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Telogen effluvium and associated incidence of abnormal serum ferritin, zinc, 25-hydroxy vitamin D, and thyroid-stimulating hormone

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Introduction: Telogen effluvium (TE) is a diffuse, nonscarring alopecia after an abrupt and predominant shift of hair follicles from anagen to telogen phase. Proposed cofactors include, but are not limited to, endocrine and nutritional abnormalities, drug reactions, and physical and psychological stress. In addition, possible triggers that can be objectively measured include abnormalities of iron, vitamin D, zinc, and thyroid hormone. The primary objective was to determine the reported incidence of abnormal serum ferritin, zinc, 25-hydroxy vitamin D, thyroid-stimulating hormone (TSH), and free thyroxine (fT₄) in a population of patients with TE, and to identify possible trigger events in this TE population.

Methods: A diagnostic code search was performed to identify patients clinically diagnosed by a dermatologist as TE over a 24-month period in a large, urban, single site, academic-based dermatology practice in Chicago. Data collected from medical records included age, race, sex (all females), suspected hair loss trigger factor(s), and serum ferritin, zinc, 25-hydroxy vitamin D, TSH, and fT₄. Trigger events were categorized as endocrine, nutritional, drug-related, physical, or psychological stressors.

Results: Ninety-nine females with TE were included in our analysis. The incidence of abnormal laboratory results was as follows: low serum ferritin 9/93 (9.7%), low serum zinc 4/61 (6.6%), low serum 25-hydroxy vitamin D 34/79 (43%), low TSH 2/58 (3.4%), and high TSH 4/58 (6.9%). The proportions of patient and/or physician suspected trigger factors were: endocrine 21/99 (21.2%), nutritional 15/99 (15.2%), drug-related 7/99 (7.0%), physical stressor 7/99 (7.0%), and psychological stressor 31/99 (31.3%). Multiple triggering factors were suspected in 15/99 (15.2%) patients. In 32/99 (32.3%) patients, no triggering factor was identifiable. There was no statistically significant correlation between category of trigger factor and age, race, or serology.

Conclusion: In our patient population, vitamin D deficiency was the most frequent laboratory abnormality identified (43% of 79 tested patients). Psychological stressors were the most common patient and/or physician-suspected triggering events, yet in 32% of patients, no triggering factor was identifiable. Recently, low vitamin D in a controlled study has been associated with TE. Additional investigation is needed to understand the mental and physical stressors that precipitate TE.