SHORT COMMUNICATION

Similar Levels of Disease Severity Correspond to a Greater Burden of Illness in Women Compared with Men with Hidradenitis Suppurativa

Tonia SAMELA[1,2], Anna DATTOLO[1], Giorgia CORDELLA[2], Valeria ANTINONE[2], Simona MASTROENI[1], Roberta FUSARI[1], Luca FANIA[3] and Damiano ABENI[1]
[1]Clinical Epidemiology Unit, [2]Clinical Psychology Unit, and [3]Dermatology Unit, IDI-IRCCS, Via dei Monti di Creta, 104, IT-00167 Rome, Italy. E-mail: t.samela@idi.it
Accepted Nov 8, 2022; Published Jan 27, 2023
Acta Derm Venereol 2022; 103: adv00856. DOI: 10.2340/actadv.v103.2558

Hidradenitis suppurativa (HS) has a considerable impact on quality of life (QoL), with intense pain and pruritus, high degrees of physical disability (1), and relevant psychiatric comorbidity (2). It is possible to conceptualize dermatological diseases as multifactorial conditions with 3 dimensions: "disease", an organic phenomenon, which can be identified by objective means (3, 4); "illness", the subjective state of patients; and "sickness", defined by how the sociocultural context interprets health statuses (5). Sex-associated differences in HS (6, 7) have been reported, but sex-specific QoL in HS has rarely been addressed. The aim of this study was to assess whether the same clinical severity, estimated through the International HS Severity Score System (IHS4), corresponds to different illness severity in men and women. To the best of our knowledge, this is the first time that a combination of such measures is used to estimate the illness load of HS.

MATERIALS AND METHODS

This cross-sectional, observational study was approved by the Istituto Dermopatico dell'Immacolata IDI-IRCCS Ethical Committee. Data were collected from December 2015 to the end of 2020 at IDI-IRCCS, Rome, Italy. Details of the registry (i.e. inclusion/exclusion criteria, clinical severity measures, and patient-reported outcomes (PROs)), in which consecutive patients were enrolled, have been described in detail elsewhere (8).

The IHS4 was used as a continuous score, with several PROs: Skindex-17 (9), Dermatology Life Quality Index (DLQI) (10), and 12-item General Health Questionnaire (GHQ-12) (11).

Patients who agreed to participate completed the study PRO and the sociodemographic form. A dermatologist recorded the clinical severity and features on standardized case-report forms. Categorical variables were described as number and percentage, and continuous variables were categorized and then described using absolute and relative frequencies; significances were calculated by Fisher's test or Pearson's χ^2 test. Spearman's ρ coefficient was used to measure sex-specific correlations between PROs.

"Illness/disease" ratios were computed, to answer the question: "how much impairment, in terms of illness, is caused by each point of the IHS4?". PRO scores were divided by the IHS4 score (IHS4=0 was recoded as 1). This procedure was performed for both sexes, to detect differences in the impact of disease on illness. The same strategy was applied to each item of the PRO, to compute the item-specific/IHS4 ratio.

Table I. Sociodemographic features of the study sample; Hidradenitis Suppurativa Registry, IDI-IRCCS, Rome, Italy, December 2015–2021

Variable	*n*[a]	%
Overall	452	100.0
Sex		
Men	179	39.6
Women	273	60.4
Age[b]		
< 29 years	359	79.6
> 29 years	92	20.4
Education		
< 9 years	160	35.6
9–13 years	215	47.9
>14 years	74	16.5
Body mass index, kg/m^2		
< 25	160	36.6
25–29.9	162	37.1
>30	115	26.3
Duration[c]		
<10 years	279	61.9
>10 years	172	38.1
International Hidradenitis Suppurativa Severity Score System		
<4	79	17.5
4–10	138	30.5
>11	235	52.0

[a]Totals may vary due to missing data. [b]Cut-off refers to median value derived from age (in years). [c]Years of illness from diagnosis to recruitment to the study.

RESULTS

A total of 452 registered patients were analysed: 273 women (60.4%); 52.0% with severe HS (i.e. IHS4≥11) (**Table I**).

Weak-to-moderate IHS4-PRO correlations were observed for both sexes. For men: GHQ-12, ρ=0.13; Skindex-17 symptoms, ρ=0.27, psychosocial, ρ=0.30; DLQI, ρ=0.34. For women: GHQ-12, ρ=0.04; Skindex-17 symptoms, ρ=0.31, psychosocial, ρ=0.17; DLQI, ρ=0.29.

The Skindex-17 symptoms/IHS4 ratio was 7.84 for men vs 12.80 for women ($p<0.001$); the Skindex-17 psychosocial/IHS4 ratio was 4.96 for men vs 11.44 for women ($p<0.001$). The DLQI/IHS4 ratio was also higher for women: 2.35 vs 1.14 in men ($p<0.001$), as was the GHQ-12/IHS4 ratio: 3.58 for women vs 1.90 for men $p<0.001$).

The item-specific/IHS4 ratio revealed that differences between men and women were statistically significant for each item, except for Skindex-17 item 9 (**Fig. 1**). The largest item/IHS4 ratio differences between women and men were observed in sexual difficulties, embarrassment, pain, and depression.

DISCUSSION

In this study, an increase of a single point of the IHS4 corresponds to vastly different degrees of impairment in

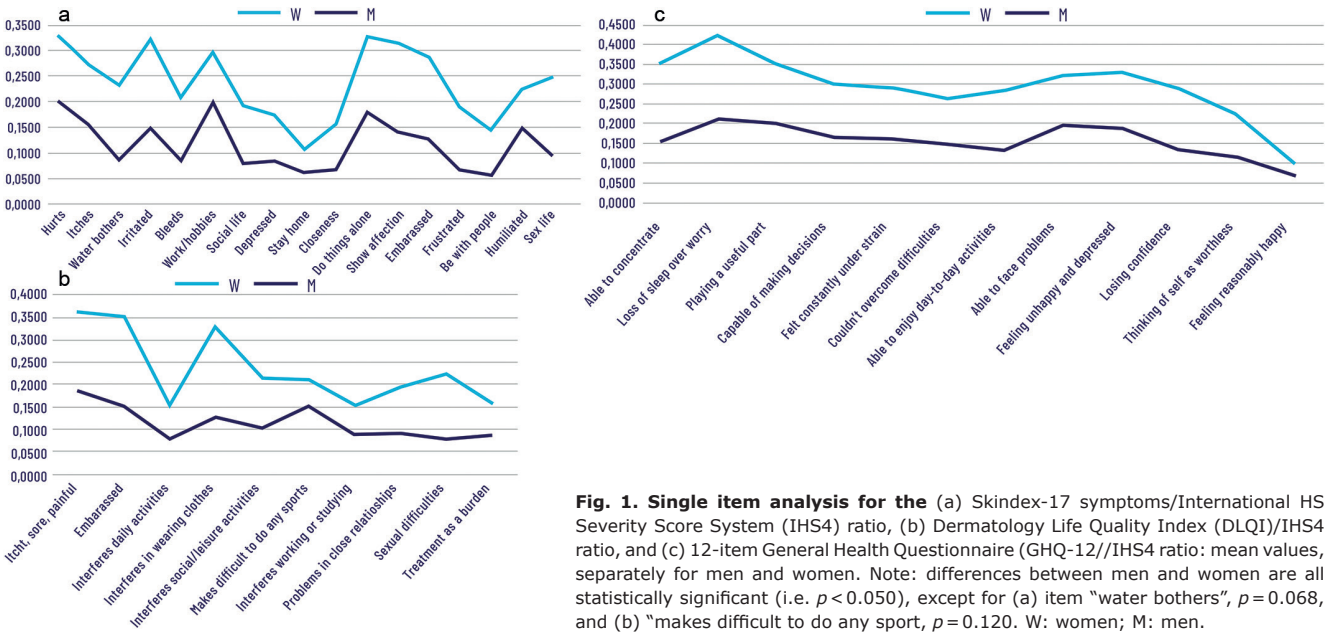

Fig. 1. Single item analysis for the (a) Skindex-17 symptoms/International HS Severity Score System (IHS4) ratio, (b) Dermatology Life Quality Index (DLQI)/IHS4 ratio, and (c) 12-item General Health Questionnaire (GHQ-12//IHS4 ratio: mean values, separately for men and women. Note: differences between men and women are all statistically significant (i.e. $p < 0.050$), except for (a) item "water bothers", $p = 0.068$, and (b) "makes difficult to do any sport, $p = 0.120$. W: women; M: men.

women and men in all the aspects of QoL, highlighting the fact that "objective measures" of disease severity may have substantially different meaning for men and women. More specifically, the same degree of HS severity has greater impact and consequences on the actual well-being of women compared with men.

It is possible that the same disease leads to different illness perceptions among the sexes. Several studies have highlighted the role of psychological factors in illness perception among women and men (12), and health researchers have proposed Stress Theory as an explanatory model for sex differences in health. Female's poorer health could derive from combinations of employment and family roles. It is plausible that these sociological factors may impact patients' sickness perception. Moreover, women are also often socialized to want to be thin and attractive (13). It is plausible that psychological factors mediate the effect of social roles and positions on patient's illness perception (1).

The wide disparity in sex-specific disease perception is further highlighted by the single-item analysis, which revealed a strong discrepancy in illness/disease ratio scores between men and women, with women invariably showing the higher impact of illness. This pattern was consistently confirmed through all PROs and, in particular, for shame/embarrassment, introversion, isolation, and withdrawal experienced by women. For men, the greatest impact of disease concerns everyday life activities, as men seem to be more focused on operational thinking and action, and identifying their self-image in relation to their actions. Women, instead, seem to focus their self-perception on the relational and social consequences of their health problems. However, sex roles are culture-specific, hence these results should be transferred with caution to different geographical areas.

In conclusion, this study is innovative, in that it shows sex-related differences in illness and sickness of HS while accounting for clinical severity. In addition, the PROs/IHS4 measure offers manageable and directly interpretable information on the actual situation of the individual patient. It could be used in clinical practice to evaluate individual patients.

While these results should be confirmed in other cultures, it could now be hypothesized that different cut-offs for clinical severity of HS may be warranted for men and women.

ACKNOWLEDGEMENT

This work was supported in part by the "Progetto di Ricerca Corrente 2021 – RC4.3" of the Italian Ministry of Health, Rome, Italy.

The authors have no conflicts of interest to declare.

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