally, from the 31 patients with sensitization to aeroallergens only 11 had symptoms of allergic rhinitis and/or asthma (11/31, 35.48%).

It is reported that the one third of patients with eczema have a food allergy[3]. However, challenge confirmed food allergy is detected in 11 of patients (4%). In our sample the 1/5 of patients had symptoms of food allergy not confirmed by a challenge procedure. A similar percentage (9.1%) developed respiratory symptoms. In the literature, the above percentages are higher and 50% of patients with atopic dermatitis have associated asthma[4]. Discrepancies are considered relevant to the natural course of the disease depending on geographical area.

Regarding sensitizations to food allergens in our sample, most patients were sensitized to egg, milk, peanut and walnut. In the literature as in our sample, the commonest sensitizations were cow milk, egg and peanut, although sensitization to fish was exceptionally high[5]. In addition, sensitizations were high for grasses and especially Timothy, tree pollen and mites. Sensitizations to mites were not as high as expected.

It is impressive that most patients had a mild disease well treated only with moisturizers and the application of mild hydrocortisone during flares. 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[6]. New data regarding treatment of atopic dermatitis based on the categorization to different endotypes, related to different mechanisms of the development of the disease, would be taken in consideration[7].

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[8]. In our sample, the percentage of hereditary predisposition is similar from both parents and a significant percentage has not reported family history of atopy.

## CONCLUSIONS

Eczema referrals for further atopy investigation is relatively low (11.1%) and most of the patients with eczema are managed by Dermatologists and Pediatricians. A significant percentage is sensitized to food and aeroallergens but few of them develop clinical symptoms. Reporting the findings in a British journal has been considered. In the UK, eczema prevalence is quite high. Reporting the Greek experience could probably contribute to the management of the disease.

## REFERENCES

1. David Boothe W, Tarbox JA, Tarbox MB. Atopic Dermatitis: Pathophysiology. *Adv Exp Med Biol* 2017;1027:21-37.
2. Eichenfield LF, Tom WL, Chamlin SL, et al. Guidelines of care for the management of atopic dermatitis: section 1. Diagnosis and assessment of atopic dermatitis. *J Am Acad*

*Dermatol* 2014;70:338-351.
3. Schneider L, Tilles S, Lio P, et al. Atopic dermatitis: a practice parameter update 2012. *J Allergy Clin Immunol* 2013;131:295-299.
4. Wolter S, Price HN. Atopic dermatitis. *Pediatr Clin North Am* 2014;61:241-260.
5. Tham EH, Leung DY. Mechanisms by which atopic dermatitis predisposes to food allergy and the atopic march. *Allergy Asthma Immunol Res* 2019;11:4-15.
6. Wollenberg A, Feichtner K. Atopic dermatitis and skin allergies - update and outlook. *Allergy* 2013; 68:1509-1519.
7. Czarnowicki T, He H, Krueger JG, Guttman-Yassky E. Atopic dermatitis endotypes and implications for targeted therapeutics. *J Allergy Clin Immunol* 2019;143:1-11.
8. Saito H. State of the art: atopic dermatitis. *Allergol Int* 2013; 62:149.