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Correlation Between Vitamin D Deficiency and Recurrent Aphthous Ulcers: A Clinical Study.

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Introduction

Recurrent aphthous ulcers (RAUs) are among the most common ulcerative conditions of the oral mucosa, affecting up to 20% of the general population (Ship et al., 2000). Characterized by painful, shallow ulcers with an erythematous halo, RAUs can significantly impair a patient's quality of life, interfering with speech, mastication, and swallowing. Despite decades of research, the exact etiology remains elusive; however, multifactorial causes have been implicated, including genetic predisposition, immunological disturbances, nutritional deficiencies, hormonal fluctuations, and stress (Scully & Porter, 2008) [1, 2, 3, 4, 5].

Vitamin D, traditionally recognized for its role in calcium homeostasis and bone metabolism, has emerged as a potent immunomodulatory molecule influencing both innate and adaptive immunity (Holick, 2007). Deficiency of vitamin D has been linked to an increased susceptibility to various autoimmune and inflammatory conditions. Given that RAUs are associated with immune dysregulation—particularly involving T-cell mediated responses—vitamin D deficiency may play a contributory role in their pathogenesis (Khabbazi et al., 2014).

Several recent studies have reported a higher prevalence of vitamin D deficiency in patients with RAUs compared to healthy controls, suggesting a potential causal or aggravating link. The hypothesized mechanism involves vitamin D's capacity to downregulate pro-inflammatory cytokines, upregulate antimicrobial peptides, and maintain mucosal integrity (Cannel & Vieth, 2011). This clinical study aims to investigate the correlation between serum vitamin D levels and the occurrence of RAUs, providing further insights into possible preventive or therapeutic approaches.

Conclusion

The findings of this study underscore the potential association between vitamin D deficiency and recurrent aphthous ulcers, supporting the theory that adequate vitamin D levels may help in reducing the frequency and severity of RAUs. While the relationship observed does not establish definitive causality, it highlights the importance of screening for vitamin D deficiency in patients presenting with recurrent oral ulcers. Further longitudinal and interventional studies are warranted to confirm these results and explore vitamin D supplementation as an adjunctive strategy in RAU management.

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