

# THE PREVALENCE OF ATOPIC DERMATITIS IN CHILDREN FROM VIII-TH GRADE IN SIBIU

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**Keywords:** atopic dermatitis, prevalence, school children

**Abstract:** In Romania there are only few epidemiological studies on atopic dermatitis, so that a study on its prevalence, is, I think, welcomed. This study was conducted on one group of school children in Sibiu, 813 from 8th forms. ISAAC questionnaires were used, and there were analyzed a number of parameters: presence of erythema lasting more than 6 months, presence of itching at this level last year, its location in the fold of the elbow, in the popliteal region, at the ankles, under the bottom, around the neck, ears or eyes, the number of nocturnal awakenings due to itching and if ever had eczema / atopic dermatitis. Among the 813 students surveyed, 6.39% had symptoms of atopic dermatitis.

**Cuvinte cheie:** dermatită atopică, prevalență, copii, colari

**Rezumat:** În România există doar câteva studii epidemiologice despre dermatita atopică, încât un studiu despre prevalența acesteia, este considerăm, binevenit. Studiul de față s-a efectuat pe un lot de copii școlari din Municipiul Sibiu, 813 copii de clasa a VIII-a. S-au folosit chestionare ISAAC, prin care s-au urmărit o serie de parametrii: prezența unui eritem cu durată peste 6 luni, prezența pruritului la acest nivel în ultimul an, localizarea acestuia în plica cotului, în regiunea poplitee, în fața gleznelor, sub fund, în jurul gâtului, urechilor sau ochilor, numărul de treziri nocturne datorat pruritului și dacă a avut vreodată eczemă / dermatită atopică. Dintre cei 813 elevi chestionați, 6,39% au prezentat manifestări de dermatită atopică.

## INTRODUCTION

Little is known about the epidemiology of atopic dermatitis (atopic eczema) in Romania. However, geographical variations in the prevalence of eczema in children have been described in Great Britain, and these closely match the regional variations in hay fever (1, 2). Comparisons of parental –children report of eczema over time in Great Britain (3,4) and in Denmark (5) have suggested that eczema is more common amongst recent generations of children (6). Studies of children whose parents have migrated from developing to developed countries suggest that eczema is associated with urbanization, and with development within those industrialized countries (7, 8).

This paper has proposed to determinate the prevalence of atopic dermatitis in children of 13-14 years in Sibiu.

## MATERIAL AND METHOD

ISAAC questionnaire (International Study on Asthma and Allergic Diseases in Children) was used, which were applied in 2010 to children of eighth graders from the city of Sibiu.

### Studied population

The study was conducted in all 13-14 years old school children of all the 16 schools in Sibiu, a city of about 170,000 inhabitants. Sibiu is located in Southern Transylvania, is a moderately industrialized city, but has heavy traffic. The average temperature in July is + 23 ° C and in January -6 ° C. The study was conducted in October and November, the questionnaires were completed with help of the parents and all

children to school on questionnaires handed were included in the study.

### Study design

Questionnaires for atopic dermatitis were concordant with those recommended by the International Study of Allergy and Asthma in Children (ISAAC). ISAAC questionnaires were translated from English into Romanian by a translator specialized in Medical English. With the questionnaire we followed up a number of parameters: presence of erythema lasting more than 6 months, presence of itching at this level last year, its location in the fold of the elbow, in the popliteal region, at the ankles, under the bottom, around the neck, ears or eyes. We also track the number of nocturnal awakenings due to itching and if ever had eczema / atopic dermatitis. Each questionnaire was completed jointly parent - child.

## RESULTS

Among the 813 children of grade VIII, who completed the questionnaires, 761 children (93.60%) were healthy, does not have any red spot 6-months, but 52 children (6.39% ) had this problem (fig.1).

Among the 52 affected children, 32 (61.53%) were girls and 20 (38.46%) boys.

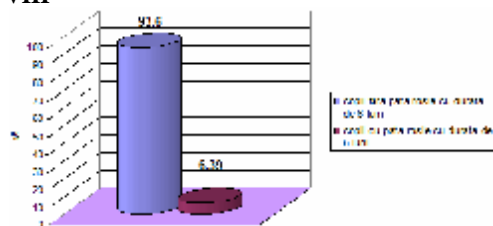
Itching was present in the last 12 months in 22 (42.30%) children, of which 12 girls and 10 boys (fig.2).

Among skin affected children, 8 (15.38%) were affected in the fold of the elbow or in popliteal region, at ankles, thighs, around neck, ears or eyes. Of these, 5 were girls and 3 boys (fig. 3).

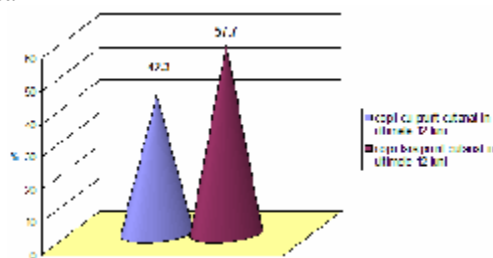
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## CLINICAL ASPECTS

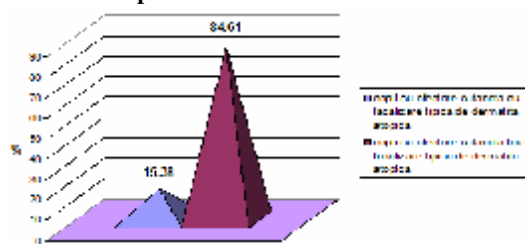
**Figure no. 1. The prevalence of skin lesions in children of grade VIII**



**Figure no. 2. The prevalence of pruritus in group reviewed last year**

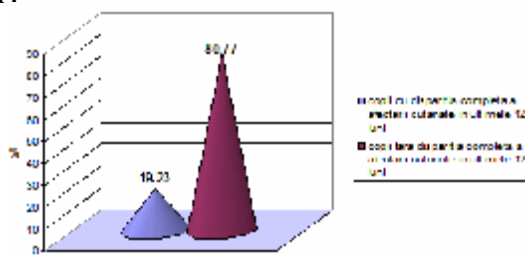


**Figure no. 3. The prevalence of children with typical localization of atopic dermatitis skin lesion**



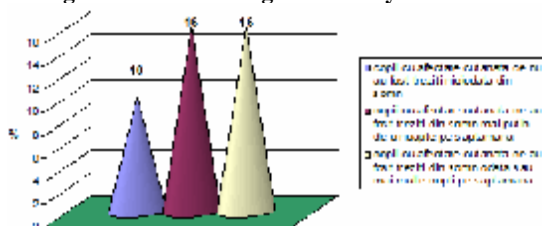
In 10 children (19.23%), the skin damage completely disappeared in the last 12 months (fig.4).

**Figure no. 4. Distribution of children showed complete disappearance of skin lesions**



10 children with skin damage present in the previous 12 months were never awakened from sleep because of this, 16 were awakened in less than one night a week and other 16 children in one or more nights per week (fig. 5).

**Figure no. 5. Distribution of children had nocturnal awakenings because of itching in the last year**



Among the analyzed children, 48 (5.90%) were

diagnosed with atopic dermatitis and of those 92.30% have already been diagnosed before the study.

### DISCUSSIONS

There is considerable concern referring to the increasing prevalence of allergic diseases in Western countries and also the developing ones. In the International Study of Asthma and Allergies in Children, launched in Auckland, New Zealand, the prevalence of atopic dermatitis was analyzed. In our country the prevalence of atopic dermatitis, was not studied.

The prevalence varies between 10 - 20% in children, depending on studies and countries. It is estimated that 10% of adults are affected (9). In England, in a population of 1077 children, in a suburb of Birmingham, with different origins and social backgrounds, Kay found an incidence of 20% in boys and of 19% in girls from age 11 (10). In 1995, Neane found a prevalence of 14% in 332 preschoolers between 1-4 years (11).

Advanced maternal age and duration over 41 weeks of pregnancy are risk factors for atopy (12, 13). The duration of pregnancy can alter fetal growth and maturation, especially its thymus, where T cells are generated, thus affecting the Th1/Th2 balance.

Prevalence varies widely, depending on regional differences in the world and lifestyle. The ISAAC study studied the prevalence of atopic dermatitis in 56 countries (14, 15). Prevalence of atopic dermatitis in children exceeded 15% at 13-14 years and 6-7 years in Australia, Japan, Northern and Western Europe. Lowest rate of prevalence (under 5%) were found in Italy, Central Asia, China and Eastern Europe. Several studies have shown a higher prevalence of various manifestations of atopy in western rich countries compared to developing countries. Similar results were found comparing the prevalence in countries of Western and Eastern Europe. ISAAC study showed a higher prevalence of atopy in Finland and Sweden (11.2 - 19.7%) and a lower one in Poland, Estonia and Lithuania (6.8-8.5%), or in Albania, Romania, Russia, Georgia and Uzbekistan (2.6 - 5.9%) (16).

Atopic dermatitis is present worldwide, but there is a greater frequency in temperate countries (17).

Its prevalence is higher in industrialized countries. It is considered that the atopic dermatitis lesions are present at 3 - 5% of the population, although some areas reach 9.4% (Florida) or 12% (Denmark). In the Northern countries it seems to be more frequent: in Sweden it is 11 - 21%, and atopic dermatitis is 8% of all skin diseases, compared with 3.3% in other regions.

It was observed an increase in the prevalence of atopic dermatitis in immigrants compared to those from their origin countries, suggesting the importance of socio-economic and environmental factors. In 1995, William found a higher prevalence of atopic dermatitis in Caribbean children born in London, comparative with those living in the Caribbean (16.3% versus 8.7%) (18). Asian children born in Australia have a higher risk than those who immigrated to this country from Asia.

Atopic dermatitis is more common in those who live in urban areas versus those from rural areas, especially in the first two years of life, independent of other factors: heredity, exposure to smoking, presence of pets and family size (19). In Finland, the prevalence is higher in the South, which is industrialized than in the Eastern part, which is agricultural. In Great Britain, the incidence is lower in Scotland than in the South and East (20).

Atopic dermatitis is more frequently in populations with higher socio-economical status. This was demonstrated in England (13.1%) and Switzerland (9%) comparative with classes of low social status (8.4% and 5.9% respectively).

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The prevalence is lower in those who have more siblings than in families with few members (21), suggesting the protective potential of infections in the first months of life.

Increasing prevalence of atopic dermatitis worldwide is not fully explained.

Determinism is certainly complex and multifactorial, genetic and environmental factors being involved. Dermatitis is more common in Western countries than in the Eastern or developing. It is also more common in industrialized than in rural areas and in those with high socio-economical level.

Urbanization is associated with exposure to pollutants, with lifestyle changes (a change in habitat, heating of housing and diet, which is diversified early in life). Many factors are associated with Western lifestyle: the availability of medical services, decreased family size, washing and improving personal hygiene, decreased fecal-oral contamination rate, immunization programs and the use of antibiotics. These factors lead to lower children's exposure to infection. These factors may explain why in the Western countries the prevalence of atopic dermatitis is higher.

### CONCLUSIONS

1. The small number of studies about the prevalence of atopic dermatitis in Romania and the total lack of a study on the situation in Sibiu led us to perform this study.
2. It surveyed all students in grades VIII in Sibiu with ISAAC questionnaire type.
3. Of the 813 students surveyed, 6.39% had symptoms of atopic dermatitis.
4. It were analyzed the distribution by sex, severity of events (frequency of itching, sleep disturbances of this question), knowledge of previously diagnosed atopic dermatitis.
5. We compared the prevalence with similar studies.

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