



Scabies in Conakry, Guinea: Epidemiological, Clinical and Therapeutic Profiles

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

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/91059>

Original Research Article

Received 07 July 2022
Accepted 10 September 2022
Published 17 September 2022

ABSTRACT

Introduction: Human scabies is a highly contagious skin parasitosis caused by *Sarcoptes scabiei* var *hominis* characterised by a pruritic skin rash. The objectives of this study were to determine the prevalence, to identify the factors that increase the disease and to describe the clinical characteristics and therapeutic modalities of scabies in the Dermatology-Venereology Department of the Donka University Hospital.

Materials and Methods: It was a descriptive cross-sectional study from February to July 2020. It targeted all patients admitted for pruritic dermatosis. All patients with a confirmed diagnosis of scabies based on clinical evidence, regardless of age, gender or origin were included in this study. Patients with a pruritic rash without objective signs of scabies were not included. Our data were collected using a pre-designed survey form. Data entry and statistical analysis of our data were performed using Epi-info software.

Results: We collected 310 (26.6%) cases of scabies out of 1164 patients seen in consultation. The patients were 156 (50.3%) women and 154 (49.7%) men. The average age was 24.02 ± 20.77 with extremes of 1 and 86 years. The most affected age group was 1-10 years (34.2%) followed by 21-30 years (22.2%). According to the level of education, those not in school (37.4%) and primary school (28.7%) were the most represented. According to socio-professional category 152 (49%)

patients were unemployed and 52 (16.8%) were civil servants. The association with scabies was significant for promiscuity (P value=0.000), multiplicity of sexual partners (P value=0.004) and the number of people in the house greater than 5 (P value=0.000). Vesicles (88.7%), scratch lesions (71.3%) and papules (24.8%) were the most frequent physical signs. Benzyl benzoate was prescribed in all (100%) cases. Other drugs used were sedative antihistamines (65.8%), antibiotics (18.4%) in cases of superinfection, antiseptics (12.2%) and corticosteroids in cases of eczematization (1.6%).

Conclusion: Scabies is very common in our context and affects all subjects with a predominance of children. Promiscuity, multiple sexual partners and the high number of people sharing the same room are risk factors for contagiousness.

Keywords: Scabies; epidemiology; clinical; therapeutic; Conakry.

1. INTRODUCTION

Human scabies is a contagious skin parasitosis caused by *Sarcoptes scabiei var hominis* characterised by a pruritic skin rash [1]. Worldwide, more than 200 million people are affected, with a relatively high prevalence in resource-poor tropical regions [2].

In developed countries, scabies epidemics are common, especially in nursing homes and old people's homes where they cause significant morbidity and distress. In the last decade, the World Health Organization (WHO) has recognised scabies as a neglected tropical disease, which should allow it to be included in the health policies of low-income countries [3].

It is transmitted by direct or indirect contact through soiled objects with an incubation period of 4-6 weeks in people who have never been infected before [4].

The diagnosis is essentially clinical [3]. The treatment is done in three simultaneous parts: the treatment of the infected subject, of symptomatic or non-symptomatic contacts and of the environment [5].

The prevalence of scabies varies from country to country, ranging from 5 to 12.8% [6-9]. In a study on the epidemiological and clinical profile of infectious dermatoses in children in Guinea in 2012, it was found that scabies represented 82.7% of parasitic dermatoses [10].

The aims of this study were to determine the prevalence, identify the factors favoring and describe the clinical characteristics and therapeutic modalities of scabies in the Dermatology-venereology department of the Donka University Hospital.

2. MATERIALS AND METHODS

It was a descriptive cross-sectional study from February to July 2020, in the Department of Dermatology-Venereology of the Donka Université Hospital of Conakry (Guinea). It concerned patients received for pruritic skin rash. The diagnosis of scabies was made on the basis of epidemiological (notion of marital or family pruritus) and clinical arguments (specific objective signs: scabial furrows, pearly vesicles, scabial chancre, scabial nodules; non-specific signs: streaky scratching lesions, excoriated lesions, superinfected lesions, lichenification; subjective signs: generalised pruritus with nocturnal recrudescence and family character).

We included in this study all patients diagnosed with scabies, regardless of age, sex or origin. Data were collected using a pre-established survey form and analysed using SPSS software version 21.1. For comparison of proportions, the Chi² test was used.

The variables studied were: sociodemographic (age, sex, residence, family size, number of sexual partners), clinical (pruritus, rash), and therapeutic (local treatment, general treatment, treatment of entourage).

The unavailability of complementary tests for parasite identification and the COVID19 pandemic, which reduced the rate of use of health facilities, were the main difficulties encountered during this study.

3. RESULTS

Out of 1164 consultations, 310 cases of scabies were diagnosed, representing a prevalence of 26.6%. These included 156 (50.3%) women and 154 (49.7%) men. The mean age was 24.02 ± 20.7 with extremes of 1 and 86 years. The most affected age group was 1-10 years (34.2%)

followed by 21-30 years (22.2%). According to the level of education, those without schooling (37.4%) and elementary school (28.7%) were the most represented. According to socio-professional category, 152 (49%) patients were not employed and 52 (16.8%) were civil servants. The Table 1 summarises the socio-demographic characteristics of the patients.

The association with scabies was significant for promiscuity (P value = 0.000), multiple sexual partners (P value = 0.004) and the number of people in the house greater than 5 (P value = 0.000). The Table 2 shows the bivariate analysis of potential risk factors.

Pruritus was present in all patients (100%). Vesicles (88.7%), scratching lesions (71.3%) and papules (24.8%) were the most frequent physical signs. Regarding to the location of the lesions, the hands (66.3%), buttocks (64.8%) and thighs (34.5%) were the most affected. Regarding to the different clinical forms, common scabies was the most represented form (72.6%) followed by infant scabies (12.3%). The Table 3 summarises the clinical characteristics of the patients.

Benzyl benzoate was prescribed in all cases (100%). Other drugs used were antihistamines (65.8%), antibiotics (18.4%), antiseptics (12.2%) and local corticosteroids (1.6%).



Fig. 1. Common scabies with A genital involvement



(A)



(B)



(C)

Fig. 2. Superinfected scabies. A= hands involvement, B= Butocks involvement, C= Knees involvement



Fig. 3. Profuse and hyperkeratotic scabies, before and after traitement with Ivermectine and topical benzyl benzoate

Table 1. The socio-demographic characteristics of the patients

Age groups (years)	N (%)
1-10	106 (34.2)
11-20	48 (15.5)
21-30	69 (22.2)
31-40	33 (10.6)
41-50	17 (5.5)
51-60	12 (3.9)
> 60	25 (8.1)
Mean age : 24.02 ± 20.7	Extremes :1-86 years
Sex	
Male	154 (49.7)
Female	156 (50.3)
Marital status	
Married	105 (33.8)
Single	196 (63.2)
Divorced	6 (2.0)
Widowers	3 (1.0)
Level of education	
Without schooling	116 (37.4)
Elementary school	89 (28.7)
Secondary	33 (10.6)
University	72 (23.2)
Number of people in a house	
1-5	85 (27.4)
6-10	148 (47.7)
11-15	56 (18.1)
> 15	21 (6.8)
Number of baths per day	
Unique	139 (44.8)
Multiple	54 (17.4)
None	117 (37.7)
Presence of a case in the entourage	
Presence of cases	226 (72.9)
Absence of cases	84 (27.1)

Table 2. The bivariate analysis of potential risk factors

Variables	Modalities	Scabies		P value
		Yes	No	
Job	Yes	113	45	0.67
	No	112	40	
Education level	Yes	138	56	0.46
	No	87	29	
Number of baths / day	1	13	3	0.122
	2	208	77	
	3	4	5	
Sexual partener	Yes	104	25	0.004
	No	28	36	
Promiscuity	Yes	170	35	0.000
	No	55	50	
Number of people in house	1 à 5	41	44	0.000
	≥ 6	184	41	

Table 3. The clinical characteristics of the patients

Type of lesions	N (%)
Vesicles	275(88.7)
Scratch injuries	221(71.3)
Papules	77(24.8)
Scabroious chancres	32(10.3)
Crusts	28(9.0)
Erosions	20(6.4)
Pustules	18(5.8)
Topography of lesions	
Diffuse	276 (89.0)
Located	34 (11.0)
Sites of the lesions	
Hands	215(69.3)
Buttocks	201(64.8)
Thighs	107(34.5)
Foot	80(25.8)
Elbows	65(21.0)
Wrists	59(19.0)
axillary folds	45(15.5)
Abdomen	27(8.7)
Arm	23(7.4)
Knee	21(6.7)
Nipples	19(6.1)
Genital area	49(15.8)
Other	36(11.6)
Clinical forms	
Common scabies	225(72.5)
Clean people's scabies	10(3.2)
Superinfected scabies	18(5.8)
Infant scabies	38(12.2)
Profuse scabies	14(4.5)
Eczematized scabies	5(1.6)

4. DISCUSSION

From February to July 2020, we conducted a descriptive cross-sectional study to determine the prevalence of scabies, identify the factors that promote it, and describe the clinical characteristics and treatment modalities of scabies in the dermatology-venereology department of the Donka University Hospital. The unavailability of complementary tests for the identification of the parasite and the COVID-19 pandemic, which reduced the rate of use of the country's health facilities, were our main difficulties. The results obtained cannot be exhaustive, but give an idea of the epidemiological, clinical and therapeutic profiles of scabies in our department. With a prevalence of 26.6%, scabies was the second most common dermatosis in dermatological consultations after eczema (37.8%). This relatively high prevalence in our study is close to that found in the study of Kouotou EA et al [11] in Cameroon who reported

32% of scabies cases but lower than the 60% found by Ugbomoiko US et al [12] in Nigeria. The high prevalence of scabies in our context can be explained by the rather precarious living conditions of our populations, a low income which does not allow access to decent housing and a healthy meals. The age group most represented in our study is close to that described by Kobangué L et al [13] in Bangui, in which the most represented age group was 0 to 9 years. This could be explained by the close physical contact maintained in daily life between these children and their parents, or even other children they meet in nurseries or koranic schools. The female predominance in our study is also close to that described by Cassell JA et al [4] in England, who reported 76% females while Ugbomoiko US et al [12] reported 85.8% males in Nigeria. This could be mainly related to the demographics of the country or to recruitment bias. The high frequency of out-of-school patients observed in our study is higher than that

described by Nair PA et al [14] in India, who reported a prevalence of 33.3% among out-of-school individuals. The relatively low school enrolment rate in our country, especially among girls, could explain this frequency.

The Analysis of the probable risk factors for scabies showed us that the association with scabies was significant for promiscuity, multiple sexual partners and the number of people in the house greater than 5. These factors are also described in the study by Hart G et al [15,16] who showed that promiscuity (P-value=0.0001), number of people in the house (P-value=0.0004) and number of sexual partners (P-value=0.003) are risk factors for scabies.

The pruritus observed in all our patients is also reported in the study of Nair PA et al [14] who observed pruritus in 99% of their patients. Pruritus in scabies is an allergic immune response of the host to mites. It is also the main functional sign of scabies. The basic lesions found in our study are identical to those reported by Kouotou EA et al [9] in Cameroon who observed papules (75.4%), scratch lesions (66.3%) and pearl vesicles (43.2%) in their patients. These lesions are due to a host immune response to *Sarcoptes scabiei*. Indeed, the scabies mite could negatively regulate the expression of numerous cytokines and adhesion molecules of skin keratinocytes, thus causing the various lesions observed.

The sites of the lesions observed in our study were identical to those observed by Kouotou EA et al [9] in Cameroon. Common scabies and infant scabies, two clinical forms frequently observed in our patients, is an observation of most sub-Saharan African authors [9,12,13]. On the therapeutic level, the use of 5% or 10% benzyl benzoate frequently observed in our study, is also reported by Kobangué et al [13] who used benzyl benzoate in all their patients. This could be explained by the fact that benzyl benzoate is more available, less expensive and effective. This efficacy was confirmed in the study of Ly et al [17] in Senegal with a cure rate of 68.8% at 14 days and 95.8% at 28 days. Other drugs (mequitazine, amoxicillin) have been used for their effects on pruritus or superinfection.

5. CONCLUSION

In our context, scabies is very common. It affects people of all ages, with a predominance of children. Promiscuity, multiple sexual partners and the high number of people sharing the same

room are risk factors for contagiousness and dissemination of the disease.

CONSENT

As per international standard or university standard, patients' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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