



Published in final edited form as:

J Am Acad Dermatol. 2015 October ; 73(4): 705–706. doi:10.1016/j.jaad.2015.06.063.

Demographics of women with female pattern hair loss and the effectiveness of spironolactone therapy

Famenini Shannon, BS^{1,*}, Slaughter Christa, BS^{1,*}, Duan Lewei, MS², and Goh Carolyn, MD³

Famenini Shannon: ffamenini@gmail.com; Slaughter Christa: cslaught@mednet.ucla.edu; Duan Lewei: LDuan@mednet.ucla.edu; Goh Carolyn: cgoh@mednet.ucla.edu

¹David Geffen School of Medicine at the University of California, Los Angeles

²UCLA David Geffen School of Medicine, Department of Medicine, Statistical Core

³Department of Medicine, Division of Dermatology, UCLA Medical Center, Los Angeles

To the Editor

Female pattern hair loss (FPHL) affects approximately 40% of women by age 50, and management can be challenging. We aimed to evaluate the effectiveness of spironolactone therapy in women with FPHL.

Following approval by the institutional review board (IRB) at the University of California, Los Angeles, a retrospective study of 166 female patients diagnosed with FPHL between September 2010 and June 2012 was performed. Patient and physician assessments of hair loss at baseline and follow-up along with treatment, medical history and lab results were abstracted from patient charts.

Following additional IRB approval, a survey study was performed. Sixty-four patients (ages 20–88) with FPHL who visited the UCLA hair clinic November 2012 to June 2013, reported the severity of their disease, history of thyroid disease, and presence or absence of acne or hirsutism. Patient assessment of hair loss, which correlated closely with physician assessment, was based on the Women's Alopecia Severity Index.¹ Patients also reported their usage and evaluation of the effectiveness of spironolactone, which was consistent with patients' records. Statistical analysis was performed using the Wilcoxon rank sum test with continuity correction and Wilcoxon two-sample test. Statistical significance was determined to be $p < 0.05$.

In the retrospective study, 8.2% of patients had high total testosterone ($n=5/61$), 2% had high free testosterone ($n=1/51$), 8.9% had high DHEAS ($n=5/56$), and 15.75% of patients

Corresponding author: Carolyn Goh, 200 Medical Plaza, Suite 450, Los Angeles, CA 90095, cgoh@mednet.ucla.edu, Phone: 310-794-4836.

*Co-first authors

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Conflicts of Interest: none

The UCLA IRB approved both the retrospective review study and the survey study.

were hypothyroid (n=23/146). Nineteen patients were on spironolactone with follow-up ranging from 7 to 20 months. Results are shown in Table 1. No patients reported worse thinning while on spironolactone.

In the survey study, 31.25% of patients were hypothyroid (n=20/64). No significant association was found between FPHL severity and thyroid disease (p= 0.62) or presence of acne and facial hair (p=0.77). Twenty patients were on spironolactone and their assessments are shown in Table 1. There was no correlation between dose and response in either study (mean dose= 110mg). No significant association was found between response to spironolactone therapy and being on an oral contraceptive pill (p=0.7), but patients with hirsutism or acne showed a significantly better response to spironolactone (p=0.05).

Few patients had high androgen levels, consistent with the literature.² A higher prevalence of hypothyroidism was seen in our patient population, in fact six times higher than in the general population.³ Hypothyroidism is associated with lower levels of sex hormone binding globulin, which may result in higher levels of free androgens that can exacerbate FPHL.⁴

Combining data from our studies, 74.3% of patients receiving spironolactone reported stabilization or improvement of their disease (n=29/39). Side effects were consistent with product label. Although the study was limited by sample size and variable treatments, the results corroborated an earlier study showing no progression or improvement in 88% of 80 women receiving anti-androgen therapy.⁵ Interestingly, our patient-reported outcomes were similar to those measured by photos and physician assessment, and may be a valid and relevant measure of efficacy.⁵ Spironolactone competitively inhibits androgen binding to intracellular receptors⁵ and may be an effective treatment for FPHL, especially among patients with signs of hyperandrogenism.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

Funding Sources:

The study was supported by the Short Term Training Program (STTP), a UCLA medical student research program that provides stipends to medical students to perform research in the summer between their 1st and 2nd years of medical school. Christa Slaughter received this funding to perform the retrospective review study.

Lewei Duan's statistical contribution was funded through the NIH/NCATS/UCLA CTSI Grant UL1TR000124.

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Table 1
Patient Assessments on Spironolactone

Patients with FPHL being treated with spironolactone assessed their response.

	Retrospective Study	Survey Study
Worse Thinning	0	15% (n=3/20)
No Change	26% (n=5/19)	45% (n=9/20)
Mild Improvement	42.1% (n=8/19)	20% (n=4/20)
Increased Thickness	31.6% (n=6/19)	10% (n=2/20)
No Response	N/A	10% (n=2/20)

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