Dermatology Practical & Conceptual

Low Risk of Hypotension in Women Treated with Spironolactone for Hair Loss

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Key words: Spironolactone, Hypotension, Blood pressure monitoring, Androgenetic alopecia, Hair loss treatment, Dermatology research

Citation: Hill RC, Wang Y, Shaikh B, et al. Low Risk of Hypotension in Women Treated with Spironolactone for Hair Loss. *Dermatol Pract Concept*. 2025;15(3):5337. DOI: https://doi.org/10.5826/dpc.1503a5337

Accepted: April 30, 2025; **Published:** July 2025

Funding: This investigation was supported by the National Center for Advancing Translational Sciences (NCATS) grant # UL1-TR-002384 of the Clinical and Translational Science Center at Weill Cornell Medical College.

Competing Interests: None.

Authorship: All authors have contributed significantly to this publication.

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Introduction

Spironolactone, an antihypertensive medication, is used off-label for androgenetic alopecia (AGA) treatment. A retrospective study of 23 female AGA patients demonstrated no statistically significant impact of oral spironolactone on systolic or diastolic blood pressure (BP) [1]. Similarly, our retrospective study of 1173 women taking spironolactone for acne, alopecia, or hirsutism found that only 0.26% had hypotension requiring a therapy change [2]. We analyzed a patient subgroup prescribed spironolactone specifically for hair loss for potential BP changes, hypothesizing that spironolactone does not cause significant hypotension.

Findings

In our previous study, we collected demographics and BP measurements from females taking spironolactone for acne, alopecia, or hirsutism in the period 2006-2021 and excluded patients with prior hypertension diagnoses and/or taking renin-angiotensin-aldosterone system modulators [2]. Here, we included only patients taking spironolactone for alopecia. We compared baseline BP to follow-up BP recorded ≥1-day after spironolactone course start date, with absolute hypotension defined as systolic BP<90.

We identified 185 female patients prescribed spironolactone for alopecia, with mean age of 41-years (range 19–76), 64% <45-years, and 34.2% non-white patients (Table 1). Median maximum daily dose was 100 mg (Q1,Q3=50,100), with range 25—200 mg (Table 1). Of 185 patients, five developed hypotension. Age and maximum daily dose were not hypotension predictors (both $P>0.05$). The average duration from initial BP measurement to first follow-up measurement was 123.5-days (range=1–1065 days).

Mean baseline systolic BP was 113.6 mmHg, with mean first follow-up systolic BP 112.72, representing a

Table 1. Patient Characteristics.

Patient Characteristics	Overall, N=185	Hypotension Status		p-value[1]
		No, N=180	Yes, N=5	
Age on course start date, years				0.5
Median (IQR)	39 (30,51)	39 (30,51)	41 (33,62)	
Mean (SD)	41 (13)	41 (13)	46 (16)	
Range	19–76	19–76	29–63	
Age Group, years n(%)				>0.9
<25	13 (7%)	13 (7%)	0 (0%)	
25-34	62 (34%)	60 (33%)	2 (40%)	
35-44	43 (23%)	42 (23%)	1 (20%)	
45 or older	67 (36%)	65 (36%)	2 (40%)	
Race Groups, n(%)				>0.9
Asian	16 (10%)	16 (10%)	0 (0%)	
Black/African American	7 (4%)	7 (4%)	0 (0%)	
Other	33 (20%)	33 (21%)	0 (0%)	
White	106 (65%)	103 (65%)	3 (100%)	
Ethnic Groups, n(%)				>0.9
Hispanic/Latin/SpanishOrigin	21 (15%)	21 (15%)	0 (0%)	
Not Hispanic/Latin/SpanishOrigin	118 (85%)	115 (85%)	3 (100%)	
Max Daily Dose, mg				0.2
Median (Q1,Q3)	100 (50,100)	100 (50,100)	100 (100,200)	
Mean (SD)	99 (51)	98 (50)	135 (60)	
Range	25,200	25,200	75,200	
Max Daily Dose Group, mg n(%)				0.2
≤50	60 (32%)	60 (33%)	0(0%)	
75-100	35 (19%)	33 (18%)	2 (40%)	
125-200	90 (49%)	87 (48%)	3 (60%)	

[1]Wilcoxon rank sum test; Fisher's exact test; Pearson's chi-squared test.

non-significant mean change of -0.88 mmHg (*P*=0.34). Mean baseline diastolic BP was 72.68 mmHg, with mean first follow-up diastolic BP 72.62, representing a non-significant mean change of -0.0 mmHg (*P*=0.94). Maximum daily dose of spironolactone did not significantly affect mean change in systolic or diastolic BP (Table 2), even at higher doses (100-200 mg) that are typically initiated for AGA (*P*>0.05) [3].

We showed that spironolactone-treated alopecia patients did not have significant BP changes, even at doses ≥100 mg, consistent with Desai et. al., demonstrating small effect size of spironolactone on systolic BP (0.12). [1] Desai et. al reported a mean age of 39.74-years but did not describe range. We included women ages 19–76, supporting spironolactone's safety profile across broad age ranges.

Conclusion

In a retrospective study of 79 women treated with spironolactone (50-200 mg) for AGA, hypotension symptoms, including dizziness/lightheadedness, were infrequent (n=13, 17%) and uncommonly led to drug discontinuation (3.8%). [4] In a systematic review including 286 spironolactone-treated AGA patients, serious side effects, including hypotension, affected <2% of patients. [5] Our findings corroborate other studies showing that hypotension is infrequent with spironolactone treatment of alopecia.

Limitations include our retrospective design, lack of information about clinical symptoms, and having potentially included non-AGA patients.

In sum, our findings corroborate a smaller study of women taking oral spironolactone for AGA, highlighting that

Table 2. Comparison of Changes in Systolic and Diastolic BP from Baseline BP to First Follow-Up BP Measurement.

Maximum Daily Dose Group (mg)	Age Group	Number of Patients, n	Mean Baseline Systolic BP	Mean Follow-Up Systolic BP	Mean Change Systolic BP	Mean Baseline Diastolic BP	Mean Follow-Up Diastolic BP	Mean Change Diastolic BP	P Value Systolic	P Value Diastolic
Summary statistics										
		185	113.6	112.72	-0.88	72.68	72.62	-0.05	0.34	0.94
Summary statistics (by dose and age group)										
≤50	<25	7	108.29	106.71	-1.57	71.00	71.29	0.29	0.70	0.95
≤50	25-34	12	114.58	112.50	-2.08	75.92	73.33	-2.58	0.52	0.54
≤50	35-44	14	111.93	109.36	-2.57	72.00	70.00	-2.00	0.39	0.46
≤50	≥45	27	114.52	111.41	-3.11	72.48	70.63	-1.85	0.24	0.29
75-100	<25	3	104.33	110.33	6.00	68.33	69.67	1.33	0.62	0.86
75-100	25-34	33	112.97	112.88	-0.09	73.24	72.94	-0.30	0.96	0.87
75-100	35-44	22	115.91	115.41	-0.50	74.45	75.68	1.23	0.85	0.52
75-100	≥45	32	112.94	116.31	3.38	72.28	73.72	1.44	0.12	0.33
125-200	<25	3	111.33	102.00	-9.33	63.67	65.67	2.00	0.14	0.58
125-200	25-34	17	114.59	109.88	-4.71	71.12	72.65	1.53	0.26	0.53
125-200	35-44	7	111.00	111.14	0.14	72.43	72.14	-0.29	0.97	0.95
125-200	≥45	s8	120.00	118.50	-1.50	74.00	74.00	0.00	0.81	1.00

Average time elapsed between spironolactone initiation and first follow-up BP measurement: 123.49 days (range 1 day to 1065 days).
Average time elapsed between baseline BP to first follow-up BP measurement: 138.55 days (range 1 day to 1074 days).
BP = blood pressure.

hypotension is uncommon. Patients with alopecia can be assured that even high doses of spironolactone are unlikely to cause clinically significant BP changes. Future studies are needed to evaluate the safety of spironolactone treatment in alopecia patients who are already taking antihypertensive medications.

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