

Scabies of the child: Epidemiological, clinical, therapeutic and evolutionary aspects in the service of Dermatology of the Regional Hospital of Thiès (Senegal): About 69 cases (2012-2017)

Haby Dione^{1,2}, Pauline Diousse^{1,3}, Agbogbenkou Téli Déla-dem Lawson^{1,4}, Mariama Bammo^{1,3}, Mame Diasse Ndiaye¹, Pape Souleymane Toure¹, Fatou Seck¹, Ndeye Ramatoulaye Diagne Gueye¹, Sylvie Audrey Diop¹, Bernard Marcel Diop¹, Mamadou Mourtalla Ka¹

¹Faculty of Health Sciences, University of Thiès, Thiès, Senegal, ²Department of Dermatology, Hospital Abdou Aziz Sy Dabakh, Tivaouane, Senegal, ³Department of Dermatology, Thiès Regional Hospital, Thiès, Senegal, ⁴Department of Infectious and Tropical diseases, Hospital Abdou Aziz Sy Dabakh, Tivaouane, Senegal

Corresponding author: Dr. Haby Dione, E-mail: habydione@hotmail.com

ABSTRACT

Background: Clinical manifestations of scabies in children differ from those of adults: difference accentuated by the presence of certain contributing factors which contributes to delayed diagnosis and management. The objective of our study was to study the epidemiological, clinical, therapeutic and evolutionary aspects of scabies in children. **Materials and Methods:** From January 1st, 2012 to December 31st, 2017, a descriptive retrospective study was conducted in the dermatology department of the Regional Hospital Center of Thiès. The study included records of children aged 0 to 15 years in outpatient care. The data was entered and analyzed using a computer with Epi info7 software version 3.5.4. **Results:** Of the 19129 patients seen in consultation, 2284 were children, of whom 69 had scabies, with a hospital prevalence of 0.36%. The average age was 4.64 years and the sex ratio were 1.46. Out-of-school children predominated with 47.8%. Mothers were out of school in 79.71%. Voluntary cosmetic depigmentation was practiced by 65.22% of mothers. The average consultation time was 21.86 days, pruritus was present in 56.5% of cases. Topography with interdigital spaces predominated in 81.15% of cases. All the children had been treated with benzyl benzoate. The cure rate was 92.7%. The complications were bacterial superinfection in 60.87% of cases, eczema in 4.34% and acute glomerulonephritis in 1.44% of cases. **Conclusion:** Scabies of the child is still relevant. Its prevalence and complications make it a real health problem and can be life-threatening in children. The main objective remains prevention.

Key words: Scabies; Child; Thiès; Senegal

INTRODUCTION

Human scabies is an Ectoparasitosis, contagious, common caused by the female of a mite of the species *Sarcoptes scabiei* variety *hominis*. It's a cosmopolitan disease. It has been recognized since 2013 by the World Health Organization (WHO) as a neglected

tropical disease. Its worldwide incidence is about 300 million new cases per year, with prevalence up to 10% of the general population and 60% of children in poor communities [1]. In industrialized countries, epidemic episodes mainly affect institutions (retirement homes, care institutions, communities, etc.) In developing countries, the prevalence and complications of scabies,

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especially in the pediatric population, make them a real public health problem [2].

In Senegal, few studies have been conducted on scabies [3,4]. In the region of Thiès, no study has been carried out, which justifies our work whose objectives were to determine the epidemiological, clinical, therapeutic and evolutionary aspects and to identify the factors that favor scabies in children and mother in the dermatology department of the regional hospital of Thiès.

MATERIALS AND METHODS

This was a descriptive and analytical retrospective study, conducted over a period of 05 years, from January 1, 2012 to December 31, 2017 in the dermatology department of the Thiès Regional Hospital. Included in the study were all records of children aged 0 to 15 years in the outpatient department of dermatology for scabies. Patients with confounding pathology isolated or associated with scabies such as atopic dermatitis, contact dermatitis, prurigo, infantile Acropustulosis have been excluded. Epidemiological, clinical, therapeutic and evolutionary data were collected using a standardized survey form. The analysis of the epidemiological data was carried out using the software Epi info version 3.5.4 of July 30, 2012 of the CDC-Atlanta (USA). The analytical data were expressed with a risk of error $\alpha < 5\%$.

Ethics Statement

This study was performed on records of patients.

RESULTS

Sixty-nine cases of children between the ages of 0 and 15 years with scabies were collected, with a hospital prevalence of 0.36% among 19129 consultants including 2284 children. Scabies among children were more common in the second half of the year, peaking at 14% in October. The median age was 4 years and the mean age was 4.6 years a standard deviation of 4.13 and the 2- to 15-year age group was the most represented with 37 cases. The sex ratio H/F was 1.46. Twenty-nine infants were under breastfeeding.

Thirty-three children were out of school and 12 children, or 17.4% of the children, attended Koranic school. Forty-three children came from a semi-urban

area, fourteen children came from a rural area and twelve children from an urban area. The practice of voluntary cosmetic depigmentation was more common among mothers of infants aged 1-24 months More than $\frac{3}{4}$ mothers were out of school (79.71%) and the practice of voluntary cosmetic depigmentation was more common in this group (Table 1). Most of the mothers were housewives, or 88.40%. In 63.77% (N = 44) of the cases, the number of people living in the same house was between 7 to 10 people and the number of people affected in the patient's entourage averaged 2.05. The average consultation time was 21.8 days \pm 18.9 days and extremes ranging from 3 to 120 days. The meantime to view was longer for children whose

Table 1: Distribution of the level of schooling of mothers according to the practice of VCD

Mother Education	DCV				Total	P value
	Yes		No			
	N	%	N	%		
No Education	35	63.6	20	36.4	55	0.759
Primary	4	80.0	1	20.0	5	
Secondary	6	66.7	3	33.3	9	

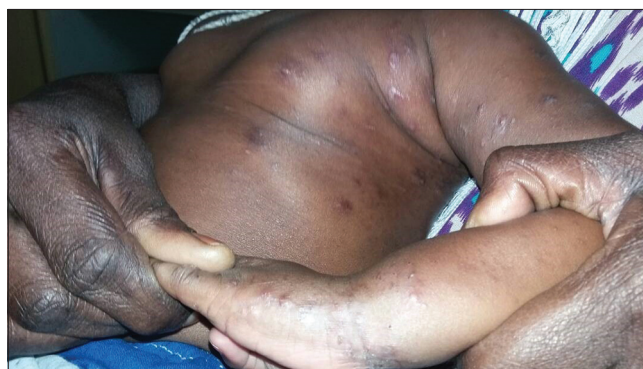


Figure 1: Papular lesions of the outer edge of the hand and wrist in an infant.

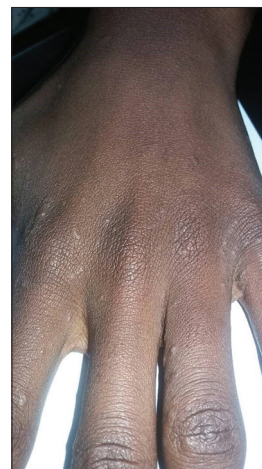


Figure 2: Furrows on the back of the hand next to the joints in a child.

mothers practiced VCD $18.8 \text{ days} \pm 9.7$ compared to those who did not practice 16.8 ± 6.2).

Pruritus was present in 56.5% (N = 39) of children. The most frequent lesions were papules found in 88.4% of cases (Fig. 1) followed by grooves that were present in 20.3% of patients (Fig. 2) and then by vesicles present in 10.14% of cases: In 42 children or 60.86% coexisted crusted lesions. The location of lesions in interdigital spaces was the most common with 81.15% of cases. Palmar plantar location was more common in infants with 43.47% of cases (N = 29). Therapeutically, benzyl benzoate was used in all children. The combination benzyl benzoate, antiseptic, antibiotic and antihistamine was the most prescribed at 81.15%. More than $\frac{3}{4}$ of the patients' family members, 79.71% (N = 55), received treatment with benzyl benzoate. A treatment of their environment by the use of a disinfectant (Malathion) has been recommended in all our patients. The mean duration of follow-up was 27.16 days \pm 12.15 (extremities 10 to 75 days). Almost all children, 92.7% (N = 64) had a favorable course of treatment and 7.3% of children (N = 5) had a recurrence. Forty-six patients, 66.66% (N = 46) had complications. It was essentially bacterial superinfection in 60.87% of cases of eczema in 4.34% of cases and acute glomerulonephritis in 1.44% of cases.

DISCUSSION

In our study, the hospital prevalence of scabies was 0.36%. It was below that found by Niang and al in Koranic schools in Dakar with 23.33% [3]. This high prevalence would likely be related to the fact that the study was conducted in a community where skin contact was tight and prolonged. This same tendency was objectified by Kouotou and al in Cameroon (17.8%) who had conducted his study in a boarding school [5]. In a dermatology department in Guinea, scabies ranks second in the study of infectious dermatoses in children [6]. Indeed, the prevalence varies according to the work. A frequency peak has been noted in winter. [7].

A study done in Dakar found a greater frequency during the harmattan period (hot and dry continental trade winds of West and Central Africa) [8]. The increase in promiscuity and the decrease in body care during this period could also explain this high frequency. However, we noted a greater frequency during periods of high play activity: in June with 12% of cases, July 12% of cases and October 14% of cases. In our study, the average

age was 4.6 years. A high infestation rate of scabies in preschool children has also been found in some studies, particularly in the Central African Republic and northern England [9,10]. The male predominance found in our series, as well as those of Kouotou et al [5] and Sherbiny et al [11] would probably be due to prolonged contact at the time of the games but also to the exchange of clothes.

In our series scabies was more common among children living in a large family. Our results are consistent with those of the El Sherbiny et al series in Egypt as well as that of Niang et al in Dakar [3-11]. The role of voluntary cosmetic depigmentation (CVD) in the occurrence of scabies has already been described by several authors. For example, in Mauritania and Senegal scabies has been described in women practicing DCV [12,13]. The increase in promiscuity and the decrease in body care during this period could also explain this high frequency. However, we noted a greater frequency during periods of high play activity: in June with 12% of cases, July 12% of cases and October 14% of cases.

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In our series, VCD was more practiced by mothers of infants, uneducated. Maternal education and occupation had an impact on the occurrence of scabies in children. A study in Turkey found that infestation was more common among children whose mothers were housewives than among educated and employed mothers [14]. In our study, the delay in diagnosis was related to the delay in consultation which was up to 120 days. The latter also depended on the level of education of the mother. The specific signs of scabies most commonly observed in our study were papules;

present in 89.18% of cases. In contrast, in Bangui, scabious nodules were more observed (64.1%) [9].

The scabious grooves difficult to demonstrate on phototype VI were present in 20.3% of cases in our study and in 76% of cases in a French study [15]. The classical topography of scab lesions in interdigital spaces was noted in 81.15% of our children. The particular location of lesions in the axillary and palmoplantar zones in infants was found in 44.92% of cases in our series and was correlated with the practice of voluntary cosmetic depigmentation in the mother with a statistically significant difference. This depigmentation used for a long time, would lead to local immunosuppression increasing the risk of infection, promoting contamination which would partly explain the large number of people with the environment.

Therapeutically, benzyl benzoate (Ascabiol®) is the standard treatment in France [16].

In our series, the BB was the most prescribed because of its cost, its availability, the absence of major contraindications with a favorable evolution in 96%. Our results are similar to those of Ly and al in Senegal, which showed that BB was significantly more effective than ivermectin, whereas it was prescribed as first-line therapy in other mostly European studies [11,17].

In our study, approximately $\frac{3}{4}$ cases of family members of patients had received anti scabious treatment. This incomplete management of the surroundings and the environment could partly explain the long follow-up period for children by probable recontamination.

On the other hand, our results showed that the practice of VCD in the mother would increase the duration of evolution of scabies. This duration may interfere with the occurrence of complications. On the evolutionary level, in our series the evolution was favorable in 92.7% of the cases. However, complications such as eczema, impetigo and post-streptococcal acute glomerulonephritis have been noted. Eczema can complicate scabies either from the beginning in case of a history of eczema or after treatment and may be due to intolerance to the products used. Impetigo is the most common complication.

Data from suggest that in highly endemic areas, at least 40% of impetigo lesions can be attributed to scabies [18-20].

Post-streptococcal acute glomerulonephritis is the most feared complication in developing countries. Although it is low in our series, a study done in Dakar by Dieng and al had collected in a pediatric ward a proportion of 56.6% acute glomerulonephritis on mange [21].

CONCLUSION

Scabies is a neglected, cosmopolitan tropical disease. It is still relevant. Its prevalence and its complications especially in the pediatric population, make it a real health problem. The management of scabies of infants and children raises unique challenges. The main contributing factors are precariousness, promiscuity, lack of hygiene. Others, such as the low level of education of mothers, delayed care, voluntary cosmetic depigmentation, have been reported in the literature, responsible for profuse forms in most cases.

Statement of Human and Animal Rights

All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008.

Statement of Informed Consent

Informed consent was obtained from all patients for being included in the study.

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