



Pediatric Psoriasis: Clinical Aspects and Comorbidities: A Study of 50 Patients in Morocco

I. Boubnane ^{a*}, Z. Mehsas ^a, S. Sektaoui ^a, K. Senouci ^a
and N. Ismaili ^a

^a Department of Dermatology and Venereology, Ibn Sina University Hospital, Faculty of Medicine and Pharmacy of Rabat, Mohamed V University, Rabat, Morocco.

Authors' contributions

This work was carried out in collaboration among all authors. Authors IB and ZM designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors SS, KS and NI managed the analyses of the study. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJPR/2023/v12i4247

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/99663>

Original Research Article

Received: 02/03/2023

Accepted: 04/05/2023

Published: 17/05/2023

ABSTRACT

Aims: The objective of our study was to describe the epidemiological and clinical characteristics of pediatric psoriasis, as well as metabolic comorbidities and cardiovascular diseases.

Study Design: Retrospective descriptive study.

Place and Duration of Study: Dermatology department of the CHU of Rabat Morocco over a two- and half-year period.

Methodology: We conducted a retrospective descriptive study collecting the cases of psoriasis in children followed in the pediatric dermatology consultation of Ibn Sina University Hospital of Rabat Morocco over a two- and half-year period.

Results: We collected 50 patients. A female predominance was noted with a sex ratio of 0.58. Concerning the antecedents; Parental consanguinity was identified in 8 % of cases, family history of

*Corresponding author: Email: ibtissam.boubnane@gmail.com;

psoriasis in only 6% and the atopy in 16%. The triggering factors were an infection in 12% of cases and psychological trauma in 6 % of cases. Concerning the metabolic comorbidity, one case of diabetes (2%), one case of obesity (2%) and three cases of overweight (6%) were noted. however, no cases of dyslipidaemia were reported. Psoriasis vulgaris was the most frequent clinical presentation (48 %), followed by guttate psoriasis (34%), inverted psoriasis (10%), napkin psoriasis (4 %) and blaskoline psoriasis (2 %). Palmoplantar involvement was observed in 10 % of cases, nail involvement in 22% and scalp involvement in 40 %. Oral mucosal involvement was noted in only one patient.

Keywords: Psoriasis; comorbidities; cardiovascular diseases.

1. INTRODUCTION

Psoriasis is a multifactorial systemic inflammatory disease that primarily affects the skin, nails and joints. It affects 1-3% of the general population. An onset in childhood is reported in one-third of patients [1]. All forms of psoriasis are seen in the pediatric population. However, the frequency of the different forms depends on the age of the child [2]. Recently an association with several comorbidities has been reported in multiple publications [3].

The objective of our study was to describe the epidemiological and clinical characteristics of pediatric psoriasis, as well as metabolic comorbidities and cardiovascular diseases.

2. MATERIALS AND METHODS

Retrospective study covering a period of 2 and a half years (between June 2019 and December 2021) involving infants (< 2 years old), children (2 -13 years old) and adolescents (13 -17 years old), followed up for psoriasis in the pediatric dermatology consultation of Ibn Sina University Hospital of Rabat (Morocco). Epidemiological,

clinical and paraclinical data were collected from the consultation files.

3. RESULTS

We collected 50 patients; 4 infants (8%), 32 children (64%) and 14 adolescents (28 %). The average age of the patients was 8 years with extremes ranging from 6 months to 17 years. The predominant age range was between 2 and 13 years (64%). We noted a female predominance with a sex ratio of 0.78 (M/F: 22/28). Parental consanguinity was identified in 8 % of cases and a family history of psoriasis was present in only 6%. 16% of the patients had atopy, namely: allergic conjunctivitis in 8%, atopic dermatitis in 6% and asthma in 2%.

The triggering factors were an infection in 12% of cases [angina (8%), bronchitis (2%) and streptococcal anitis (2%)] and psychological trauma in 6 % of cases [parental divorce (4%) and the death of a father (2%)].

Concerning the metabolic comorbidity, one case of diabetes (2%), one case of obesity (2%) and three cases of overweight (6%) were noted. however, no cases of dyslipidaemia were reported.

Table 1. Comparative table of results with pediatric series

	Our study	Tollefson et al (19)	Kumar et al (20)
Psoriasis Vulgaris (%)	48	73,7	60,6
Guttate psoriasis(%)	32	13,7	9,7
Napkin psoriais(%)	4	-	0,4
Inversed psoriasis (%)	10	6	0,4
Linear psoriasis(%)	2	-	-
Scalp involvement (%)	40	46,8	5,9
Nail involvement (%)	22	16,5	2,3
Palmoplantar involvement (%)	10	5	5,7
Mucous (%)	2	0	0



Fig. 1. Scalp psoriasis



Fig. 2. Psoriasis vulgaris

Psoriasis vulgaris was the most frequent clinical presentation (48 %), followed by guttate psoriasis (34%), inverted psoriasis (10%), napkin psoriasis (4 %) and blasoline psoriasis (2 %). Palmoplantar involvement was observed in 10 % of cases, nail involvement

in 22% and scalp involvement in 40 % distributed as follows: Erythematous plaque in 24%, squamous state in 12% and carapace in 4%. Oral mucosal involvement was noted in only one patient in the form of a geographic tongue.



Fig. 3(A,B). Palmoplantar psoriasis

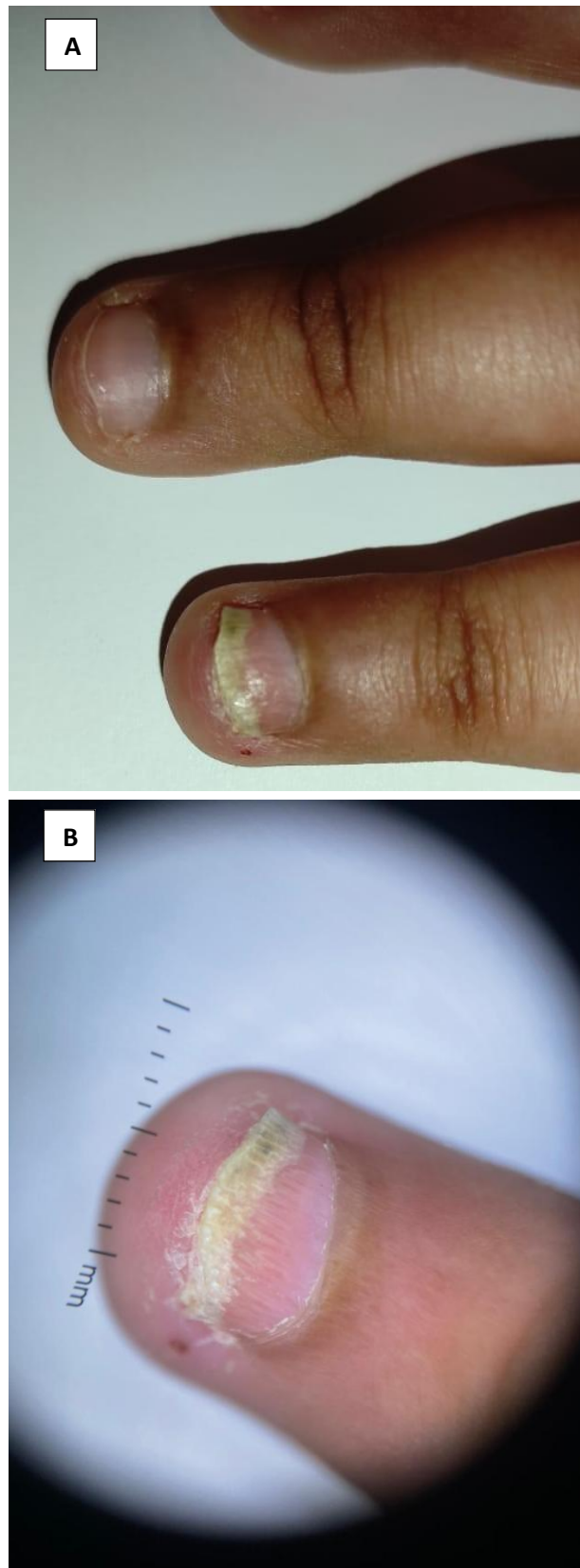


Fig. 4. Nail psoriasis: A: Clinical, B: Dermoscopy

4. DISCUSSION

Psoriasis is a multifactorial disease involving genetic, immunological and environmental factors. In children, triggers are dominated by stress, streptococcal infections and trauma [2,3]. In our study, family history of psoriasis was present in only 6 % of cases. A triggering factor was dominated by infection (12%). These data are in line with the literature.

Psoriasis is also a systemic disease, associated with numerous comorbidities, including metabolic ones. The prevalence of comorbidities in children with psoriasis is almost twice as high as in healthy children [4]. Overweight and obesity are identified as the main comorbidities in children with psoriasis. Their presence is correlated with disease severity and risk of hospitalization [5]. A family history of overweight or obesity is considered the main risk factor for obesity in children with psoriasis [6]. The pathogenic link between these two disorders is not completely understood, but recent evidence suggests that leptin may play a major role in the relationship between obesity and psoriasis [7]. The results of studies regarding the relationship between pediatric psoriasis and diabetes, dyslipidemia, and cardiovascular disease are controversial and require further confirmation. Although the current literature suggests a significant association between pediatric psoriasis and glucose dysmetabolism (diabetes and insulin resistance) [8,9], the data remain very limited, especially concerning pathogenesis. Regarding dyslipidemia, some authors have shown that children with psoriasis have higher blood lipids than healthy children and a more atherogenic risk profile [10-11], but this has not been confirmed by other studies. In adults, several studies confirm the association between psoriasis and hypertension, but the current data in children are controversial [12,13]. In our patients, we noted 6% of overweight, 2% of obesity and 2% of type 1 diabetes. However, no cases of dyslipidemia or hypertension were reported. This is in accordance with the review of the literature performed by A. Badaoui et al. [14], which suggests that only obesity and overweight should be systematically looked for in children with psoriasis.

Clinically, psoriasis in children is similar to psoriasis in adults. However, there are some peculiarities, including a predilection for involvement of the face and anogenital regions, a high prevalence of neonatal diaper rash, and

guttate psoriasis [15]. Psoriasis vulgaris is manifested in the pediatric population by smaller plaques and thinner, softer scaling, preferentially affecting bastion areas, and its frequency varies by age group; it is more common in adolescents than in children [15,16]. Guttate psoriasis is the most common form in children, affecting mainly the trunk, abdomen and back. It is often preceded by a streptococcal infection, which should be investigated systematically. Its evolution is generally acute, with spontaneous remissions in a few months in 50% of cases [15-17]. Napkin psoriasis is the most frequent form of psoriasis in infants, typically occurring as a well-demarcated, shiny, scaly erythema, predominantly on the convexities. A form involving the folds may also be observed. The main complications of this location are candidal or bacterial infection and fissures [15,16]. Inverted psoriasis is quite common in the pediatric population, affecting the flexural areas, namely the retroauricular, axillary, inguinal, and genital or perianal areas [15]. Palmoplantar, patchy or pustular forms are seen in children. The most usual form is dry pulpitis, which may be fissured. It has a significant impact on school. The acral and pustular form, which may be associated with destructive osteitis, known as Hallopeau's disease is rarer [18,19]. However, Pustular, erythrodermic, annular and linear psoriasis are unusual. In children, scalp psoriasis manifests in severe forms as pityriasis amiantacea characterised by thick, fixed, silvery scales and in mild forms as finely scaly erythematous plaques [20]. As for adult psoriasis, nail, tongue and joint involvement may be observed. One third of children have nail involvement. The most usual clinical features are thimble-like appearance, distal onycholysis, Beau lines, and salmon spots. Less than 10% of children have lingual involvement, principally the geographic tongue type. Finally, psoriatic arthritis affects less than 5% of children and more frequent in adolescents [15-17].

In our study, psoriasis vulgaris was the most prevalent type of psoriasis, predominating in the adolescent group with 57.1%, followed by guttate psoriasis which predominated in the children's group with 43.7%, and all cases of napkin psoriasis were observed in infants.

According to the topography: Scalp involvement was predominant (40%), followed by nail involvement in 22% and lastly palmoplantar involvement in 10% of cases. However, no cases of arthropathic psoriasis were reported

(Table 1 compares our results with the various pediatric series).

5. CONCLUSION

Psoriasis remains a benign disease in children, with a clinical presentation similar to adult psoriasis with some particularity. Obesity and overweight are identified as the principal comorbidities in psoriatic children.

CONSENT

The cases' parents or legal guardians provided informed consent.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Tollefson MM, Crowson CS, McEvoy MT, Maradit Kremers H. Incidence of psoriasis in children: A population-based study. *J. Am. Acad. Dermatol.* 2010;62:979–987.
2. Mahé E, et al. Childhood psoriasis. *Eur J Dermatol.* 2016;26(6):537-48.
3. Parisi R, Symmons DP, Griffiths CE, Ashcroft DM. Identification and Management of Psoriasis and Associated Comorbidity (IMPACT) project team. Global epidemiology of psoriasis: A systematic review of incidence and prevalence. *J. Investig. Dermatol.* 2013; 133:377–385. [CrossRef] [PubMed]
4. Marani A, Rizzetto G, Radi G, Molinelli E, Capodaglio I, Offidani A, Simonetti O. Metabolic comorbidities and cardiovascular disease in pediatric psoriasis: A Narrative Review. *Healthcare.* 2022;10:1190.
5. Paller AS, Mercy K, Kwasny MJ, et al. Association of pediatric psoriasis severity with excess and central adiposity: An international cross-sectional study. *JAMA Dermatol.* 2013;149:166-76.
6. Mahé E, Beauchet A, Bodemer C, et al. Psoriasis and obesity in French children: A case-control, multicentre study. *Br J Dermatol.* 2015;172:1593-600.
7. Hwang J, Yoo JA, Yoon H, Han T, Yoon J, An S, Cho JY, Lee J. The role of leptin in the association between obesity and psoriasis. *Biomol. Ther.* 2021;29:11–21. DOI: 10.4062/biomolther.2020.054.
8. Pietrzak A, Grywalska E, Walankiewicz M, Lotti T, Roliński J, Myśliński W, Chabros P, Piekarska-Myślińska D, Reich K. Psoriasis and metabolic syndrome in children: Current data. *Clin. Exp. Dermatol.* 2017; 42:131–136.
9. Phan K, Lee G, Fischer G. Pediatric psoriasis and association with cardiovascular and metabolic comorbidities: Systematic review and meta-analysis. *Pediatr. Dermatol.* 2020;37:661–669.
10. Koebnick C, Black MH, Smith N, et al. The association of psoriasis and elevated blood lipids in overweight and obese children. *J Pediatr.* 2011;159:577-83.
11. Tom WL, Playford MP, Admani S, et al. Characterization of lipoprotein composition and function in pediatric psoriasis reveals a more atherogenic profile. *J Invest Dermatol.* 2016;136:67-73.
12. Phan K, Lee G, Fischer G. Pediatric psoriasis and association with cardiovascular and metabolic comorbidities: Systematic review and meta-analysis. *Pediatr. Dermatol.* 2020;37:661–669.
13. Kelati A, Baybay H, Najdi A, Zinoune S, Mernissi FZ. Pediatric psoriasis: Should we be concerned with comorbidity? Cross-sectional study. *Pediatr. Int.* 2017;59:923–928.
14. Badaoui P, Tounian E. Mahe Psoriasis et comorbidités cardiovasculaires et métaboliques chez l'enfant: Revue systématique de la littérature. Available: <http://dx.doi.org/10.1016/j.annder.2017.09.324>
15. Mahé E, Gnosike P, Sigal ML. Le psoriasis de l'enfant. *Arch Pediatr.* 2014; 21:778-86.
16. Bonigen J, Phan A, Hadj-Rabia S, et al. Impact de l'âge et du sexe sur les aspects cliniques et épidémiologiques du psoriasis de l'enfant. Données d'une étude transversale, multicentrique française. *Ann Dermatol Venereol.* 2016;143:354-63.
17. Ko HC, Jwa SW, Song M, et al. Clinical course of guttate psoriasis: Long-term

- follow-up study. J Dermatol. 2010;37: 894-9.
18. Tollefson MM, Crowson CS, McEvoy MT, Kremers HM. Incidence of psoriasis in children: A population-based study. J Am Acad Dermatol. Author manuscript; available in PMC; 2013.
19. Kumar B, Jain R, Sandhu K, Kaur Handa S. Epidemiology of childhood psoriasis: A study of 419 patients from Northern India. Int J Dermatol. 2004;43: 654-8.
20. Mahé E, et al. Childhood psoriasis. Eur J Dermatol. 2016;26(6):537-48.

© 2023 Boubnane et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<https://www.sdiarticle5.com/review-history/99663>