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ORIGINAL ARTICLE

Epidemiological profile of patients with hidradenitis suppurativa at a dermatology service in Southern Brazil

Perfil epidemiológico dos pacientes com hidradenite supurativa em um serviço de dermatologia no Sul do Brazil

Guilherme Bail-Ferreira, Maiara C. Macagnan, Maria E. Meneguetti, Adriano A. Mehl, and Danilo H. de Barros*

Department of Dermatology, Hospital Santa Casa de Misericórdia de Curitiba, Paraná, Brazil

Abstract

Objective: The present study aimed to identify the epidemiological profile, disease severity, and treatments used by patients with HS referred to a specialized dermatology outpatient service at a tertiary hospital in southern Brazil. **Methods**: A cross-sectional observational study analyzing the medical records of patients diagnosed with HS referred to a dermatology outpatient clinic at a tertiary hospital in southern Brazil. Data included both clinical characteristics of the patients and assessment of severity and quality of life scores. **Results**: Ninety-six patients were eligible for the study. Women were predominant, with an average age of 38.4 years. Almost half of the participants were smokers, while 78 % were sedentary and 79 % were overweight. The severity scores showed moderate disease in most patients, significantly impacting quality of life. Patients with symptom onset between the ages of 11 and 20 years had higher DLQI values at diagnosis than the other age groups (p = 0.016). The most commonly used therapeutic by the patients was oral antibiotics associated with topical resorcinol. **Conclusion**: Our findings were similar to those reported by other Latin American and global studies. Early diagnosis, evidence-based treatment, and control of comorbidities are the cornerstones for disease control, offering a better quality of life.

Keywords: Hidradenitis suppurativa. Epidemiology. Brazil.

Resumo

Objetivo: O presente estudo teve como objetivo identificar o perfil epidemiológico, a gravidade da doença e os tratamentos utilizados por pacientes com HS encaminhados a um ambulatório especializado em dermatologia de um hospital terciário do sul do Brazil. **Métodos**: Estudo observacional transversal que analisou os prontuários de pacientes com diagnóstico de HS encaminhados a um ambulatório de dermatologia de um hospital terciário do sul do Brazil. Os dados incluíram as características clínicas dos doentes e a avaliação dos escores de gravidade e qualidade de vida. **Resultados**: 96 doentes foram elegíveis para o estudo. Predominaram as mulheres, com idade média de 38,4 anos. Quase metade dos participantes eram fumantes, enquanto 78% eram sedentários e 79% tinham excesso de peso. Os escores de gravidade mostraram doença moderada na maioria dos pacientes, impactando significativamente a qualidade de vida. Os doentes com início de sintomas entre os 11 e os 20 anos apresentaram valores de DLQI mais elevados no diagnóstico do que os outros grupos etários (p = 0,016).

***Correspondence:**
Guilherme Bail-Ferreira
E-mail: guilhermebailferreira@gmail.com

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A terapêutica mais utilizada pelos pacientes foi a utilização de antibióticos orais associados ao resorcinol tópico. **Conclusão**: Nossos achados foram semelhantes aos relatados por outros estudos latino-americanos e globais. O diagnóstico precoce, o tratamento baseado em evidências e o controle das comorbidades são os pilares para o controle da doença, oferecendo melhor qualidade de vida.

Palavras-chave: Hidradenite supurativa. Epidemiologia. Brazil.

Introduction

Hidradenitis suppurativa (HS) is a chronic, inflammatory, recurrent, and debilitating cutaneous follicular disease first described in 1839 by Aristide Verneuil[1]. The prevalence in Brazil is 0.41%, similar to the global prevalence of 0.4%[2,3]. North American and European data show a prevalence of 0.7-1.2%, while Garg et al. reported an incidence of 11.4/100,000[4-7]. This high variation is mainly due to the lack of awareness of the disease and ethnic peculiarities among studies[8].

The diagnosis of HS is based on the patient's history and clinical presentation. Symptoms usually emerge after puberty, and the diagnosis is based on three criteria: typical lesions, typical locations, and local recurrence[9]. Characteristic lesions include deep, painful nodules that expand to form abscesses and may progress to suppurative sinus tracts or tunnels, bridging scars, or fistulas. Chronic inflammation leads to fibrosis and contracture, with extensive scarring[10,11]. Commonly affected sites include the axillary, inguinal, gluteal, infra- and intermammary, and perineal regions. The scalp, face, and lower abdomen have been described, but are less frequent sites[12]. The natural history includes periods of inactivity and activation, with two recurrences in 6 months, confirming the diagnosis of HS. Patients usually complain of itching, pain, and local discomfort, exacerbated by physical activity, hair removal, heat, and sweating[11,13].

Risk factors already identified include female gender, smoking, and obesity[14]. Studies on population prevalence and epidemiological profile are scarce, especially in Latin America, although they are essential for formulating public policies on HS. This study aimed to identify the epidemiological profile and severity of clinical manifestations in patients diagnosed with HS who were referred to a specialized dermatology outpatient service at a tertiary hospital in southern Brazil.

Materials and methods

A cross-sectional observational study was conducted based on the analysis of medical records of patients with HS evaluated at a specialized dermatology outpatient service at a tertiary hospital in southern Brazil between March 2020 and November 2022. The study was approved by the local Research Ethics Committee (CAAE: 70248723.5.0000.0020) following Resolution n° 466/2012 of the National Health Council (CNS) and the Helsinki Conventions. The inclusion criteria included individuals aged 18 or over who had complete information in their medical records. Patients considered eligible signed the Informed Consent Form and were included in the study.

The data assessed included gender, age, weight, height, body mass index (BMI), comorbidities, disease severity, impact on quality of life, time until diagnosis, and current treatment for HS. The Hurley classification and the International Hidradenitis Suppurativa Severity Score System (IHS-4) were used to assess the disease severity. The Hurley classification assesses the presence of abscesses, tunnels, and scars, generating a classification in 3 stages of severity (1: absence of fistulas or scars; 2: the presence of fistulas and scars separated from each other; and 3: the presence of interconnected fistulas and scars). The IHS-4 corresponds to a mathematical score in which inflammatory nodules are multiplied by one, while abscesses are multiplied by two and draining fistulas by four. Mild conditions are those scored with up to 3 points, moderate conditions between 4 and 10 points, and severe conditions greater than or equal to 11 points. The dermatology quality of life index (DLQI) was used to assess the impact on daily life, and values greater than ten meant a severe impact on the quality of life.

The data were organized in Microsoft Excel® 2019 spreadsheets and statistically analyzed using IBM SPSS Statistics 29.0.2.0. Categorical data were presented as frequency tables, while quantitative variables were presented as descriptive measures (mean, median, standard deviation, minimum, and maximum). The data were assessed for normality using the Kolmogorov-Smirnov test to verify bivariate statistical relationships. Due to the non-homogeneity of the data, it was analyzed using Pearson's Chi-square test, with a significance level of 5%.

Results

Among the 96 patients assessed, 71 were women, and 25 were men (Table 1) with a mean age of 38.4 years (range 14-68 years with a median of 37 years). The patients' weight ranged from 53.0 to 132.0 kg, with a mean of 81.5 kg and a median of 80.0 kg. The mean height was 164 cm, ranging from 136 to 192 cm, and a median of 165 cm. The patients' BMI averaged 29.8 kg/m², with a range of 20.1-43.0 kg/m² and a median of 29.0 kg/m². The age at onset of symptoms ranged from 1 to 60 years, with a mean of 26.3 years and a median of 24.0 years. The time from symptom onset to diagnosis ranged from 6 months to 50 years, with a mean of 10.6 years until diagnosis.

Regarding lifestyle habits, 44 (46%) patients were active smokers, 75 (78 %) patients did not practice any physical activity, and only 21 (21%) patients reported regular physical activity (Table 1). Forty-five (47 %) patients had no other commodities than HS (Table 1). However, 17 (18%) patients reported treatment for systemic arterial hypertension, followed by 10 (10%) cases of diabetes, and 8 (8%) reported anxiety or depression. Other less commonly identified comorbidities were acne (5%), asthma (4%), dyslipidemia (4%), hypothyroidism (4%), Darier's disease (2%), bipolar disorder (2%), psoriasis (1%), Crohn's disease (1%), HIV (1%), schizophrenia (1%), epilepsy (1%), pulmonary emphysema (1%), rheumatoid arthritis (1%), coronary artery disease (1%), and falciform anemia (1%).

Most patients (61.4%) were classified as Hurley 2 at diagnosis, followed by 27.0% as Hurley 1 and 11.4% as Hurley 3 (Table 1). Forty-one individuals (42.7%) were diagnosed as IHS-4 in the mild stage, followed by 33.3% in the moderate stage and 24% of cases in the severe stage (Table 1). The mean DLQI at the time of HS diagnosis was 12.27 points, with a median of 12.5 points.

Patients with an earlier onset of symptoms, between 11 and 20 years of age, had higher DLQI values at diagnosis than the other age groups ($p = 0.016$). About the Hurley classification, although most patients with symptom onset between 11 and 20 years of age had Hurley 2 at diagnosis, there was no significant difference in the sample with the other age groups and age ranges ($p = 0.858$). There was also no statistically significant difference when comparing the age of symptom onset and the IHS-4 at the HS diagnosis ($p = 0.974$).

Twenty-five percent of the patients evaluated were using topical resorcinol associated with some oral antibiotic at the time of the evaluation, followed by 18 patients (18.7%) using only topical resorcinol, 16 (16.6%) using systemic antibiotics, 16 (16.6%) with Adalimumab, 10 (9.6%) with no treatment. The remaining 12 patients (12.5%) were on topical antibiotics or an association of oral antibiotics with metformin, topical antibiotics with metformin, topical antibiotics with oral antibiotics and metformin, or isotretinoin alone (Table 2).

Table 1. Characteristic of the patients with hidradenitis suppurativa regarding clinical and epidemiological aspects

Variable	n (%)
Gender	
Male	25 (26)
Female	71(74)
Age* (years)	
1-10	8 (8)
11-20	37 (39)
21-30	21 (21)
31-40	12 (13)
41-50	13 (14)
51-60	5 (5)
BMI (kg/m²)	
≤ 25	20 (21)
> 25	76 (79)
Smoking	
Yes	44 (46)
No	52 (54)
Physical activity	
Yes	21 (22)
No	75 (78)
Comorbidities	
Yes	51 (53)
No	45 (47)
Hurley stage	
I	26 (27)
II	59 (61)
II	11 (12)
IHS-4	
Mild	41 (43)
Moderate	32 (33)
Severe	23 (24)

*Age at diagnosis. n: number.

Discussion

HS is a chronic inflammatory disease that generally affects 2-3 times more women than men[7]. Our study showed a predominance of female patients, in a ratio of approximately 2.8:1. Although the real reasons are not yet well established, it is postulated that genetic, hormonal, behavioral factors (such as hair removal), and smoking habits may be implicated in the higher incidence in women[15,16]. The average age identified in

Table 2. Current treatment used by the patients on their first visit

Treatment	n (%)
Topic resorcinol + oral antibiotic	24 (25)
Topic resorcinol	18 (19)
Adalimumab	16 (17)
Oral antibiotics	16 (17)
Topic antibiotics	3 (3)
Topic resorcinol + metformin	2 (2)
Topic resorcinol + metformin + isotretinoin	2 (2)
Isotretinoin	2 (2)
Oral antibiotics + metformin	1 (1)
Oral corticosteroids	1 (1)
Antiseptic soaps	1 (1)
No treatment	10 (10)
Total patients (n)	96

n: number.

this study remained between the second and third decades, confirming the condition's onset in the post-puberty period. This mean age of onset of symptoms, between 18 and 29 years, has already been reported in different population studies[7,17].

The research also showed which comorbidities were most associated with HS in our specialized outpatient dermatology clinic. Obesity, systemic arterial hypertension, insulin resistance, and dyslipidemia were identified. These clinical conditions, which form metabolic syndrome (MS), are related individually or in combination with HS, and the odds ratio for developing MS among patients with HS ranges from 1.82 to 2.37[18-20]. The relationship between the two conditions seems to be linked to chronic inflammatory pathways. Chronic inflammation in HS leads to the development of insulin resistance and, consequently, endothelial dysfunction, promoting cardiovascular disease[19]. Rodríguez-Zuñiga et al., in an Argentinian study, showed that the risk of MS in patients with HS is higher in hospitals than in outpatient settings[19]. It is suggested that patients admitted to wards or emergency rooms have more severe conditions and more inflammation, thus are more likely to develop MS[19]. On the other hand, another study revealed no relationship between the presence of MS and the severity of HS[21]. Therefore, it is difficult to establish if comorbidities lead to the development of a more severe form of MS or if it is the skin condition that, with inflammation, leads to the occurrence of other diseases.

Obesity contributes substantially to systemic inflammation, which may represent a common pathway between HS and MS. Obese patients have twice the risk of developing MS than those who are overweight[22]. On average, the participants in the study had a BMI consistent with overweight, while 79% of the individuals were above the normal BMI. Gold et al. found an 87.6% incidence of obesity among patients with HS[18]. In addition to disrupting the skin barrier, altering sebum production, and promoting systemic inflammation, obesity forms prominent skin folds. Constant friction in flexural areas results in follicular damage, obstruction, and irritation from sweat retention, resulting in a favorable environment for developing HS lesions[23].

Behavior also influences skin disease occurrence, severity, and refractoriness. Data indicates that between 29% and 39% of patients with HS are smokers and that those with HS are twice as likely to be smokers when compared to controls[19,24,25]. The present study showed significantly higher comparative percentages, with 45.8% of the sample comprising smokers while 78.1% were sedentary. Smoking increases inflammation and accelerates the process of atherogenesis, which can feed back into the components of MS, as well as acting as a factor that hinders the response to treatments for HS[26].

In addition to the skin, HS also impacts patients' quality of life due to the high rates of interference in sexual health, self-image, and interpersonal relationships[27]. Scarring, pain, lack of awareness, and delays in treatment lead to psychological suffering, making patients more susceptible to depression, substance abuse, and suicide[24]. The occurrence of depression or anxiety was reported in 8.3% of the patients in the study, which is higher than the average for the Brazilian population[28]. A North American study revealed an eightfold increase in psychiatric illnesses and drug addiction in patients with HS[24]. In the multivariate analysis, it was not possible to verify an increased incidence of alcohol dependence among patients with HS. Shlyankevich et al. then postulated that when adjusting for psychiatric comorbidities, which are more prone to alcohol abuse, the relationship between alcoholism and HS became less clear[24].

Health professionals generally develop severity scores to facilitate clinical assessment. These clinical scores serve as parameters to classify patients qualitatively and quantitatively and work as a tool to measure the severity of the disease and guide therapy.

The correct diagnosis of HS is usually made between 7 and 10 years from the onset of symptoms[14,29]. General practitioners and primary care physicians are frequently at the forefront of diagnosing and managing HS. Many of them still have scarce knowledge about the disease and its impact, and greater awareness of the disease is needed through continuing medical education[30,31]. The dermatologist is the most appropriate specialist for diagnosing HS, playing an important role in reducing the delay in diagnosis. However, because it is a specialized service with limited access, it is not the patient's first physician[14,30]. Raising awareness of the disease among general practitioners and professionals from other medical specialties, through ongoing medical education programs, is an essential strategy in reducing the patient journey until final diagnosis.

When they are finally diagnosed, these patients present with a more severe condition and report a more significant negative impact on interpersonal relationships. In line with this trend, the patients in the study had, on average, scores that reflected a moderate to severe illness with a significant impact on their quality of life. Individuals with an earlier disease onset reported higher DLQIs ($p = 0.016$), reflecting the more significant social impact of HS in adolescents since this age group is more concerned with aesthetics and body beauty and more prone to psychological distress.

Treatment for HS depends on the disease's severity and the patient's characteristics. Disease's chronicity guidance is vital when starting therapy, as patients must be aware that the aim is the control of the lesions and not the cure. The preference for laser hair removal techniques and clothing made of breathable fabrics are adjuvant behavioral measure in the treatment[3,9,16]. Suggesting smoking cessation, regular physical activity, and weight control to reduce the degree of systemic inflammation comprises a series of interventions that seek to act on the main risk factors for HS[9,32].

The first line of drug treatment, especially in mild cases, involves topical antibiotics, which may be associated with keratolytic substances[9,33]. The next step in moderate/severe or refractory cases involves oral antibiotics, especially clindamycin with rifampicin[3,9]. Four patients in the study used isotretinoin alone or in combination with another therapy. This retinoid is no longer among the medications recommended for HS since evidence suggests that it does not benefit the clinical condition and may even worsen it[34,35]. This situation exemplifies how alternative antibiotic therapy regimens or systemic medications are often prescribed due to a lack of technical knowledge or economic issues.

Immunobiological drugs or small molecules can be used to treat unresponsive cases[3]. Among the immunobiological medications is Adalimumab, an inhibitor of tissue necrosis factor-alpha, with robust evidence of safety and efficacy[36]. Following local guidelines, Adalimumab can be prescribed after refractory use of oral antibiotics and topical medications, which justifies its position as the third most prescribed therapy among the patients in the study[37]. Other immunobiological medications and Janus kinase inhibitors are newer drugs that have also shown encouraging results in their ability to control the disease[38-40]. Increasing the therapeutic arsenal results in safer treatment options with fewer adverse effects, but it also increases the cost of treatment for the health system in resemblance to what occurs in psoriasis[41].

Most of the knowledge about HS comes from studies conducted in European countries and the United States. Latin America, however, has a different population profile, with a higher proportion of black and indigenous people. Thus, to more accurately assess the epidemiological profile of HS and its risk factors in Latin American countries, more studies with larger caseloads and the participation of more research centers are needed. Several factors seem to be related to the degree of severity of the disease in HS, such as the time between the onset of symptoms and definitive diagnosis, and the number of professionals needed before the diagnosis of HS is established. Research evaluating these two variables could help measure the health system's quality in adequately diagnosing and treating patients with this condition and measuring the reflection of these delays in higher severity scores.

Conclusion

HS remains a challenging disease, and this study represents an important contribution to the epidemiological assessment of HS patients in a specialized center in southern Brazil. Our findings were similar to those found in Latin American and global literature. Delays in diagnosis and difficulties in establishing effective treatments to control the disease are factors that lead to more severe conditions. In addition, the management of comorbidities such as obesity, smoking, sedentary, and diabetes is crucial so that treatments with topical agents or immunobiological medications, or surgery can be effective and long-lasting.

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Conflicts of interest

None.

Ethical considerations

Protection of humans and animals. The authors declare that no experiments involving humans or animals were conducted for this research.

Confidentiality, informed consent, and ethical approval. The authors have followed their institution's confidentiality protocols, obtained informed consent from patients, and received approval from the Ethics Committee. The SAGER guidelines were followed according to the nature of the study.

Declaration on the use of artificial intelligence. The authors declare that no generative artificial intelligence was used in the writing of this manuscript.

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