

Original Article:

Clinico-epidemiological Profile of Hidradenitis Suppurativa in Bangladesh

Mohammed Saiful Islam Bhuiyan¹, Abida Sultana², Lutfur Rahman³, Ishrat Bhuiyan⁴, Laila Sultana⁵, Noor-E-Jannat⁵, Afroza Jesmin⁶, Mostaque Mahmud¹

1 Associate Professor, Dept. of Dermatology & Venereology, Bangabandhu Sheikh Mujib Medical University, Shahbagh, Dhaka, Bangladesh.

2 Professor, Dept. of Dermatology & Venereology, Bangabandhu Sheikh Mujib Medical University, Shahbagh, Dhaka, Bangladesh.

3 Junior consultant, Central skin and social hygiene center, Agrabad, Chittagong, Bangladesh.

4 Associate Professor, Dept. of Dermatology & Venereology, Shaheed Suhrawardy Medical College (ShSMC), Dhaka, Bangladesh.

5 Resident, MD (Phase-B), Dept. of Dermatology & Venereology, Bangabandhu Sheikh Mujib Medical University, Shahbagh, Dhaka, Bangladesh.

6 Junior consultant, Dept. of Dermatology & Venereology, Mugda Medical College, Dhaka, Bangladesh.

Abstract

Background: Hidradenitis suppurativa (HS) is a painful and difficult to manage inflammatory disease presenting with deep-seated abscess, discharging sinuses and scarring. It is relatively uncommon in Asia and there is dearth of published data on HS from Bangladesh.

Objective: To describe the epidemiological and clinical profiles of HS in Bangladesh.

Methods: This multicenter cross-sectional observational study was conducted with diagnosed cases of HS in 3 tertiary level hospital of Bangladesh. Demographic and clinical features were recorded and were compared with published data from Bangladesh other countries. Descriptive statistics in terms of mean, standard deviation, percentage, median, and percentiles were calculated for all parameters in the study. Obtained data were compared with the published articles of home and abroad.

Result: Male outnumbered female in HS cases and male to female ratio was 1.6:1. The disease was started after puberty in majority of cases. The mean age of participants was 28.4 ± 3.7 years that ranging from 16-74 years. Mean duration of disease was 9.7 ± 3.4 years ranging from 2 to 25 years. Comparing with general population the rate of diabetes and obesity were significantly higher ($p < 0.01$) in patients with HS whereas smoking and hypertension was comparable ($p > 0.05$). Axillae was the common (73.9%) affected anatomical site followed by groin. Acne was the commonest comorbidity and most of patients.

Conclusion: In this clinic-epidemiological study males are more prone to develop HS and delayed diagnosis is an important issue which may leads to improper treatment. Acne, diabetes and obesity were the common comorbidities of HS.

Keywords: Hidradenitis suppurativa, Acne inversa, Epidemiology of hidradenitis suppurativa

Introduction:

Hidradenitis suppurativa (HS) or acne inversa is a chronic inflammatory dermatological disorder mostly involves hair follicle of the apocrine-bearing areas of the body including axillary, inguinal, and anogenital regions characterized by recurrent deep-seated nodules, abscesses and discharging sinuses with unpleasant odor. Typically patient suffers more than two recurrences in 6 months. It is presently described as an inflammatory disease of

the pilosebaceous follicle with an underlying system immune dysregulation in genetically susceptible persons, the course of which modified by exogenous triggers or aggravating factors. The process starts with follicular occlusion in the folliculo-pilosebaceous unit, followed by rupture and an ensuing immune response, where the immune response involves the activation of neutrophilic granulocytes, macrophages, and plasma cells, as

Corresponding author

Mohammed Saiful Islam Bhuiyan, Room-302, Block-C, Dept. of Dermatology & Venereology, Bangabandhu Sheikh Mujib Medical University, Shahbagh, Dhaka, Bangladesh, E-mail: drsaifulib@bsmmu.edu.bd Contact number: +8801716259319.

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well as innate pro-inflammatory cytokines such as interleukins (IL-1 β , IL-17), tumor necrosis factor (TNF- α), and interferon (IFN- γ), which leads to a vicious cycle of tissue destruction. HS is associated with a range of comorbidities, including acne, polycystic ovary syndrome (PCOS), metabolic syndrome, diabetes mellitus type 2, inflammatory bowel disease (IBD), psoriasis and many autoimmune disorders.

The persistent inflammatory nature of the disease significantly affects patient's quality of life, making patient vulnerable for social stigma, low mental health, and increase suicidal ideation in comparison to the general population. HS is diagnosed on the basis of clinical features of typical HS lesions located mainly in the intertriginous areas with additional supportive evidence of radiological (high-frequency ultrasonography and magnetic resonance imaging) and histopathological features. HS reasonably mimics with acne, follicular pyoderma, furuncles, carbuncles, abscesses, scrofuloderma, actinomycosis, lymphogranuloma venereum, granuloma inguinale, Crohn's disease, Bartholin cysts, metastasis and many other diseases. The level of awareness regarding this disease among general population and non-dermatologist physicians is low even in high prevalent countries. Delayed diagnosis, wrong diagnosis, under treatment of HS and drop out from treatment is a consequence. Hidradenitis suppurativa has a wide range of prevalence ranging from 0.00033% to 4.10%. Though the exact epidemiological data of HS from South Asia, especially from Bangladesh is not available and according to our practical experience HS can be considered a rare condition in Bangladesh. The current study was conducted to analysis demographic, epidemiological and clinical profile of Bangladeshi patients of HS.

Methods

It was a multi-center cross sectional observational analytic study conducted from May 2022 to April 2023 in Bangabandhu Sheikh Mujib Medical University (BSMMU), Mugda Medical College, Dhaka and Central skin and social hygiene center, Agrabad, Chittagong. HS case detection was made on the basis of following criteria. A) Obligatory criteria: i) Typical history: Recurrent painful or purulent lesions more than twice/6 months; ii) Typical location: Groin, armpit, perineum, buttocks area and submammary/intramammary fold, iii) Typical clinical

signs: Follicular papule/pustule (folliculitis), nodule (inflammatory or noninflammatory), abscess, cyst, fistula/sinus (exudative or nonexudative), double pseudocomedone, scar(atrophic, net-like, erythematous, hypertrophic, linear or bridged). B) Additional criteria (not obligatory) – HS-positive family history, no evidence of pathogens or presence of normal skin microflora at the predominant primary type of lesions. If all three obligatory criteria are present, or one or more obligatory locations are involved, one or more types of obligatory lesions are present then the diagnosis of HS was confirmed.¹³ Information on age, sex, history of affected family members, smoking habit, age at onset of the disease, age at diagnosis, diagnostic delay, body weight (BMI), comorbidities, aggravating factors, anatomical area involved, and severity of the disease (Hurley stage) were recorded. Family history was considered positive if any of first- or second-degree relatives had found as sufferer of HS. Comorbidities were also diagnosed on the basis of previous document, history, clinical and laboratory findings. BMI (kg/m²) values were divided as underweight (BMI < 18.5), normal (BMI 18.5–23.5), overweight (BMI 23.5–27.5) and obese (BMI > 27.5) according to the WHO guidelines for the Asian population.

HS was categorized according to the severity as three stages by Hurley classification system. Stage I – solitary or multiple isolated abscess formation without scarring or sinus tracts, Stage II – recurrent abscesses, single or multiple widely separated lesions, with sinus tract formation, and Stage III – diffuse or wide involvement, with multiple interconnected sinus tracts and abscesses. This study was approved by the Institutional Review Board (BSMMU/2022/4085; Date 23-4-2022) of BSMMU.

Result

Demographic and clinical data were collected from 23 patients, males were predominantly sufferer (male to female ratio 1.6:1) (Table I). In 16 (69.6%) patients the disease was started after puberty (≥ 18 years) and the mean age of patient at the time of diagnosis was 28.4 ± 3.7 years ranging from 16 to 74 years. The mean of delay for the diagnosis was 9.7 ± 3.4 years ranging from 2 to 25. A positive history of HS among first- or second-degree relatives was found in 2 (8.7%) (Table I). Among male patients 6 (35.7%) were current or ex-smoker and 65.2% were obese or over weight with a mean BMI 29.0 ± 7.0 .

Axillae was the most frequently (73.9%) affected site followed by groin (39.1%). HS severity was mild (Hurley I) in (52.2%), moderate (30.4%) and severe (17.4%). Acne was the most common (30.4%) comorbidity followed by diabetes mellitus, hypertension and hyperlipidemia. The rate of smoking and hypertension has no significant difference with normal population and obesity and diabetes are significantly prevalent (Table II).

Table I: Demographic and clinical profiles hidradenitis suppurativa patients (n=23)

Variables	Frequency/percentage/Mean/Ratio
Sex (male:female)	14:9(1.6:1)
Age at disease onset (years)	
<18 years	7(30.4%)
≥18 years	16(69.6%)
Age at diagnosis: Mean, range (Years)	28.4±3.7, 16-74
Diagnostic delay: Mean, range (Years)	9.7±3.4, 2-25
Family history	2(8.7%)
Smoker (current or ex-smoker)	
Male (n=14)	6 (35.7%)
Female (n=9)	0
BMI (Mean±SD)	29.0±7.0
Normal	8 (34.8%)
Over weight	9 (39.1%)
Obese	6 (26.1%)
Involved site Obese	
Axillae	17 (73.9%)
Inguinal	9 (39.1%)
Gluteal	3 (13.0%)
inframammary	2(8.7%)
Genital	2 (8.7%)
Perianal	2(8.7%)
Abdominal	2 (8.7%)
Disease severity	
Hurley I	12 (52.2%)

Table 2. Comparison of smoking rate, BMI, diabetes and hypertension with the general population

Variables	HS patients(n=23)	General population	P value
Smoking rate	35.7%	36.0% ¹	>0.05
BMI (kg/M ²)	29.0±7.0	22.6± 3.7 ²	<0.01*
DM	21.7%	12.8% ³	<0.01*
Hypertension	17.4%	17.9% ⁴	>0.05

Discussion

The epidemiological studies from different parts of the world has created controversies regarding the gender distribution of patients with hidradenitis

suppurativa. Although in many of those it has been described as a female predominant disease and often attempted to justify this by disease onset, fluctuation and flare during the menstrual cycle, pregnancy, and menopause. In European and North American population HS is three times more prevalent among women. In our study male to female ratio was 1.6:1 which is consisted with previous Asian studies. - HS usually affects after puberty with an average onset at age 23 years.

Average age of onset of HS among our patients were 28.4±3.7 years ranging. Though HS is particularly rare in young and prepubescent children, 20 in the current study 30.4% manifested before the age of 18 years and the youngest at the age of 14. Diagnosis of HS is often challenging, very often they misdiagnosed by general physicians or other specialists before a correct diagnosis as HS, patients also feel ashamed to present the disease as it mostly involves relatively sensitive areas including axillae, groins, buttock, breast and genitals. Globally an average delay before a correct diagnosis of HS, patient suffers from 7 to 10 years. 7 In this study the mean delay of diagnosis was 9.7±3.4, one patient of 74-year-old age suffered about 25 years before diagnosis as HS.

Bangladesh has one of the largest tobacco consuming populations (37.8 million adults) in the world where 36% of the adult male and 0.8% women smoke tobacco. 16 In the current study none of the women and 35.7% of male were smoker. The rate of smoking was indifferent among patients of HS comparing with general population. 16, 23 In the current study 8.4% had affected family member though in the previous cohort 30-40% of patients of HS have shown positive family history of the disease. Genetic susceptibility and environmental influences of shared microbiome, diet, and obesity among related subjects could explain familial clustering. Obesity is considered as a risk factor of HS though the precise mechanism is not yet clear and the relationship between BMI and impact of HS is non-linear. - Approximately two thirds of HS patients were overweight or obese and the mean BMI was significantly higher than the general population. 17 Axilla was the exclusively commonest site of hidradenitis suppurativa followed by groin which is consistent with previous studies, 2 but in some studies groin is the mostly affected site. Schrader et al, found that lesions on axillae, groins and breast areas are associated with more severe disease. 24 Among our patients about fifty percent was mild (Hurley I), similarly in previous studies in

Argentina and South Korea majority of patients of HS were offollowed by Hurley II and Hurley III to a lesser extent. , Patient of HS often suffer with different comorbidities which make patients dissatisfied with their treatment. Acne was found as a comorbidity in 30.4% of our cases and one patient (4.3%) had pilonidal sinus. In previous studies pilonidal sinus was foundin 4.6% to 31% cases of HS and acne were associated in 13% to 36%. , In comparison with common people, individuals with HS are nearly 3 times more prone to develop diabetes mellitus. The overall age-standardized prevalence of diabetes in Bangladesh is 12.8%.¹⁸ whereas diabetes was significantly higher (21.7%) among patients with HS ($p<0.01$). The rate of hypertension in patient with HS was very comparable to the national prevalence.

Conclusion

In Bangladesh, HS affects predominantly males after puberty and the diseaseis diagnosed at late part of third decadeof age usually after a suffering of approximately ten years. Diabetes mellitus and obesity are significantly higher among patients with HS but rate of smoking and hypertension were comparable with the national prevalence. Majority of the lesions were located at axillae and severity was mild (Hurley I).

Limitations

Small number of samples.

Conflicts of interest

None



Figure 1: HS lesion on axilla



Figure 2: HS with interconnecting fistulae



Figure 3: HS with Pilonidal sinus



Figure 4: HS lesion on intermammary area

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