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SHORT COMMUNICATION

Hidradenitis Suppurativa Disproportionately Affects African Americans: A Single-center Retrospective Analysis

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Hidradenitis suppurativa (HS) is a chronic, debilitating inflammatory disease of the hair follicles with a wide spectrum of severity. It is characterized by post-pubertal onset of painful recurrent boils in the axilla, groin, and anogenital regions. HS lesions can persist for days or weeks until they rupture spontaneously, draining purulent malodorous material. Recurrent flares can lead to sinus tract formation, hypertrophic scarring and dermal contractures (1, 2). Patients' quality of life can be severely affected by this disease due to pain, embarrassment, and days lost from work and school.

There are no diagnostic tests for HS and histopathology tends to be non-specific (Table I). Therefore, HS is diagnosed clinically. Recurrent lesions, typically described as deep-seated painful nodules, abscesses, draining sinus, bridged scars and double open comedones, characterize the disease. The lesions typically involve the axillae, groin, perineal and perianal region, buttocks, infra- and inter-mammary folds (3). When HS occurs with acne conglobata, pilonidal cysts and dissecting cellulitis of the scalp, the syndrome is referred to as the follicular occlusion tetrad (1, 4).

The prevalence of HS has been reported as 0.3–4% (5), but this may be an underestimation since HS often goes unrecognized or misdiagnosed. In addition, many patients find their condition embarrassing and are reluctant to bring the problem to the attention of medical professionals. Women are more frequently affected than men with a female:male ratio of 3:1 (2, 6). A higher prevalence in African-Americans has been anecdotally suggested but has not been investigated (7–9).

In this study we sought to determine the frequency of HS at our institution, and discuss specifically the differences in frequency between men and women and between African-Americans and Caucasians.

METHODS

An institutional review board-approved retrospective chart review was performed. Charts of patients seen at our two main hospitals in 2008–2010 with International Classification of Diseases, Ninth Revision diagnostic code for hidradenitis suppurativa (705.83) were included. All patient charts were reviewed to collect demographic data and to confirm the diagnosis of HS. Patients were considered as having HS if they met all 3 of the criteria defined by the Hidradenitis Suppurativa Foundation (Table I) (3). Data for the total number of patients seen at the 2 main hospitals of our institution for that time period by race and sex were also obtained. The frequency of HS was calculated, by sex and race. Ninety-five percent confidence intervals for proportions were calculated by using normal approximation to the binomial distribution. Using the two-tailed chi-square test with Yates correction, the difference in the expected and observed frequency of HS between men and women, and between African-Americans and Caucasians was assessed for statistical significance. The expected frequencies were determined based on the corresponding proportion of patients seen at our institution during the same time period.

Table I. *Diagnostic criteria for hidradenitis suppurativa (3)*

1. *Typical lesions:* Deep-seated painful nodules in early lesions or abscesses, draining sinuses, bridged scars and "double open comedones" in more developed lesions
2. *Typical topography:* Axillae, groin, perineal and perianal region, buttocks, intra- and inter-mammary folds, abdomen
3. *Chronicity and recurrences*

All 3 criteria must be met for the diagnosis of hidradenitis suppurativa.

RESULTS

Four hundred and seventy-six patient charts with the diagnosis code for HS were reviewed. Of these, 381 patients met the criteria for a clinical diagnosis of HS. Only 4 Asian patients and 5 Hispanic patients with HS were identified. Their data is included in Table II.

HS was diagnosed in 294 women (77%) and 87 men (23%), 247 African-Americans (65%), 125 Caucasians (33%), and 9 other races (2%). The female:male ratio was 3.3:1, similar to previous studies. Among women, 195 (66%) were African-American, 91 (31%) were Caucasian, and 8 (3%) other races (Table III). Thirty-six percent (75,655) of the patients seen at our institution in 2008–2010 were African-American, yet African-Americans accounted for 65% of the HS cases (Tables II and III).

The frequency of HS was highest in African Americans (65%), particularly in African-American women (51%), and this was statistically significant ($p < 0.0001$) (Table II). The difference in the expected and observed frequencies of HS in African-Americans and Caucasians was also statistically significant ($p < 0.0001$) (Table III).

DISCUSSION

In the literature, the prevalence of HS is reported as 0.3–4%, with a female:male ratio of 3:1 (2, 5, 6). This

Table II. *Patients with hidradenitis suppurativa (HS), by sex and race, in relation to overall number of patients seen in 2008–2010*

	HS cases seen at our institution	Overall number of patients seen at our institution*
Female	294	106,683
Male	87	100,753
African-American		
Total	247	75,655
Female	195	41,026
Male	52	34,629
Caucasian		
Total	125	120,122
Female	91	58,811
Male	34	61,311
Hispanic		
Total	5	8,229
Female	4	4,886
Male	1	3,343
Asian		
Total	4	3,430
Female	4	1,960
Male	0	1,470
Overall	381	207,436

*Data was omitted for 4 patients whose sex was listed as "unknown"

study showed a female:male ratio of 3.3:1, which closely approaches the trends seen in the literature (2, 6). The results of this study support anecdotal observations of a disproportionate number of African-American patients with HS. The reasons for this racial predilection are unclear and deserve further study.

The main limitation of this study is the retrospective design. Although the patient charts were reviewed in an attempt to confirm the diagnosis of HS, the retrospective design did not allow for true clinical confirmation by the investigators. Additionally, data on known HS risk factors such as smoking and Body Mass Index were not available for most patients. The frequency of HS may have been underestimated since HS is often misdiagnosed as furuncles and abscesses; our review did not include the latter diagnosis codes. On the other hand, HS frequency may have been over-estimated since our hospital is a tertiary care facility where more HS patients may be referred. Selection bias is another limitation of this study. The data was extracted from a single tertiary care institution in an urban area. The patient population of our institution may include more African-Americans and more patients with relatively uncommon diseases like HS and therefore may not be

Table III. *Frequency of hidradenitis suppurativa (HS), by sex and race*

	HS, *n*	Proportion (%)	95% CI
Women	294	77	73–81
Men	87	23	19–27
African Americans overall	247	65*	60–69
Caucasians overall	125	33*	28–38
African American women	195	51*	46–56
Caucasian women	91	24*	20–28
African American men	52	14	11–17
Caucasian men	34	9	6–12

*$p < 0.0001$. CI: confidence interval.

generalizable to the general population. Despite these limitations, our findings suggest a higher prevalence of this debilitating disorder in African-Americans, in particular African-American women. These findings highlight the need for large, population-based studies examining the race-specific prevalence of HS in the United States and for studies investigating possible pathophysiologic mechanisms underlying the disproportionate frequency of this disease by sex and race.

The authors declare no conflict of interest.

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