Oral minoxidil improves background hair thickness in lichen planopilaris

To the Editor: Lichen planopilaris (LPP) is the second most common primary cicatricial alopecia,[1] and its treatment is challenging. A number of agents have been used to stop disease progression, including corticosteroids (topical, intralesional, and systemic), antimalarial drugs, doxycycline, pioglitazone, and systemic immunosuppressants. Another goal of treatment is to improve hair thickness in unaffected areas of the scalp to better conceal the areas of hair loss. Although platelet-rich plasma[2] and low-level laser light therapy[3] have been reported to promote hair growth, topical minoxidil is the most frequently used adjunctive therapy. However, the use of topical minoxidil can be complicated by irritant contact dermatitis in an already inflamed scalp. The aim of our study was to describe the effectiveness and safety of low-dose oral minoxidil (LDOM) in patients with classical LPP.

We retrospectively reviewed the records of all patients with LPP treated with LDOM in 2 Spanish and 1 Australian specialist hair clinics. Only patients who had been treated with LDOM for 6 months or longer were included. LDOM was started at 0.25 to 1 mg, and the dose was up-titrated according to response and tolerability. LPP diagnosis was based on clinical and trichoscopic features (loss of follicular openings, peripilar casts, and perifollicular erythema). Doubtful cases were confirmed histologically. LPP was subdivided as either patchy (discrete areas of scarring alopecia) or diffuse (widespread scalp hair thinning and/or erythema with supporting trichoscopic and histologic features).[4] Patients with frontal fibrosing alopecia or fibrosing alopecia in a pattern distribution were excluded. To reduce the effect of confounding variables, patients with any changes in concomitant treatments in the previous 6 months were excluded. The change in global hair thickness before and after LDOM treatment was evaluated by 4 dermatologists with expertise in hair disorders comparing standardized clinical photographs and using a 3-point scale: improvement, stabilization, or worsening.

Fifty-one patients, of whom 36 were women (71%) and 15 were men (29%), with a mean age of 55 years (range, 26-76 years), were included. The median daily dose of LDOM was 1 mg (0.5 mg for women and 2.5 mg for men), with a mean duration of therapy of 21 months (range, 6-87 months). Hair thickness improved in 20 patients (39%) (Fig 1), remained stable in 27 patients (53%), and worsened in 4 patients (8%). The baseline characteristics and clinical outcomes are shown in Table I. Multivariate analysis showed that diffuse LPP was associated with a better response than patchy LPP ($P = .005$). Higher doses of LDOM were associated with a more favorable response in our male patients. The change in hair thickness was independent of the duration of LDOM therapy. Mild adverse effects were observed in 19 patients (37%), including hypertrichosis (n = 14), postural hypotension (n = 3), tachycardia (n = 2), and weight gain (n = 1). LDOM was discontinued in 1 patient with tachycardia.

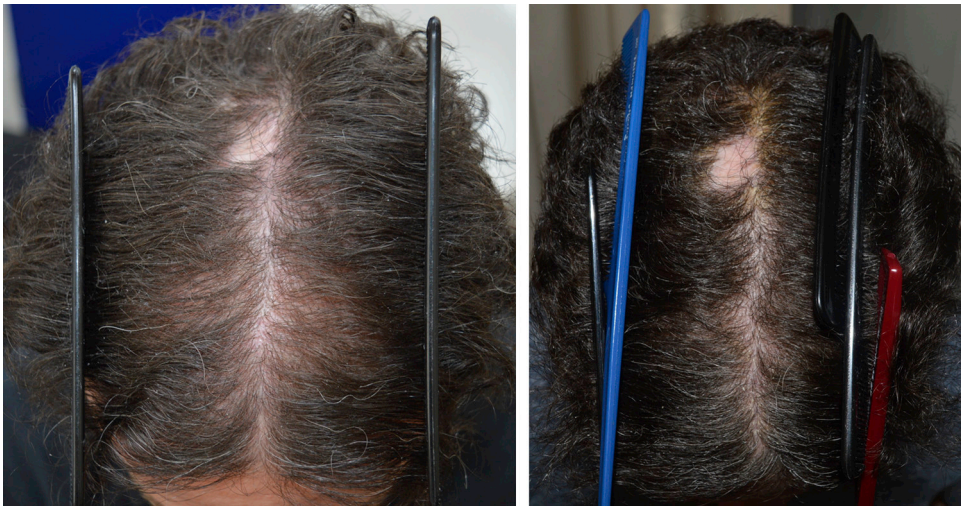

Fig 1. Clinical improvement in hair thickness of a 42-year-old man with biopsy-proven lichen planopilaris who was treated with low-dose oral minoxidil 1 mg daily for 6 months. He also received hydroxychloroquine 200 mg daily and topical corticosteroids.

Table I. Baseline characteristics and clinical outcomes of the 51 patients with LPP treated with LDOM

Clinical features	Clinical response			Total
	Improvement n = 20 (39%)	Stabilization n = 27 (53%)	Worsening n = 4 (8%)	
Sex, n				
Female	12	22	2	36
Male	8	5	2	15
Mean age, y	56	57	46	55
Type of LPP, n				
Patchy	11	25	4	40
Diffuse	9	2	0	11
Scalp surface area involved, %	16	14	12	14
Median daily dose of LDOM, mg	1	1	0.75	1
	Female: 0.75 Male: 3.4	Female: 0.75 Male: 2.3	Female: 0.75 Male: 0.75	Female: 0.75 Male: 2.7
Adverse effects and median dose, n (mg)				
Hypertrichosis	6 (1)	8 (0.75)	0	14 (0.75)
Postural hypotension	1 (2.5)	2 (1.25)	0	3 (2.5)
Tachycardia	2 (2.5)	0	0	2 (2.5)
Weight gain	1 (0.25)	0	0	1 (0.25)

LDOM, Low-dose oral minoxidil; *LPP,* lichen planopilaris.

LDOM is a systemic potassium channel opener that has recently been shown to be effective in androgenetic alopecia[5] and chronic telogen effluvium. To our knowledge, this is the first study describing its effectiveness in classical LPP. The initial therapeutic objective in primary cicatricial alopecia is to stop progression of the disease, but another approach is to improve hair thickness in unaffected, and potentially affected, areas. Our findings show that LDOM can help maintain or increase hair thickness in the majority of patients with LPP, with an acceptable safety profile. Diffuse LPP was associated with a better response than patchy LPP in our study. In patients with diffuse LPP, areas of hair loss are widespread but very small.[4] Therefore, an increase in hair thickness in immediately adjacent areas might allow near-complete concealment of the alopecic patches. The retrospective design, small sample size, and use of concomitant therapies are limitations of our study.

In conclusion, LDOM may be used in conjunction with anti-inflammatory agents to improve hair thickness in patients with classical LPP.

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REFERENCES

1. Vañó-Galván S, Saceda-Corralo D, Blume-Peytavi U, et al. Frequency of the types of alopecia at twenty-two specialist hair clinics: a multicenter study. *Skin Appendage Disord*. 2019;5:309-315.
2. Jha AK. Platelet-rich plasma as an adjunctive treatment in lichen planopilaris. *J Am Acad Dermatol*. 2019;80:e109-e110.
3. Fonda-Pascual P, Moreno-Arrones OM, Saceda-Corralo D, et al. Effectiveness of low-level laser therapy in lichen planopilaris. *J Am Acad Dermatol*. 2018;78:1020-1023.
4. Starace M, Orlando G, Alessandrini A, Baraldi C, Bruni F, Piraccini BM. Diffuse variants of scalp lichen planopilaris: clinical,

trichoscopic, and histopathologic features of 40 patients. *J Am Acad Dermatol*. 2020;83(6):1659-1667.

5. Jimenez-Cauhe J, Saceda-Corralo D, Rodrigues-Barata R, et al. Effectiveness and safety of low-dose oral minoxidil in male androgenetic alopecia. *J Am Acad Dermatol*. 2019;81:648-649.

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Medical comorbidities and sex distribution among patients with lichen planopilaris and frontal fibrosing alopecia: A retrospective cohort study

To the Editor: Although several small studies have described clinical findings and treatment modalities in lichen planopilaris and frontal fibrosing alopecia, there are sparse epidemiologic data regarding the sex distribution and comorbidities associated with these conditions. Additionally, most studies have combined lichen planopilaris and frontal fibrosing alopecia cohorts rather than examined each group individually. To address this knowledge gap, we performed a retrospective cohort study at Columbia University Irving Medical Center to investigate the sex distribution of lichen planopilaris and frontal fibrosing alopecia and determine whether these patients were at a higher risk of developing other inflammatory conditions.

We queried New York—Presbyterian Hospital and ColumbiaDoctors for patients with the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision (ICD-10)* code L66.1 (lichen planopilaris, frontal fibrosing alopecia) between 2015 and 2019. Chart review was performed to verify that all patients with an *ICD-10* code of L66.1 had findings consistent with lichen planopilaris or frontal fibrosing alopecia based on clinical criteria, histologic criteria, or both (Supplemental Methods available via Mendeley at https://data.mendeley.com/datasets/v3wpdnwrjs/1), determined by dermatologists who specialize in hair loss disorders. Additionally, confirmed cases required an unequivocal free-text diagnosis of lichen planopilaris or frontal fibrosing alopecia made by a dermatologist. All patients in the health system who did not have lichen planopilaris or frontal fibrosing alopecia were used as a control. Patients were queried for the comorbidities listed in Table I.

Of 381 patients with *ICD-10* code L66.1, 376 met clinical criteria for lichen planopilaris or frontal fibrosing alopecia (203 lichen planopilaris; 173 frontal fibrosing alopecia). Of 223 available biopsies

Table I. Comorbidities associated with lichen planopilaris/frontal fibrosing alopecia

			Overall		LLP		FFA	
Diagnosis	*ICD-9/ICD-10* codes	Sample size	Overall diagnosis, N (%)	Odds ratio (95% CI)	LLP diagnosis, N (%)	Odds ratio (95% CI)	FFA diagnosis, N (%)	Odds ratio (95% CI)
Atopic dermatitis/ allergic rhinitis/ asthma	691.8/L20.9, 477.9/J30.9, 493.92/J45	Yes (61,733)	14 (3.7)	0.70 (0.41–1.20)	6 (2.9)	0.55 (0.25–1.25)	8 (4.6)	0.88 (0.43–1.79)
		No (1,127,774)	364 (96.3)	1 [Reference]	198 (97.1)	1 [Reference]	166 (95.4)	1 [Reference]
Graves disease	242.0/E05.00	Yes (1668)	0	—	0	—	0	—
		No (1,189,507)	378 (100.0)	1 [Reference]	204 (100.0)	1 [Reference]	174 (100.0)	1 [Reference]
Hypothyroid	244.9, 244.8/ E03.09, Z86.39, V12.29	Yes (39,620)	21 (5.6)*	1.71 (1.10–2.65)*	9 (4.4)	1.34 (0.69–2.62)	12 (6.9)*	2.15 (1.20–3.87)*
		No (1,149,887)	357 (94.4)	1 [Reference]	195 (95.6)	1 [Reference]	162 (93.1)	1 [Reference]
Hashimoto	245.2/E06.3	Yes (3406)	2 (0.5)	1.85 (0.46–7.44)	1 (0.5)	1.72 (0.24–12.24)	1 (0.6)	2.02 (0.28–14.38)
		No (1,186,101)	376 (99.5)	1 [Reference]	203 (99.5)	1 [Reference]	173 (99.4)	1 [Reference]
Hyperthyroid	241/E05.9	Yes (3573)	1 (0.3)	0.88 (0.12–6.27)	0	—	1 (0.6)	1.92 (0.27–13.71)
		No (1,185,934)	377 (99.7)	1 [Reference]	204 (100.0)	1 [Reference]	173 (99.4)	1 [Reference]