Research Letters

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Female sex and younger age are associated with hidradenitis suppurativa diagnostic delay

Keywords: gender and sex differences, hidradenitis suppurativa, public health

Dear Editors,

Hidradenitis suppurativa (HS) is a chronic, inflammatory skin disease. The time from onset of symptoms to diagnosis -termed diagnostic delay- is 7–10 years on average.[1] Diagnostic delay may delay disease course-altering treatments and comorbidity management. We conducted a cross-sectional study to determine if demographic characteristics are associated with HS diagnostic delay.

We retrospectively reviewed the medical records of HS patients treated at a single center from May 2016 and December 2022. Eligible participants had at least 2 HS ICD codes. Data on sex, race, residence zip code, age at the self-reported date of HS symptom onset, and diagnosis were collected. Residence zip code was linked to publicly available US government data to approximate median income by census tract and number of dermatologists per county. Data were summarized using medians and interquartile ranges and frequencies. We used univariate linear regression models to estimate associations between demographic characteristics and diagnostic delay. A multivariable model was constructed from characteristics significant at the 0.05 level in univariate analysis.

Complete demographic data were available for 431 of 514 HS patients who were racially diverse and majority female. (Table 1) Median (interquartile ranges) age at onset was 18 years (14,26). Median diagnostic delay was 5 years (1,10). Age was inversely associated with diagnostic delay in univariate analysis (coeff = −0.22 [−0.30, −0.15], $P < .001$) and multivariate analysis (coeff = −0.21 [−0.28, −0.13], $P < .001$). Male patients had a diagnostic delay of 2 years compared to 5 years for female patients in univariate (coeff = 2.79 [0.88, 4.70], $P = .004$) and multivariate analysis (coeff = 1.91 [−0.03, 3.85], $P = .05$). White patients had longer diagnostic delays than nonwhite patients (White 5 years, Black: 3, Asian: 3, Hispanic/Latino: 5), however, this difference was not significant (Table 2).

Our cohort had a median income of $78,173, compared to the national median income of $70,784.[2] We found no significant correlations between diagnostic delay in either median household income or the density of dermatologists in the county of residence. Much of our cohort lived in high health literacy areas with a high density of dermatologists, which may contribute to these paradoxical findings.

This study found that female sex and younger age were significantly associated with diagnostic delay in HS. The reasons for this finding are likely multifaceted, include previously reported factors such as limited disease awareness, stigma associated with intertriginous lesions, and gender differences in healthcare utilization.[3,4]

Although not significant, the White race was associated with diagnostic delay. Because HS is more prevalent in African-American populations, providers may have decreased suspicion of this condition in White populations. We also report a reduced median diagnostic delay of 5 years compared with historical reports of 7–10 years in HS populations,[5] which may be due to increased HS awareness and/or local health literacy factors.

While this investigation is limited by single-center design, it provides insights into factors associated with diagnostic delay. Prospective multicenter studies with larger cohorts are needed to confirm and understand relationships between demographic and disease features and diagnostic delay and to guide timely diagnosis.

Conflicts of interest

H.B.N. has received grant support from AbbVie; consulting fees from 23andme, AbbVie, Aristea Therapeutics, Nimbus Therapeutics, Medscape, Sonoma Biotherapeutics, DAVA Oncology, Boehringer Ingelheim, Union Chimique Belge's (UCB) and Novartis; investigator fees from Pfizer; and holds shares in Radera, Inc. She is also an Associate Editor for JAMA Dermatology and a board member of the Hidradenitis Suppurativa Foundation. The other author has no conflicts of interest to disclose.

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What is known about this subject in regard to women and their families?

- Hidradenitis Suppurativa (HS) is a chronic, debilitating skin disease.
- HS disproportionately affects women.

What is new from this article as messages for women and their families?

- Female gender and younger age are associated with longer diagnostic delays in HS.

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Table 1

Characteristics of HS cohort (*N* = 431)

Characteristic	*n*	(%)	Median diagnostic delay (years)	IQR
Age at onset, median (IQR)			18	(14, 26)
Age at diagnosis, median (IQR)			27	(20, 35)
Diagnosis delay in years, median (IQR)			5	(1, 10)
Sex				
Male	110	(25.5)	2	(0, 7)
Female	319	(74.0)	5	(2, 12)
Missing	2	(0.5)		
Race/ethnicity				
White	116	(26.9)	5	(2, 14)
Black	51	(11.8)	4	(0, 8)
Asian	25	(5.8)	3	(0, 7)
Hispanic	200	(46.4)	5	(1, 11)
Mixed/Other	24	(5.6)	3	(1, 8)
Missing	15	(3.5)		
Income (n = 395)				
Median (IQR)	78,173	(54,688, 113,657)		
Missing	36			
Dermatologist density per county	4.94	(4.19, 14.3)		

HS, hidradenitis suppurativa; IQR, interquartile ranges.

Table 2

Regression analysis

Characteristic	Coefficient	95% CI	*P* value
Univariate linear regression analysis			
Age at onset	−0.22	(−0.30 to −0.15)	<.001
Sex			
Male	Ref		
Female	2.79	(0.88–4.70)	.004
Race/ethnicity[a]			
White	Ref		
Nonwhite	−1.86	(−3.79–0.07)	.06
Income (per 10 K)	0.02	(−0.18–0.23)	.82
Dermatologist density per county	0.07	(−0.07–0.22)	.31
Multivariable linear regression analysis			
Age at onset	−0.21	(−0.28 to −0.13)	<.001
Sex			
Male	Ref		
Female	1.91	(−0.03–3.85)	.05
Race/ethnicity[a]			
White	Ref		
Nonwhite	−1.13	(−3.00–0.74)	.23

CI, confidence interval.

[a] Race/ethnicity dichotomized as White versus Other.

Study approval

The study was reviewed and approved by the UCSF Institutional Review Board. IRB #16-19770.

Author contributions

All authors participated in the study design, data acquisition, analysis and interpretation of the data, drafting and revising the manuscript, and final approval.

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Fatuma-Ayaan B. Rinderknecht, MS[a]

Haley B. Naik, MD, MHSc[b,*]

[a] *San Francisco School of Medicine, University of California, San Francisco, California*

[b] *Department of Dermatology, University of California, San Francisco, San Francisco, California*

** Corresponding author.*

E-mail address: haley.naik@ucsf.edu (H. B. Naik).