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The role of zinc in the treatment of vitiligo

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Vitiligo is a pigmentary disorder, characterized by acquired, progressive, and well-defined depigmentation of the skin, hair and mucosal surfaces. Regarding its pathogenesis, several hypotheses have been suggested among them, stress, autoimmune factors, genetic predisposition, toxic agents, altered cellular environment, imbalance in the oxidant-antioxidant system, and impaired melanocyte migration and/or proliferation are the most important ones. Zinc is a trace element which has many vital functions in human, particularly as antiapoptotic and antioxidant factor. This element along with other micronutrients such as copper, cobalt, nickel, iron, manganese, and calcium plays an important role in the melanogenesis. For the first time, Bagherani et al. prescribed oral zinc sulphate as a novel option for the treatment of vitiligo. In a clinical trial, they

compared the efficacy of topical corticosteroid with and without oral zinc sulphate in treating vitiligo. This study revealed that the combination of topical corticosteroid and oral zinc was more effective than the topical steroid alone, although this difference was not statistically significant. Other studies also supported the association of zinc and vitiligo. Suggested mechanisms for justifying the efficacy of zinc in preventing and treating vitiligo include prevention of melanocyte apoptosis, inhibition of oxidative stress, its effect on the melanogenesis, its role as an immunomodulatory agent, its antibacterial role, stimulation of α -melanocyte stimulating hormone release, and precipitation of Zn- α 2-glycoprotein in the site of lesions.

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