SKIN

RESEARCH LETTER

Blood Pressure Monitoring for Minoxidil Therapy in Alopecia Patients

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Low-dose oral minoxidil (LDOM) has been shown to have no significant effect on blood pressure (BP) at 24 hours following the first dose of 5mg oral minoxidil in men with androgenetic alopecia; however, it remains unclear if LDOM impacts BP in other populations and during prolonged therapy.[1]

To further investigate the effect of LDOM on BP, we utilized the electronic medical record at our institution to retrospectively identify patients prescribed LDOM from 2019 to 2022 for any form of alopecia (n=285). We included subjects with a baseline BP (defined as within 3 months prior to LDOM initiation) and a BP recorded at 5 months (+/- 6 weeks) who were maintained on a stable dose over that timeframe. These intervals were chosen because patients with alopecia typically follow-up at 4- to 6-month intervals at our institution. Records lacking baseline or follow-up BP measurements were excluded.

A total of 89 patients (16 M, 73 F) were included in this analysis, with a mean follow-up time of 5.0 months (SD 23 days). The average age of all subjects was 53.5 years old (range 18-78), the majority of which were diagnosed with a non-scarring alopecia (n=65) and whose race was specified as White (n=59). Demographic information, alopecia subtype, presence of comorbid hypertension, and LDOM dosage are depicted in **Figure 1**. There was a non-significant reduction in average systolic (-1.55 mmHg; *P*=0.12) and average diastolic (-1.61 mmHg; *P*=0.08) BP between baseline and 5-month follow-up visits. Subgroup analyses, including alopecia subtype (scarring vs. non-scarring), comorbid hypertension (normotensive vs hypertensive), and LDOM dosage (1.25 vs 2.5mg daily) failed to demonstrate a significant difference in mean change of BP **(Figure 2)**. Additionally, simple linear regression models revealed no relationship between age and changes in systolic (β *coefficient*=0.03; *P*=0.76) nor diastolic (β *coefficient=0.02*; *P*=0.88) BP.

Given the history of minoxidil as an antihypertensive agent, several studies have sought to determine the safety and efficacy of its off-label use for alopecia.[2] Our study adds to this limited data and confirms the absence of significant change in BP in those receiving LDOM therapy.[3,4] Additionally, our data clarifies that comorbid hypertension, alopecia subtype, and age do not significantly impact LDOM's effect on BP. Notably, both doses of LDOM (1.25 and 2.5mg daily) examined here failed to influence BP. The small size of

Table 1. Patient demographics

Patient Demographics		
	n	%
Total	89	
Age		
Mean	53.5	
Median	57	
Range	18-78	
Gender		
Female	73	82%
Male	16	18%
Race		
White	59	66%
Asian	19	21%
African American	3	3%
Other/Unknown	8	9%
Comorbid HTN*		
Yes	21	24%
No	68	76%
Minoxidil Dosage		
0.625	1	1%
1.25	28	31%
2.5	58	65%
5	2	2%
Alopecia Subtype		
Scarring	24	27%
Non-scarring	65	73%

The majority (85%) of patients with comorbid hypertension were on anti-hypertensive agents during the timeframe of this study. No anti-hypertensive agents were added or modified for any patient during this study's timeframe.

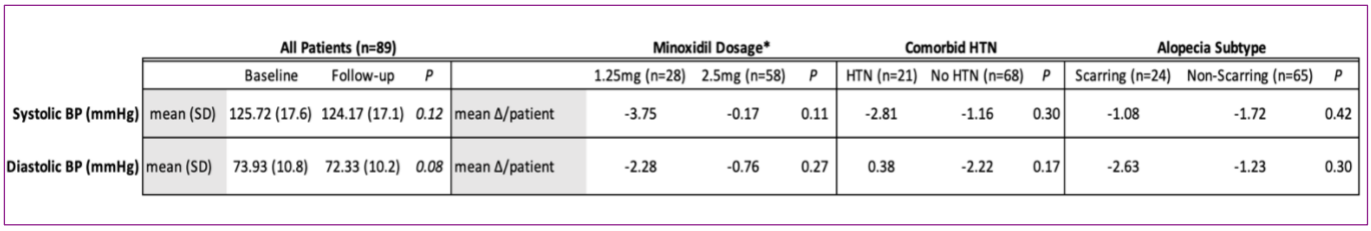

Figure 2. Comparison of mean blood pressure before and after minoxidil (left). Subgroup analyses of mean change in blood pressure per patient before and after minoxidil (right). Three

patients in our study were prescribed a minoxidil dosage other than 1.25 or 2.5mg daily and were thus excluded from minoxidil dosage subgroup analysis.

our 5mg cohort can be explained by our predominantly female patient population who prefer treatment with 1.25-2.5mg daily, while 5mg is the dose typically prescribed to men.

In summary, our data supports previous literature demonstrating that daily LDOM prescribed for alopecia does not significantly affect BP. This study is limited by small sample size and retrospective design that precludes standardization for BP measurement. As LDOM continues to be increasingly prescribed for alopecia, larger prospective studies are warranted to evaluate the long-term impact of this therapy on BP, with particular focus on the role of comorbidities, patient demographics, and dosages.

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References:

1. RJimenez-Cauhe J, Saceda-Corralo D, Hermosa-Gelbard A, et al. Before-after study with 24-hour ambulatory blood pressure monitoring after the first dose of 5 mg oral minoxidil. *J Am Acad Dermatol*. 2022;87(6):e235-e237. doi:10.1016/j.jaad.2022.06.1205
2. Vañó-Galván S, Pirmez R, Hermosa-Gelbard A, et al. Safety of low-dose oral minoxidil for hair loss: A multicenter study of 1404 patients. *J Am Acad Dermatol*. 2021;84(6):1644-1651. doi:10.1016/j.jaad.2021.02.054
3. Panchaprateep R, Lueangarun S. Efficacy and Safety of Oral Minoxidil 5 mg Once Daily in the Treatment of Male Patients with Androgenetic Alopecia: An Open-Label and Global Photographic Assessment. *Dermatol Ther (Heidelb)*. 2020;10(6):1345-1357. doi:10.1007/s13555-020-00448-x
4. Perera E, Sinclair R. Treatment of chronic telogen effluvium with oral minoxidil: A retrospective study. *F1000Res*. 2017;6:1650. doi:10.12688/f1000research.11775.1