Biotin Deficiency in Telogen Effluvium: Fact or Fiction?

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Abstract:
BACKGROUND: Biotin is popular in hair loss treatment supplements, although the frequency of its deficiency in patients with hair loss has not been established.

OBJECTIVES: This work sought to assess the serum levels of biotin in patients with telogen effluvium.

METHODS: This case-control study included 60 patients with telogen effluvium and 20 control subjects. Subjects who were on biotin therapy three months prior to the study and those reporting other causes of hair loss were excluded. The scalp of each patient was clinically and dermoscopically examined. Serum biotin levels were measured using enzyme-linked immunosorbent assay kits.

RESULTS: Serum levels of biotin were optimal in patients and control groups with no significant difference between the groups. Insignificantly lower biotin levels in elderly patients, smokers, athletes, those with a history of recurrent infections, and women who were pregnant and/or lactating were observed. There was also an insignificant positive correlation between the serum level of biotin and patient age and an insignificant negative correlation between disease duration and patient body mass index. Serum biotin has a weak specificity and sensitivity in differentiating between cases and control subjects or between acute and chronic telogen effluvium.

CONCLUSION: There was no significant difference in serum biotin levels between cases and controls or between those with acute or chronic telogen effluvium.

KEY WORDS: Biotin, hair loss, nutritional deficiency, telogen effluvium, vitamin B7