Original Article

Hospital Prevalence, Delay in Diagnosis, and Sociodemographic Features of Hidradenitis Suppurativa in Nigeria: A Multicentre Retrospective Study

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Abstract

Background: Hidradenitis suppurativa (HS) is rare in Africans and so not commonly documented in this population. **Aim:** We aimed to document the hospital prevalence, sociodemographic factors, delay in diagnosis, and factors associated with a delay in diagnosis. **Materials and Methods:** This multicentre retrospective study of 64 HS patients was conducted across seven outpatient dermatology clinics in Nigeria. Data spanning 2017 and 2022 were retrieved following ethical approval. Extracted information included age at onset, age at diagnosis, delay in diagnosis, gender, family history of HS, body mass index, smoking history, socioeconomic status, and Hurley stage. Data were analysed using IBM Statistics version 26. For all statistical tests, $P < 0.05$ was considered statistically significant. **Results:** Thirteen thousand six-hundred and two new patients composed of 5850 males and 7752 females attended the clinics and 64 of them had HS giving a hospital prevalence of 0.47% (64/13,602). Most of the HS (70.3%) were female. The median (interquartile range) age of the patients was 30 (24, 36) years and the age range was 12–59 years. Age at diagnosis was 20–39 years in 76.6%. There was a delay in diagnosis in 45.3%, a significant relationship between delay in diagnosis with duration and severity of HS with $P < 0.001$ and $P < 0.005$, respectively. **Conclusion:** HS is uncommon in Nigeria. Diagnosis is frequently delayed and patients present with a severe form of the disease. Furthermore, HS is rare among individuals with a low socioeconomic status. There is a need for more awareness and prompt referral of this debilitating disease at the primary health-care level.

Keywords: Delay in diagnosis, hidradenitis suppurativa, Hurley stage, prevalence

Introduction

Hidradenitis suppurativa (HS) is an uncommon debilitating skin appendage disorder.[1-4] The result of this is a dearth of information on its prevalence and clinical features, especially in Africans.[5] It is characterised by recurrent, painful deep-seated nodules, abscesses, sinus tracts and affects apocrine gland bearing areas of the axillae, groin, genitals, perianal, and inframammary folds.[1-4] Studies of HS in Africans are few due to the rarity of the disease and possible under diagnosis.[5-9] Thus far, there are only two reported prevalence studies from Africa and both are from Ghana.[6,7] These studies show a prevalence of 0.67% and 0.8%.[6,7]

The female gender is reported to be more affected by HS with females accounting for 60%–75% of patients.[7,10-12] In the documented studies from Africa, the male gender was more affected in Tunisia and the female gender in Ghana.[6-8] HS tends to affect people in their second to fourth decades of life.[5,7,12] The mean age of onset varies from 14 to 26 years and the mean age at diagnosis varies from 38 to 45 years.[11,13] A delay in diagnosis contributes to chronicity and scarring.[5,14] Delay in

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diagnosis is recorded in 73%–80% of HS patients and this is attributed to poor access to medical care, low socioeconomic status, family history of HS, and poor recognition of the disease by physicians.[14-16]

Some risk factors have been associated with HS. These include obesity, smoking, a family history, sex hormones, and the metabolic syndrome.[2,3,16,17] A family history of HS results in an earlier onset of HS, increased number of lesions, and an increased severity.[18] HS is noted to be more common in individuals with the metabolic syndrome.[19] Studies of HS in Africa are few and even fewer are studies of its sociodemographic factors. Our study aimed to document the hospital prevalence, delay in diagnosis, factors associated with a delay in diagnosis, socioeconomic status, smoking history, and body mass index (BMI) of individuals who have HS. Furthermore, we aimed to correlate smoking, delay in diagnosis, socioeconomic status, and a family history of HS to the severity of HS.

Materials and Methods

Study design

This multicentre retrospective study was conducted across seven outpatient skin clinics in Nigeria: Lagos State University Teaching Hospital, Federal Medical Centre Keffi, University of Abuja Teaching Hospital, Abuja, University of Calabar Teaching Hospital, Kaduna State University Teaching Hospital, University of Port Harcourt Teaching Hospital, and the Gastroderm Clinic, Lekki Phase 1, Lagos, Nigeria. The study was conducted over a three-month period (November 2022 to January 2023). Data spanning a six-year period (2017–2022) were retrieved from all the study centres.

Case notes of all patients who were diagnosed to have HS within the study period were retrieved and the relevant data were extracted. HS was diagnosed by board certified dermatologists based on the typical history and lesions typical of HS. Data extracted included; age at onset, age at diagnosis, delay in diagnosis, gender, family history of HS, BMI, smoking history, socioeconomic status and Hurley stage. In this study, a delay in diagnosis is said to have taken place when there is more than two years between onset of symptoms and a diagnosis of HS.[14,20] In addition, Hurley Stage II and III are regarded as severe HS. Smoking, delay in diagnosis, socioeconomic status, and family history of HS were correlated with the severity of HS. Patients were stratified into low and high economic status based on their income levels. Patients who earn <50,000/month ($700), which is the average minimum wage per month in the country, were regarded as low in socioeconomic status (LSES) and those who earn more as high in socioeconomic status. Students and teenagers were classified based on the income of their parents/guardians.

Statistics

Data was analysed using IBM's statistical package for social sciences (SPSS) version 26 (Chicago, USA). Kolmogorov–Smirnov test was conducted to assess the normality of the data. Numeric data were presented as median and interquartile range (IQR), while categorical variables were presented as percentages. Chi-squared and Fishers' exact tests were used to compare two categorical variables, while Mann–Whitney *U*-test was used to compare the medians of two categorical groups. For all statistical tests, $P < 0.05$ was considered statistically significant.

Ethics

Ethical approval (LREC/06/10/1953) for the study was obtained from the Health Research and Ethics Committees of the Lagos State University Teaching Hospital, Lagos State.

Results

A total of 13,602 new patients composed of 5850 males and 7752 females were attended to across the seven study centres over the study period. Sixty-four of the patients were diagnosed to have HS giving a hospital prevalence of 0.47% (64/13,602). Most of the HS patients (70.3%) were female. The median (IQR) age of the patients was 30 (24, 36) years and the age range was 12–59 years. The age (years) of the patients was <20 in 6.3%, 20–29 in 40.6%, 30–39 in 37.5%, 30–49 in 9.4%, and >50 in 6.3%. The age at onset ranged from 10 to 59 years and 40.6% had an age at onset with 20–29-year range [Table 1]. Age at diagnosis was 20–39 years in 76.6%. The median (IQR) duration of HS was 36 (11, 60) months and the duration ranged from 1 to 420 months. There was a delay in diagnosis in 45.3% (29/64) and this delay was up to 35 years in one patient. Almost half of the patients had a high socioeconomic status [Table 1].

A family history of HS was noted in 10.9%. A history of alcohol intake was documented in 15.6% (10/64), smoking in 3/64 (4.7%) with two of the patients were still smoking, Table 2 Less than one third of the patients were obese and the median BMI (IQR) was 27.6 (23.6, 30.3) [Table 2].

Further analysis showed a significant relationship between delay in diagnosis ($P < 0.001$), duration of HS($P < 0.005$) and severity of HS, [Table 3].

An analysis of the factors associated with a delay in diagnosis revealed a statistically significant relationship with duration of HS but not with median age, age of onset of HS, gender, family history of HS, and socioeconomic status [Table 4].

Discussion

HS, a chronic disease of the pilosebaceous glands, is said to be rare in Africans.[5,21,22] Our study demonstrates a low prevalence of HS and delay in diagnosis and that HS is found to be more in individuals with a high socioeconomic status.

The prevalence of HS was low in keeping with what has been documented in African–Americans and in the few studies of HS prevalence from Africa.[6,7,9] In addition, the prevalence of HS is low in Nigeria in reports of the spectrum of skin diseases.[23] The HS patients were predominantly female in keeping with the female gender affectation in reports from other studies.[7,11,12] HS is documented to be more prevalent in females. The reason for this gender bias is not completely known.

Table 1: Sociodemographic variables (*n*=64)

Variable	Frequency, *n* (%)
Age at onset (years)	
<20	15 (23.4)
20–29	26 (40.6)
30–39	18 (28.1)
40–49	3 (4.7)
>50	2 (3.1)
Age at diagnosis (years)	
<20	5 (7.8)
20–29	28 (43.8)
30–39	21 (32.8)
40–49	7 (10.9)
>50	3 (4.7)
Delay in diagnosis	
Yes	29 (45.3)
No	35 (54.7)
Delay in diagnosis (years) (*n*=29)	
3–5	17 (58.6)
>5	12 (41.4)
Mean (SD)	3.1 (5.2)
Range	0–35
Duration of HS (months)	
<12	13 (20.3)
12–23	10 (15.6)
24–59	41 (64.1)
SES	
Low (<50,000)	2 (5.4)
High (>50,000)	17 (45.9)
Not documented	18 (48.6)

SD: Standard deviation, HS: Hidradenitis suppurativa, SES: Socioeconomic status

Table 2: Epidemiologic and clinical factors (*n*=64)

Variable	Frequency, *n* (%)
BMI grade	
Underweight	2 (3.1)
Normal	18 (28.1)
Overweight	18 (28.1)
Obese	15 (23.4)
Not documented	11 (17.2)
Smoking	
Yes	3 (4.7)
No	61 (95.3)
Alcohol intake	
Yes	10 (15.6)
No	54 (84.4)
HS staging	
No lesion	1 (1.6)
Hurley I	27 (42.2)
Hurley II	23 (35.9)
Hurley III	13 (20.3)
Severity of HS	
Not severe	28 (43.8)
Severe	36 (56.3)

BMI: Body mass index, HS: Hidradenitis suppurativa

Table 3: Factors associated with severity of hidradenitis suppurativa

Variables	Mild HS (*n*=28), *n* (%)	Severe HS (*n*=36), *n* (%)	*P*
Smoking			
Yes	2 (66.7)	1 (33.3)	0.577#
No	26 (42.6)	35 (57.4)	
Delay in diagnosis			
Yes	5 (17.2)	24 (82.8)	<0.001#
No	23 (65.7)	12 (34.3)	
Duration of HS months (IQR)	18.0 (6.0–45.0)	48.0 (24.0–81.0)	0.005
Socioeconomic class			
Low	2 (33.3)	4 (66.7)	0.665#
High	18 (50.0)	18 (50.0)	
Family history			
Yes	1 (14.3)	6 (85.7)	0.125#
No	27 (47.4)	30 (52.6)	

#Fischer's exact *P* value. HS: Hidradenitis suppurativa, IQR: Interquartile range

Table 4: Factors associated with delay in diagnosis

Variables	Delay in diagnosis, median (IQR)		*P*
	Yes (*n*=22)	No (*n*=42)	
Age (years)	30.5 (25.8–36.3)	28.0 (23.0–36.3)	0.453
Age at onset (years)	22.0 (17.5–29.8)	26.0 (20.8–34.5)	0.137
Age at diagnosis (years)	29.5 (24.8–36.3)	26.0 (22.8–36.3)	0.571
Disease duration (months)	60.0 (48.0–123.0)	15.0 (6.0–39.0)	<0.001
Gender			
Male	4 (21.1)	15 (78.9)	0.165
Female	18 (40.0)	27 (60.0)	
SES			
Low	3 (50.0)	3 (50.0)	0.685
High	13 (36.1)	23 (63.9)	
Family history			
Yes	5 (71.4)	2 (28.6)	0.077
No	17 (29.8)	40 (70.2)	

IQR: Interquartile range, SES: Socioeconomic status

There was a delay in diagnosis in almost half of the patients. One patient was not diagnosed until 35 years after the onset of HS despite being attended to by health-care workers. These health-care workers were not dermatologists, making a case for access to dermatological care being important in the management of HS. HS initially presents as recurrent boil-like lesions. This can be difficult for both the patient and health workers unfamiliar with HS to recognise, resulting in delays in diagnosis and appropriate treatment. Studies show that a delay in diagnosis is common in HS patients depending on how prevalent HS is in the locality and how conversant the attending health workers are with the disease.[14,20,24] Kilgour *et al*. in the their study on severity and health-care access of African–Americans who have HS documented a delay similar to ours and attributed the delay to poor access to health care and poverty.[9] When we looked at factors responsible for a delay

in diagnosis, only the duration of disease was significantly associated with a delay in diagnosis. Our study contrasts other studies where it was gender, a family history of HS, and socioeconomic status, which caused a delay in diagnosis.[9,20]

In our cohort of patients, HS was more prevalent in the high socioeconomic group. This is contrary to what is commonly documented.[24,25] Frequently, HS is documented as a disease of individuals with a LSES and these individuals are documented to have poor access to health care and to have increased HS severity.[24,25] Smoking was not a prevalent risk factor in our patients. This was not surprising as smoking is not a common social behaviour in Nigeria, the country of study.[26] Similar to our study, Hagan *et al*. in their study in Berekum, Ghana, another African country did not find smoking to be common nor a risk factor for HS.[7] Smoking is documented to cause increased epidermal hyperplasia, adherence of bacteria to keratinocytes, decreased healing, increased severity, and reduced efficacy of medications in HS.[2,17,27]

Over half of the patients in our study had Hurley Stage II and III. Although HS is uncommon in our population, patients present to the clinics with severe forms of the disease. This could be related to the delay in diagnosis as highlighted in this study. In addition, the only factors significantly related to severity of HS were a delay in diagnosis and the duration of HS. HS is said to become a severe disease with scaring when there is a delay in diagnosis and a delay in treatment.[14] In consonance with our study, Kokolakis *et al*. demonstrated that a delay in diagnosis is significantly related to increased severity of HS.[14]

Our study was limited by being a retrospective one with consequent missing information in some cases and inability to ask further questions of the patients. The multicentre nature of the study is one of the strengths of the study.

Conclusion

In conclusion, hidradenitis suppurativa is uncommon in Nigeria. Diagnosis is frequently delayed and patients present with a severe form of the disease. Furthermore, hidradenitis suppurativa is rare amongst individuals with a low socioeconomic status. Smoking, a family history of HS and a high BMI are uncommon in Nigerian HS patients. There is need for more awareness and prompt referral of this debilitating disease at the primary health care level.

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Conflicts of interest

There are no conflicts of interest.

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