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Spironolactone in hidradenitis suppurativa: a single-center

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Spironolactone in hidradenitis suppurativa: a single-center

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Hidradenitis suppurativa (HS) is a chronic skin condition that disproportionately affects women of childbearing age. Although oral spironolactone is used to treat women with HS, there are limited published data regarding its efficacy. Herein, we conducted a retrospective review of spironolactone use in patients with HS who presented to an HS specialty clinic at an academic center.

HS patients who presented to the University of California, Los Angeles (UCLA) HS clinic between January 2015 and December 2021 were identified using international classification of disease-9 (705.83) and international classification of disease-10 (L73.2) codes. Female patients were included in the study if they were ≥18 years of age, prescribed spironolactone, and had sufficient follow-up. Data were collected on demographics, comorbidities, medications for HS, treatment response (assessed at 3 and 6 months), and adverse effects. Wherever available, physician-assessed response to treatment (documented in the chart as whether HS improved or not compared to the prior visit) was utilized, otherwise, patient-assessed response was used. A χ^2 test was used for comparative statistics between reports of menstrual HS flares, irregular menses, polycystic ovarian syndrome (PCOS), and body mass index (<30 vs ≥30) and response to spironolactone. This study is Institutional Review Board-exempt at UCLA.

A total of 53 female patients were included in the study (Table 1). Mean spironolactone dose was 104.3 milligrams (mg)/day (range 50-200 mg/day). However, 84.1% (37/44) and 81.8% (27/33) had a documented improvement in their HS at 3 and 6 months postinitiation of spironolactone, respectively. Also, 50.9% of patients were on a concomitant oral contraceptive pill.

There were no significant differences in response to treatment based on body mass index (≥30 or <30) ($P = .94$, $P = 1.0$) or based on reports of menstrual HS flares ($P = .075$, $P = .19$), irregular menses ($P = .96$, $P = .56$), or PCOS ($P = .51$, $P = .59$) at either 3 or 6 months, respectively. Five patients discontinued spironolactone use due to cramping and dizziness, muscle spasms, heavy bleeding, gastrointestinal upset, and one for an unknown reason.

Overall, spironolactone led to improvement in HS for female patients, including in those who did not endorse perimenstrual flares or have PCOS. Reported adverse events were mild and infrequent.

The role of hormones in the pathophysiology of HS is unclear. Although serum androgen levels in patients with HS are generally normal, in-situ conversion of androgens to dihydrotestosterone may contribute to follicular occlusion and inflammation.[1] Moreover, increased levels of insulin and insulin-like growth factor 1 in patients with HS may result in prolonged binding between androgens and their receptors.[2] Patients have also reported changes in HS disease activity based on menses and pregnancy.[3]

A 2019 retrospective study of 46 patients described significant disease improvement in pain, inflammatory lesions, and HS-Physician Global Assessment scores after an average follow-up period of 7.1 months.[4] Similarly, a 2020 retrospective cohort study of 26 patients on spironolactone found that average lesion count and dermatology life quality index improved after a 6-month mean duration of follow-up.[5] Our study contributes to the literature by demonstrating that spironolactone may be considered for female HS patients even in the absence of patient-reported HS menstrual flares.

Study limitations include a small sample size, a single-center study with the potential for selection bias, the study's retrospective nature, the lack of a control group, and the lack of a granular HS assessment outcome score. Moreover, the use of concomitant medications may have influenced treatment outcomes. Large prospective studies are needed to identify predictors of treatment response and optimal dosing for spironolactone therapy for HS.

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

- Hidradenitis suppurativa (HS) disproportionately affects women of childbearing age in many Western nations, including the United States.
- Oral spironolactone is an antiandrogenic drug that is used to treat women with HS, however, there is a paucity of data regarding the efficacy of spironolactone for patients with HS.

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

- In this single-center retrospective review, 84.1% (37/44) and 81.8% (27/33) of women treated with spironolactone had improvement in their HS after 3 and 6 months, respectively.
- There was not a significant difference in response to treatment based on the presence of perimenstrual HS flares or polycystic ovarian syndrome.
- More research is needed to identify the characteristics of patients who may benefit most from spironolactone in HS.

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Table 1

Characteristics of female patients treated with spironolactone[a]

Characteristics	*n* (%)
Age, mean ± SD (range) (n = 53)	31 ± 9.1 (18-56)
Age at HS onset, mean ± SD (range) (n = 41)	19.2 ± 9.0 (7-52)
Age at HS diagnosis, mean ± SD (range) (n = 42)	25.1 ± 7.9 (12-46)
Body mass index, mean ± SD (range) (n = 42)	32.4 ± 9.2 (19-60)
Ethnicity (n = 46)	
White	17 (37.0)
Black	14 (30.4)
Hispanic	10 (21.7)
Asian	3 (6.5)
Bi-racial	2 (4.3)
Hurley stage (n = 52)	
Stage IIStage IIIStage III	10 (19.2)|33 (63.5)|9 (17.3)
Comorbidities (n = 53)	
Acne	27 (50.9)
Obesity	24 (45.3)
Anemia	20 (37.7)
Excessive hair growth	10 (18.9)
Polycystic ovarian syndrome	4 (7.5)
Menstrual history (n = 53)	
Peri-menstrual HS flares	30 (56.6)
Irregular menstrual cycles	20 (37.7)
Concomitant medications (n = 53)	
Antibiotics	31 (58.5)
Doxycycline	17 (32.1)
Clindamycin	12 (22.6)
Other systemic antibiotics[b]	14 (26.4)
Oral contraceptive pills	27 (50.9)
Drospirenone and ethinyl estradiol	15 (28.3)
Norethindrone ± ethinyl estradiol	6 (11.3)
Norgestimate and ethinyl estradiol	5 (9.4)
Levonorgestrel and ethinyl estradiol	2 (3.8)
Desogestrel and ethinyl estradiol	1 (1.9)
Other birth control methods[c]	10 (18.9)
Other medications[d]	9 (17.0)

HS, hidradenitis suppurativa; N, number; SD, standard deviation.

[a]Adverse events reported: irregular bleeding (*n* = 3); lethargy, limb heaviness, shortness of breath (*n* = 1); mental fogginess, confusion (*n* = 1); breast swelling/tenderness (*n* = 1); urinary tract infection (*n* = 1); dehydration, muscle spasm (*n* = 1); stomach upset (*n* = 1); dizziness, cramping (*n* = 1); and night sweats (*n* = 1).

[b]Other systemic antibiotics: cephalexin (*n* = 4); minocycline (*n* = 3); metronidazole (*n* = 2); cotrimoxazole, dapsone, levofloxacin, moxifloxacin, and intravenous ertapenem (*n* = 1 each).

[c]Other birth control methods: medroxyprogesterone acetate (*n* = 4); levonorgestrel intrauterine device and etonogestrel implant (Nexplanon) (*n* = 3 each).

[d]Other medications: adalimumab (*n* = 4); apremilast and secukinumab (*n* = 2 each); infliximab and guselkumab (*n* = 1 each).

Conflicts of interest

The authors made the following disclosures: M.H. has been an investigator for Celgene and Amgen. V.Y.S. is on the board of directors for the Hidradenitis Suppurativa Foundation (HSF), an advisor for the National Eczema Association, is a stock shareholder of Learn Health and has served as an advisory board member, investigator, speaker, and/or received research funding from Sanofi Genzyme, Regeneron, AbbVie, Genentech, Eli Lilly, Novartis, SUN Pharma, LEO Pharma, Pfizer, Incyte, Boehringer Ingelheim, Alumis Aristea Therapeutics, Menlo Therapeutics, Dermira, Burt's Bees, Galderma, Kiniksa, UCB, Target-PharmaSolutions, Altus Lab/cQuell, MYOR, Polyfins Technology, GpSkin and Skin Actives Scientific. J.L.H. is on the Board of Directors for the Hidradenitis Suppurativa Foundation, has served as a consultant for AbbVie, Aclaris, Boehringer Ingelheim, Novartis, as a speaker for AbbVie, and as an investigator for Amgen, Aristea, Boehringer Ingelheim, and Incyte. All other authors report no conflicts of interest.

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Study approval

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Author contributions

RM: Participated in writing, reviewing, and editing this manuscript for this project. SP: Participated in reviewing and editing this manuscript and analyzing data for this project. TS: Participated in analyzing data for this project. MH: Participated in reviewing and editing this manuscript. VYS: Participated in reviewing and editing this manuscript and the conceptualization and administration of this project. JLH: Participated in reviewing and editing this manuscript and the conceptualization and administration of this project.

Data availability

Data are available upon request from the authors.

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