

Original Research Article

Scabies in Conakry, Guinea: Epidemiological, eClinical and tTherapeutic pProfiles

Abstract

Comment [C1]: Write the beginning of the page on the left

Comment [C2]: Font size must be 12

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 favouring 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.

Material and methods. This 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.

UNDER PEER REVIEW

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.

Materials and methods.

Comment [C3]: references must be sequential

Comment [C4]: The title should be at the beginning of the page

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.

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%)

Comment [C5]: The results should be shown in tables

were civil servants. 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). 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%). 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%).

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 ~~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 [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.

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.

Références

1. Micali G, Lacarrubba F, Verzì AE, Chosidow O, Schwartz RA. Scabies: Advances in Noninvasive Diagnosis. *PLoS Negl Trop Dis* 2016;10(6):e0004691.
2. Karimkhani C, Colombara DV, Drucker AM, Norton SA, Hay R, Engelman D, et al. The global burden of scabies: a cross-sectional analysis from the Global Burden of Disease Study 2015. *Lancet Infect Dis* 2017;17(12):1247-1254.
3. Chandler DJ, Fuller LC. A Review of Scabies: An Infestation More than Skin Deep. *Dermatology* 2019;235(2):79-90.
4. Cassell JA, Middleton J, Nalabanda A, Lanza S, Head MG, Bostock J, et al. Scabies outbreaks in ten care homes for elderly people: a prospective study of

Comment [C6]: Make the references sequential within the search

clinical features, epidemiology, and treatment outcomes. *Lancet Infect Dis* 2018;18(8):894-902.

5. Royer M, Latre CM, Paul C, Mazereeuw-Hautier J; Société Française de Dermatologie Pédiatrique. La gale du nourrisson [Infantile scabies]. *Ann Dermatol Venereol* 2008;135(12):876-81.

6. Fuller LC. Epidemiology of scabies. *Curr Opin Infect Dis* 2013;26(2):123-6.

7. Bonkougou M, Traoré F, Ouédraogo AN, Ouédraogo MS, Tapsoba PG, Kafando Y, et al. Overview of dermatoses among detainees in the Ouagadougou Correctional Facility (Burkina Faso). *Our Dermatol Online* 2020;11(e):e93.1-e93.7.

8. Katsarou A, Armenaka M, Kosmadaki M, Lagogianni E, Vosynioti V, Tagka A, et al. Skin diseases in Greek and immigrant children in Athens. *Int J Dermatol* 2012;51(2):173-7.

9. Kouotou EA, Nansseu JR, Kouawa MK, Zoung-KanyiBissek AC. Prevalence and drivers of human scabies among children and adolescents living and studying in Cameroonian boarding schools. *Parasit Vectors* 2016;9(1):400.

10. Tounkara TM, Soumah MM, Keita M, Diané B, Bangoura M, Balde H, et al. Profil épidémiologique et clinique des dermatoses infectieuses chez les enfants au service de dermatologie de l'hôpital national Donka. In *Annales de Dermatol et de Venereol* 2012;139:B137-8.

11. Kouotou EA, Nansseu JR, Sangare A, MoguieuBogne LL, Sieleunou I, Adegbidi H, et al. Burden of human scabies in sub-Saharan African prisons: Evidence from the west region of Cameroon. *Australasian Journal of Dermatology* 2018;59(1):e6-10.

12. Ugbomoiko US, Oyedeji SA, Babamale OA, Heukelbach J. Scabies in resource-poor communities in Nasarawa state, Nigeria: epidemiology, clinical features and factors associated with infestation. *Tropical medicine and infectious disease* 2018;3(2):59.

13. Kobangué L, Guéréndo P, Abéyé J, Namdito P, Mballa MD, Gresenguet G. Gale sarcoptique : aspects épidémiologiques, cliniques et thérapeutiques à Bangui [Scabies: epidemiological, clinical and therapeutic features in Bangui]. *Bull Soc Pathol Exot* 2014;107(1):10-4.
14. Nair PA, Vora RV, Jivani NB, Gandhi SS. A study of clinical profile and quality of life in patients with scabies at a rural tertiary care centre. *Journal of clinical and diagnostic research: JCDR* 2016;10(10):WC01.
15. Engelman D, Fuller LC, Steer AC; International Alliance for the Control of Scabies Delphi panel. Consensus criteria for the diagnosis of scabies: A Delphi study of international experts. *PLoS Negl Trop Dis* 2018;12(5):e0006549.
16. Hart G. Factors associated with pediculosis pubis and scabies. *Genitourin Med.* 1992;68(5):294-5.
17. Ly F, Caumes E, Ndaw CA, Ndiaye B, Mahé A. Ivermectin versus benzyl benzoate applied once or twice to treat human scabies in Dakar, Senegal: a randomized controlled trial. *Bull World Health Organ.* 2009;87(6):424-30.