Vitamin D deficiency among patients with lichen planopilaris or frontal fibrosing alopecia

To the Editor: Lichen planopilaris (LPP), a prototypical, lymphocytic, cicatricial alopecia, is an inflammatory condition that affects the stem cell region of the hair follicle, known as the bulge. It may present as scalp alopecia; perifollicular scale and erythema; bald patches; and scalp pain, burning, or itching. Frontal fibrosing alopecia (FFA) is a variant of LPP, sharing some underlying pathology but differing in clinical presentation. LPP preferentially affects the vertex and crown scalp, whereas FFA primarily causes hair loss in the frontal hairline, eyebrows, and sideburns.

The pathophysiology of LPP is poorly understood but is thought to be mediated by the T-lymphocytic attack of follicular stem cells in the bulge area of hair follicles. The destruction of these stem cells causes permanent hair loss. It has been shown that vitamin D receptor dysfunction can lead to the loss of stem cell function in the bulge. This retrospective study compared the prevalence of vitamin D deficiency (VDD) and vitamin D insufficiency (VDI) in patients with LPP or FFA with that of VDD and VDI in the US general population (USGP).

We reviewed the charts of 241 patients with LPP or FFA seen at a single specialty alopecia clinic. Of them, 103 had documented their serum 25-hydroxy vitamin D levels at the time of diagnosis (Table I). Patients on vitamin D supplementation were excluded.

Using thresholds recommended by the Endocrine Society, VDD was characterized by a 25-hydroxy vitamin D level of <20 ng/mL and VDI as a 25-hydroxy vitamin D level of ≥20 ng/mL but <30 ng/mL. The population was categorized into “sufficient,” “insufficient,” and “deficient” groups according to the serum vitamin D levels. The prevalence of VDD and VDI in our patient population was compared with that in the USGP. The χ² analysis was used to determine the significance of our findings.

In our patient population, the prevalence of VDD was significantly higher than that in the USGP (43.7% vs 28.9%, respectively; \( P = .042 \), Fig 1). A higher comparative prevalence of VDI existed in our population than in the USGP (66.0% vs 41.4%, respectively; \( P < .01 \)). Because factors such as diabetes, age, sex, body mass index, and smoking status may affect VDI and VDD, we evaluated these in our patient population and compared them with

| Sex            | Number |
|----------------|--------|
| Female         | 99     |
| Male           | 4      |

| Age, mean, SD, (range), y | 64.0, 11.99, (31-88) |
|--------------------------|----------------------|
| BMI, mean, SD, kg/m²     | 27.1, 3.19           |
| Race                     |                      |
| Caucasian                | 87                   |
| Black                    | 6                    |
| Asian                    | 5                    |
| Diagnosis                |                      |
| Lichen planopilaris      | 61                   |
| Frontal fibrosing alopecia | 42                 |
| Smoking status           |                      |
| Daily smoker             | 18 (17.5%)           |
| Never smoker             | 71 (68.9%)           |
| Unknown                  | 14 (13.6%)           |
| Smoking prevalence in US population | 16.7% |
| Diabetes status          |                      |
| Type 1 diabetes          | 13 (12.6%)           |
| Nondiabetic              | 46 (44.7%)           |
| No data available        | 44 (42.7%)           |
| Diabetes prevalence in US population | 11.7% |

BMI, Body mass index.
those in the USGP, which revealed that these were present at similar rates (Table I).3

Patients with LPP or FFA have a significantly higher likelihood of being deficient or insufficient for vitamin D than the USGP. Our findings align with those of other smaller studies that have demonstrated an increased prevalence of vitamin D abnormalities in patients with scarring alopecias.4 Although the USGP does not match with our mostly female sample population, VDD has been shown to be less or equally prevalent in older women than in other populations.5 Consequently, we would have likely observed a larger increase in VDD prevalence in our sample than in age- and sex-matched populations.4,5 Consequently, we would have likely observed a larger increase in VDD prevalence in our sample than in age- and sex-matched populations. Whether serum vitamin D levels affect disease severity and progression is yet to be explored. The efficacy of vitamin D supplementation should be investigated as an adjuvant to treatment regimens for patients with scarring alopecias.

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None disclosed.

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