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Psoriasis in children: clinical features and treatment modalities in Erbil city

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Abstract

Background and objectives: Psoriasis is a common, chronic inflammatory disorder that affects the skin, nails, and joints. The purpose of this study was to identify clinical features and treatment modalities of psoriasis in children in Erbil city. **Methods:** A descriptive, case review study was conducted on children with psoriasis attending the Erbil Dermatology training center and Raparin pediatric hospital in Erbil city during the period between 1st of September 2018 and 30th of April 2019. Patients with psoriasis, with age ranged from birth to 18 years and of both sexes were allocated by convenient sampling method. **Results:** A total of 107 children with psoriasis were examined. The male to female ratio was 0.9:1. The majority of patients (39.3%) had an onset of psoriasis between the ages of 6 and 10 years and only 6 patients (5.4%) were less than 1 year. Plaque type psoriasis was the most frequent type at the time of presentation. The scalp was the most common initial site affected. Most of the patients (88.8%) had less than 5% of their skin affected by psoriasis. Only 33 (30.8%) patients had a positive family history. Pitting was the most common nail change. Topical steroids were the most frequently used; 91(85.1%) patients, while keratolytics like topical salicylic acid and urea by 49 (45.8%) of patients **Conclusions:** Our study demonstrates that children with psoriasis usually presented with mild disease, the plaque type psoriasis is predominating and topical steroids therapy is the mainstay treatment for localized disease

Key words: Children psoriasis, Clinical feature, Treatment.

Introduction

Psoriasis is a common chronic immune-mediated inflammatory disorder affecting the skin, nails and joints in both children and adults. The skin disorder is estimated to affect 2.0–3.5 % of the global population[1,2]. A recent publication by Parisi et al. reported even higher percentages, with ranges up to 8.5 % depending on the studied population[3]. Psoriasis begins in childhood in almost one-third of the cases[1,4,5], and the published incidence rates in children have more than doubled since 1970[6]. Psoriasis in children and adolescents can have a significant impact on quality of life by interfering with self-esteem, family and social relationships and school and work[7-9]. Children suffering from psoriasis also have a higher prevalence of comorbidities, including obesity, diabetes mellitus, hypertension, rheumatoid arthritis, Crohn's disease and psychiatric disorders, compared with children without psoriasis[1,10-12]. About 30 % of individuals with psoriasis (children and adults) have an affected first-degree family member[13]. Morris et al.[14] reported that 26 % of patients had a history of psoriatic diaper rash. In older children, up to 75 % manifests with chronic plaque psoriasis[15]. The scalp is the most frequently involved area and often the first site of presentation in children16. Guttate psoriasis is the second most common type of psoriasis in children[16,17]. Other less common subtypes of psoriasis are inverse psoriasis, pustular psoriasis, palmoplantar psoriasis, isolated facial psoriasis, linear psoriasis and erythrodermic psoriasis[13]. Nail changes have been reported in up to 40% of children with psoriasis and more often in boys than in girls[15]. Making the diagnosis of psoriasis is more difficult in children because of atypical characteristics. Lesions in children may be thinner, softer, less scaly, and sometimes less well defined than in adults[18]. Since most of the children have mild-to-moderate disease, topical treatment is the most widely used, saving phototherapy and systemic therapy for severe or refractory

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cases, or those with psoriatic arthritis[19] or reduced quality of life[20]. The purpose of this study was to identify clinical features and treatment modalities of psoriasis in children in Erbil city.

Patients and methods

A descriptive, case review study was conducted on children with psoriasis attending the Erbil Dermatology training center and Raparin pediatric hospital in Erbil city during the period between 1st of September 2018 and 30th of April 2019. Cases were included through consecutive recruitment from new referrals and follow-up visits. Patients with psoriasis, with age range from birth to18 years, and of both sexes were allocated by convenient sampling method. Patients with psoriasis associated with other comorbidities other than obesity were excluded from the study.

The diagnosis was based mainly on clinical signs and symptoms and was confirmed by histopathology when in doubt. Patients had the diagnosis of psoriasis made at least by one of the Dermatologist in the outpatient clinic in addition to the researcher. A questionnaire form was designed, and the data were collected from patients or their parents by direct interview including name, age, gender, weight, height, age of onset, family history, triggering factors, type of lesions, site of lesions, pruritus, nail involvement, joint involvement, extend of involvement and treatment modalities. Then a thorough clinical examination was performed for each patient regarding morphology and distribution of the lesions. Mucous membranes were also examined. Nail examination was done. Examination was done in the presence of good light source with magnification of the lesions by using lenses. Careful examination was done to confirm typical clinical characteristics of psoriasis such as the plaques are well marginated with distinct border and are raised above the surface and are covered with a silvery white, loosely adherent scales which on removal may reveal pinpoint bleeding (Auspitz sign). Potassium hydroxide preparation was carried out in suspicious cases with scalp and nail lesions to exclude tinea capitis and onychomycosis respectively.

Weight (kg) and height (m) were measured and body mass index (BMI) was classified according to the International Obesity Taskforce criteria[21].

The extent of involvement was defined according to the classification suggested by Molin22 as: mild (<5% involvement of the whole body surface area); moderate (5–30% involvement of the whole body surface area); and severe (>30% involvement of the whole body surface area) and determined as 1% correlated to the palm of the patient.

An informed consent was obtained from the parents of patients after explanation of aim of the study and details of examination. The data were collected and analysed by using the Statistical Package for Social Science (SPSS, Version 25.0). Continuous variables were expressed as means ± Standard deviations (SD) and analyzed statistically using Student's t-test, while categorical variables were expressed as frequencies and analyzed using Chi-square test and the level of statistical significance was set at p-value ≤ 0.05. Microsoft Office Excel was used for plotting graphs and tables. The ethical approval was obtained from Kurdistan Higher Council of Medical Specialties.

Results

A total of 107 children with psoriasis were examined during the study period, representing 0.49% of the dermatology outpatients. There were 52 (48.6%) male and 55 (51.4%) female, making a male to female ratio of 0.9: 1. The age of children with psoriasis ranged from 2 months to 18 years, mean age ± SD was 9.07 ± 4.29, the mean age ±SD for male patients was 9.41 ± 4.35, while the mean age for females was 8.75 ± 4.24. The age of onset ranged from 1 month to 17.5 years. The mean age of onset was 6.72 ± 4.06 years. the mean age of onset was 7.14 ± 4.33 years in boys and 6.33 ± 3.78 years in girls. The majority of patients (39.3%) had an onset of psoriasis between the ages of 6 and 10 years. Infantile (< 1 year of age) psoriasis was seen in 6 patients (5.4%). The overall age of onset/gender distribution is shown in Figure (1).

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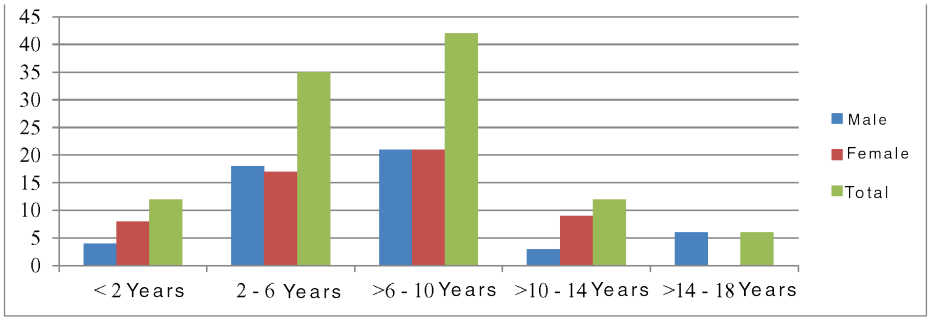

Figure (1): Age at onset and sex distribution of children with psoriasis

Plaque type psoriasis was the most frequent type of psoriasis at the time of presentation [39 (36.4%) patients], followed by exclusive scalp involvement with plaque type lesions in 27 (25.2%) of patients. Fourteen (13.1%) children presented with guttate psoriasis. Exclusive palmoplanter psoriasis was seen in 12 (11.2%) patients with plaque type psoriatic lesions. Flexural psoriasis affecting napkin area or one or more of the body folds was reported in 9 (8.4%) of our patients. Pure nail involvement was seen in 2 (1.9%) children. Two (1.9%) children had pustular psoriasis, one (0.9%) child had erythroderma and one (0.9%) child had sebo-psoriasis. None of the patients had joint involvement. Mucosal involvement (geographic tongue) was observed in 5 (4.7%) of patients.

The scalp was the most common initial site affected [33 (30.8%) cases], followed by the lower extremities [22 (20.6%)] Table (1).

Table (1): Initial site of onset in children with psoriasis

Site	No.	%
Scalp	33	30.8
Lower extremities	22	20.6
Trunk	21	19.6
Soles	10	9.3
Upper extremities	6	5.6
Palms	6	5.6
Flexures	5	4.7
face	4	3.7
Total	107	100%

Most of the patients [95 (88.8%)] had less than 5% of their skin affected by psoriasis. Eight (7.5%) patients had 5-30% skin involvement, while only 4 (3.7%) patients presented with severe disease affecting >30% of their skin. Age of onset had no influence on the severity of the disease ($p = 0.760$), whereas a positive correlation was found with sex and severity of the disease, with male patients being more severely affected ($p = 0.007$).

A total of 33 (30.8%) patients had a first-degree family history including parents and siblings, while 74 (69.2%) have no similar disease among family. Family history did not influence the age at presentation ($p = 0.302$).

The nails were involved in 36 (33.6%) patients. Pitting was the most common nail change [20 (55.6%)], followed by onycholysis Table (2).

Table (2): Nail involvement in childhood psoriasis

Type of nail change	No.	%
Pitting	20	55.6
Onycholysis	8	22.1
Longitudinal ridging	4	11.1
Leukonychia	2	5.6
Subungual hyperkeratosis	2	5.6
Total	36	100

Koebnerization was observed in 32 (29.2%) patients. Pruritus was the most frequent symptom, reported by 47 (43.9%) children, a burning sensation and irritation in the lesions was reported by 9 (8.4%) patients. Pruritus was mild in 30 (28%), moderate in 7 (6.5%) and severe in 10 (9.3%) patients.

Forty-nine patients (45.8%) related their disease to one or more precipitating or aggravating factors; that is, winter season in 19 (17.8%), physical trauma in 14 (13.1%), infection (sore throat, tooth infection) in 7 (6.5%), emotional factors in 5 (4.7%), medication (drugs taken for fever) in 2 (1.9%) and summer in 2 (1.9%).

Twenty-six (23.4%) patients were over-weight and 3 (2.8%) patients were obese. Patients with mild to moderate psoriasis were associated with being overweight while patients with moderate to severe psoriasis were associated with obesity.

Topical steroids were used by 91 (85.1%) patients, kera-

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tolytics like topical salicylic acid and urea by 49 (45.8%) patients, coal tar by 42 (39.3%) patients, topical calcineurin inhibitor by 5 (4.7%) patients, calcipotriol by 2 (1.9%) patients and tazarotene by 1 (0.9%) patient. Methotrexate was used by 4 (3.7%) and acitretin was used by 3 (2.8%) adolescent patients with moderate to severe disease. The age of these 7 patients was between 16 and 18 years. Narrow band UVB was used by 1 (0.9%) patient. Cyclosporine and biological agents were not used by any of our patients.

Discussion

The female preponderance observed in our study is in agreement with studies done by Tollefson et al.[23], Matusiewicz et al.[24], Seyhan et al.[25] and Alsuwaidan[26], whereas the male preponderance was observed in other studies[27-29]. Another study showed that males and females were equally affected[30].

The mean age of onset of the disease in our study was 6.72 years which is similar to the result of Seyhan et al.[25], while older age of onset was reported by Kumar et al.[29] (9.1 years) and earlier age of onset recorded in other studies[27,31] which was 5 years and less than 5 years respectively. This indicates that the onset of psoriasis among children varies greatly according to geographical distribution being more early or late at onset accordingly.

A positive family history was obtained in 30.8% of our patients. Heritability of childhood psoriasis differs largely between studies ranging from 4.5% to 71%[25-29,31].

Our patients presented mainly with plaque type psoriasis (36.4%) followed by scalp psoriasis (25.2%) whereas only 13.1% of them presented with the guttate form. Previous studies have demonstrated similar results with plaque type psoriasis observed as the most common variety, followed by scalp psoriasis[23,25-29,31]. In contrast guttate psoriasis was the most common type of psoriasis observed by Nyfors and Lemholt[32]. Probably, genetic and environmental factors determine the predominance of clinical types. Moreover, because of the transient nature of the guttate form, triggered by streptococcal infections, many children may not seek medical attention. None of the patients had joint involvement. Psoriatic arthritis is relatively uncommon in children, it may occur with either plaque or guttate psoriasis and may precede skin involvement[33].

In our study, the scalp was the most common initial site affected (30.8%) which is consistent with the previous studies[27,30,31], however these results were somewhat different from the results of other studies[23,25], which reported that the extremities were more common site at onset.

In our study, most of the children (88.8%) had a mild form of the disease with <5% of their skin affected. Eight (7.5%) patients had 5-30% skin involvement, while only 4 (3.7%) patients presented with severe disease affecting >30% of their skin. According to the literature, childhood psoriasis has been found to run a benign course with minimal skin involvement[29,31].

Nail involvement, mainly with pitting and onycholysis, was noted in 36 (33.6%) patients. There is a large variation in the literature regarding nail psoriasis, with reported rates ranging from 5% to 39.3%[17,25,28-32].

Winter season (17.8%) and physicsl trauma (13.1%) were the most common aggravating factors. These results were comparable with the results of the studies done by Nanda et al.[30] and Al-Fouzan et al.[31] which showed the influence of cold weather in (30%) and (22%) respectively.

In our study, the mean BMI was 23 kg m-2. Twenty-six (23.4%) patients were overweight (BMI: 25-30 kg m-2) and 3 (2.8%) patients were obese (BMI >30 kg m-2). These results were lesser than the results of a study done by Paller et al.[34] which reported overweight in (37.8%) and obesity in (20.2%) of patients with psoriasis, however the overweight in our group was higher than that of a study done by Mahe et al.[35] which reported overweight in (8.4%).

With respect to treatment, topical therapy was the first choice in our patients. The most frequently used topical therapy was topical corticosteroids (85.1%). This result was comparable with the results of studies done by Matusiewicz et al.[24] (72.2%) and Seyhan et al.[35] (92%).

Conclusions

Our study demonstrates that children with psoriasis usually presented with mild disease and the plaque type psoriasis is predominating, in most of the cases a family history of psoriasis is lacking and female patients are primarily affected. Topical therapy is the mainstay treatment for localized disease. Systemic therapy should be reserved for severe and

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uncontrolled cases. Further research is needed to generate more epidemiologic data for more in-depth comparisons and to help inform the management of psoriasis in children.

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