

Full Length Research Paper

Skin diseases among preschool children

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In developing countries skin diseases can affect more than 60% of the general population and usually are not well managed. Skin diseases are common in children. Epidemiologic studies of the general population, however, are still limited and missing for the region of Kosova. The aim of this study was to investigate disease prevalence in children under 6 years old of out- and in-patients at the department of Dermatological clinic - a tertiary health care center, a cross-sectional study was carried out during a period of one year. A total of 1,998 children 0 - 6 years old were examined. In the out-patients scabies presented in 18% of overall dermatoses, atopic dermatitis 7.9%, urticaria 7.9%, pyoderma 7.8%, tinea superficialis 5.9%, staphylococcal 5.5%, dermatitis amoniacalis 4.7%, eczema infantum 4%, impetigo contagiosa 3.5% and exanthema toxo-allergica 2.7%. While in the in-patients, acute urticaria presented in 26.1% of the overall dermatoses, scabies 20.7% and atopic dermatitis 10.8%, epidemiologic data are necessary for the monitoring of skin changes in school children and provides the basis of training programs for medical professionals in primary health care with the aim to reduce long-term morbidity and socioeconomic impact.

Key words: Skin disease, prevalence, children.

INTRODUCTION

In developing countries skin diseases can affect more than 60% of the general population and usually are not well managed (Hay et al., 1994; Ogunbiyi et al., 2004). Skin of infants, children, adults and the elderly, with its anatomic and physiologic characteristics, acts as a barrier for different environmental insults, and undergoes certain changes in each period during human life. Skin diseases are common in children (Nanda et al., 1999). Epidemiologic studies of the general population, however, are limited and missing for the region of Kosova. Some skin diseases in children, although not life-threatening, may be particularly distressing and chronic skin disease may have a severe psychological impact (Chen et al., 2008). Kosova is a state which is spread on 10908 km² land, including >2 million inhabitants living in 30 municipalities. It is characterized by a progressive type of population, with a slightly male gender domination (51.6%) and a relatively young, under 25 years old (57.85%), population. This population may be ideal for an epidemiologic prevalence study in younger people. From

the beginning of human life skin changes occur and as a child grows the skin is exposed to several irritating and infectious agents (Fung and Lo, 2000). Genetic related disorders of the skin play an important role in manifesting different skin disorders. Children represent an individual population group and the history data often are gathered by parents or care providers. Successful treatment is achieved due to good relationships and cooperation between parents, children and dermatologists (Ricci et al., 2009). Pediatric dermatology is a relatively new field so there are only a few prospective studies in the literature (Massa et al., 2000) mainly in developed countries (Shibeshi, 2000; Wenk and Itin, 2003; Ogunbiyi et al., 2005; Wu et al., 2000; Popescu et al., 1999). The aim of this study was to investigate disease prevalence in children below 6 years old of out- and in-patients at the department of Dermatological clinic - a tertiary health care center.

MATERIALS AND METHODS

Patients

This was a cross-sectional study carried out during a period of 1 year, June 2003 – 2004 including in- and out-patients at the

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Table 1. Structure of out- and in-patients according to the group of dermatoses and hospitalization rate.

Dermatoses Type	Out-patients		In-patients		Hospitalization Rate
	N	%	N	%	(%)
Examined	1525	100.0	111	100.0	7.3
Seborrhoidermtoses $p > 0.05$	45	3.0	5	4.5	11.1
Infective dermatoses $p > 0.05$	874	57.3	50	45.0	5.7
Allergic dermatoses $p < 0.01$	488	32.0	54	48.6	11.1
other	163	10.7	2	1.8	1.2

P < 0.01

department of Dermatology clinic, University clinical center of Kosova, Prishtina. All patients in the study population were examined by a dermatologist. A total of 1,998 children 0 - 6 years old (with male gender domination) were examined.

Assessment

An assessment of the whole body including head was conducted and confirmed by at least 2 dermatologists. Dermatoses were divided into 4 main groups: infectious, seborrhoid, allergic and other dermatoses. Apart from a clinical assessment based on recognized criteria, diagnoses were also by laboratory examination (microscopic examination of fungal slides of the scales scraped from a lesion) and microbial culture isolation. The collected data were registered in a relevant database. Children in the out-patient department who required further management were hospitalized.

Statistical analysis

The statistical analysis of the data was by chi square test, $p < 0.01$ was considered statistically significant.

RESULTS

During 2003 - 2004, the total number of patients referred at the clinic was 13,749; 93.59% were out-patients and of these 14.66% were under 6 years old. There were 881 in-patients, 12.6% of whom were children <6 years old. The mean age of children that were in-patients was 3.0 ± 1.9 and for out-patients was 2.5 ± 1.8 .

Structure of the out- and in-patients according to different groups of dermatoses and the hospitalization rate

Seborrhoid dermatoses were more evident for in-patients with a hospitalization rate of 11.1%; allergic dermatoses were also highly presented in in-patients compared to out-patients (48.6% vs. 32.0%, $p < 0.01$) with the same hospitalization rate (11.1%) (Table 1 and Figure 1). This could be due to different clinical features and outcomes of allergic diseases. Infectious dermatoses were higher in out-patients (57.3%) compared to in-patients (45%) with a hospitalization rate of 5.7%.

Common dermatoses of out-patients

The presence of scabies 18%, atopic dermatitis 7.9%, urticaria 7.9%, pyoderma 7.8%, tinea superficialis 5.9%, staphylococcal 5.5%, dermatitis amoniocalis 4.7%, eczema infantum 4%, impetigo contagiosa 3.5% and exanthema toxo-allergica 2.7% were the most common dermatoses of out-patients (Table 2 and Figure 2).

DISCUSSION

In a 2 year prospective study (Nnoruka, 2004), with a total of 1,019 patients aged 4 weeks, 57 years in more than half (51.3%) atopic dermatitis was presented before the age of 10. In infants, the earliest age of this disease appearance was 6 weeks (12.7%). According to Shafer et al. (2000), the prevalence of this disease was 10.4% in preschool (5 - 6 years old) children. Another cross-sectional study (Foley et al., 2001) showed that atopic dermatitis was present in 30.8% of cases, with a decrease in prevalence after the third year of life. In an analysis of 1,760 children of age 1 - 5 years, Emerson et al. (1998) found that the prevalence of atopic dermatitis was 16.5%. According to our study, the mean age in in-patients with allergic dermatoses was 3.1 ± 2 , while more than half of the out-patients diagnosed with allergic dermatoses were under 2 years old.

In a survey based study including preschool children 3 - 6 years old, consisting of 2,311 (52.8%) males and 2,062 (47.2%) females, allergic diseases were detected in 34.6% of cases (Wang et al., 1998). In this study the prevalence of atopic dermatitis was 6.6% and urticaria 6.8%, in males and females, with no significant difference according to gender (Wang et al., 1998). From another study of preschool children, 12.9% suffered atopic dermatitis (Schafer et al., 1996). In our study, in the group of allergic dermatoses of the out-patient population, atopic dermatitis and acute urticaria were around 25% each. In the overall population atopic dermatitis was present at 7.9% for out-patients and 10.8% for in-patients.

Seborrhoid dermatitis and Pityriasis capitis are common in early childhood. Foley et al. (2003) have determined the prevalence of these diseases among 1,116 preschool children of the age till 6 years and found that the

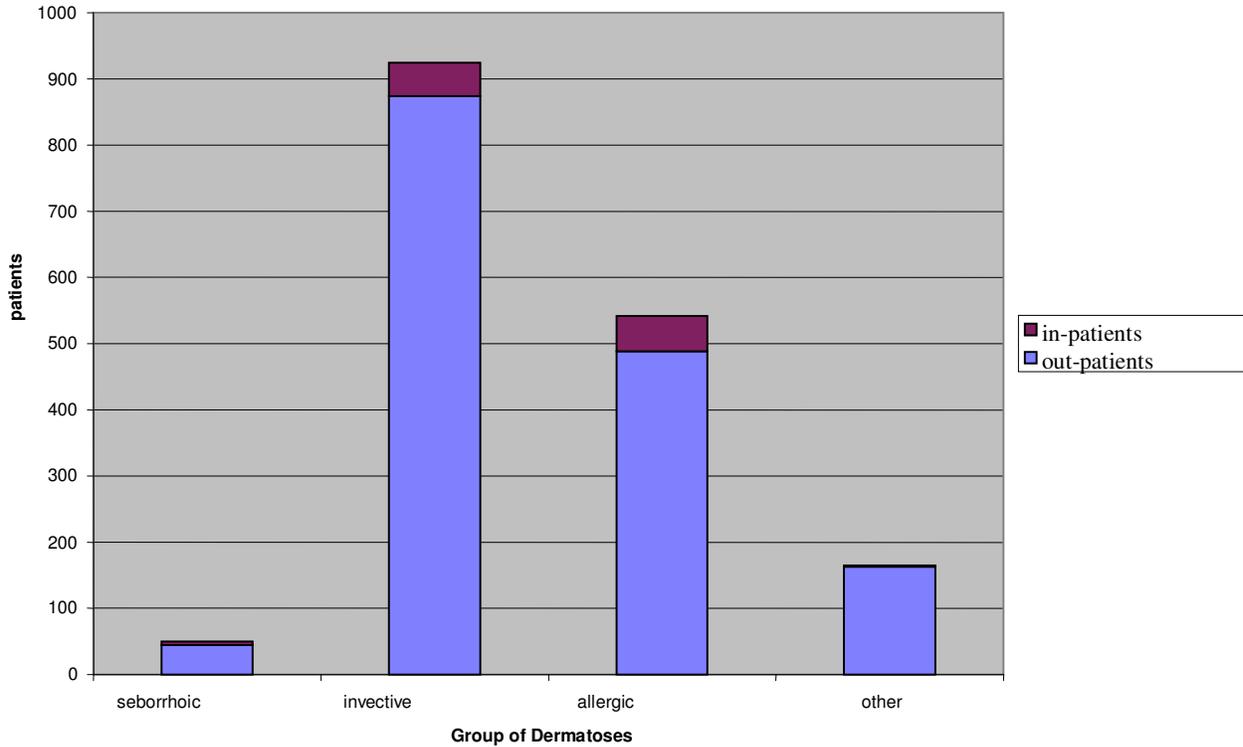


Figure 1. Structure of the out- and in-patients according to the group of dermatoses.

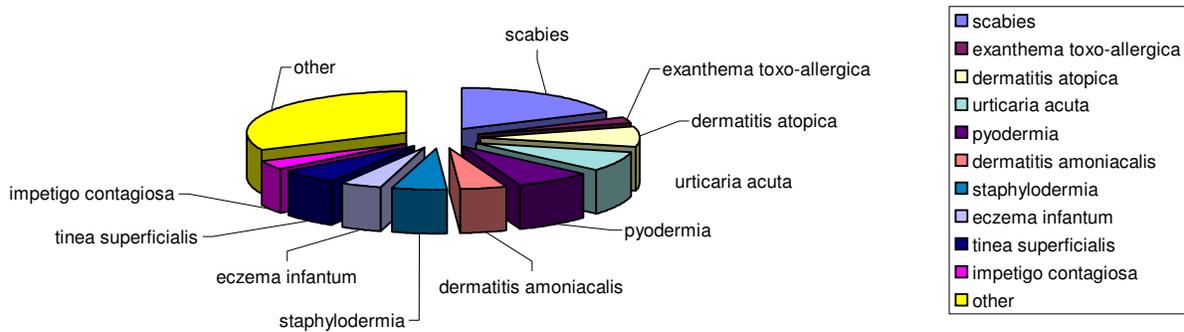


Figure 2. Common skin diseases in out-patients.

prevalence of seborrhoic dermatitis was 10% and was more common in males and during the first 3 months of life. In our study, dermatitis seborrhoica was present in 4.5% of in-patients with no cases above 5 years old and 3% of out-patients. As for out-patients in the group of seborrhoic dermatoses, seborrhoic dermatitis was present at 44.44%. This disease together with Leiner disease was present in the age group below years.

In another study (Masawe and Nsanzumuhire, 1975) of 532 preschool children, scabies was found to be the most common skin disease (31%), primary pyodermia was present in 7% cases, while fungal infections occurred in 2.4% cases. Dermatoses in our study presented at 57.3%

in out-patients and 45% in in-patients. Within the dermatoses group, analysis of out-patients showed that scabies was diagnosed in 31.4%, pyodermia 13.6% and tinea superficialis in 10.3% cases. For in-patients, again scabies was mostly presented in the dermatoses group (47.9%), with 14.6% pyococcia, 12.5% staphyloidermia, 8.3% Kerion Celsi, 8.3% pyodermia, 4.2% herpes simplex, 2.1% herpes Zoster and 2.1% tinea capitis cases. Mahe et al. (1995) reported a mean prevalence of 34% skin diseases in children, with pyodermia 12.3%, tinea capitis 9.5%, pediculosis capitis 4.7%, scabies 4.3% and molluscum contagiosa 3.6%.

Kumar et al. (2004) published a retrospective epidemio-

Table 2. Common skin diseases in out-patients.

Skin Disease	N	%
Scabies	338	18.01
Dermatitis atopica	149	7.94
Urticaria acuta	148	7.88
Pyodermia	146	7.78
Tinea superficialis	111	5.91
Staphylo-dermia	103	5.49
Dermatitis amoniacalis	89	4.74
Eczema infantum	76	4.05
Impetigo contagiosa	65	3.46
Exanthema toxo-allergica	50	2.66
Other	602	32.07
Total	1877	100.00

logical study including 419 children under the age of 14, in which males of age 6 - 10 years and females 10 - 14 years were mostly affected by psoriasis. In our study, cases of psoriasis were sporadic, presented with a low number of cases and unable to be grouped as a specific entity.

In a study population of 10,000 patients up to 18 years old, patients under 1 year were mostly presented (Ruiz-Maldonado et al., 1977). According to this study, parasitic dermatoses and viral and bacterial skin disorders were most common. Papular urticaria was reported in 16.3%, atopic dermatitis 12.9%, scabies 10.4%, benign warts 8.4%, impetigo 6.8%, pityriasis alba 6.6% and other diseases around 2% of cases.

According to our study, in out-patients scabies presented in 18% of overall dermatoses, atopic dermatitis 7.9%, urticaria 7.9%, pyodermia 7.8%, tinea superficialis 5.9%, staphylo-dermia 5.5%, dermatitis amoniacalis 4.7%, eczema infantum 4%, impetigo contagiosa 3.5% and exanthema toxo-allergica 2.7%. While in in-patients, acute urticaria was presented in 26.1% of the overall dermatoses, scabies 20.7% and atopic dermatitis 10.8%. These data correspond with those already published (Ruiz-Maldonado et al., 1977).

Epidemiologic data are necessary for the monitoring of skin changes in school children and provides the basis of training programs for medical professionals in primary health care with the aim to reduce long-term morbidity and socioeconomic impact.

Competing interests

All authors declare that they have no competing interests.

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Allma Koçinaj participated in the design and coordination of the study, analysis and interpretation of data, drafting

the manuscript and revising it critically. Dardan Koçinaj helped to draft the manuscript and revised it critically. Merita Berisha performed the statistical analysis and revised the manuscript critically. All authors read and approved the final manuscript.

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