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Editorial

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Role of Vitamin E in Combating Pulmonary Tuberculosis

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Pulmonary tuberculosis (PTB) remains a formidable global health challenge, emerging due to drug-resistant strains with limited treatment options that require innovative strategies to augment conventional treatments. Vitamin E, a lipid-soluble antioxidant, Vitamin having immunomodulatory, and anti-inflammatory properties that could potentially aid in the battle against TB. Amidst this pursuit, the potential of vitamin E as an adjunctive therapy against PTB has come into focus. Vitamin E's antioxidative and immunomodulatory properties present a promising avenue to bolster the host response against Mycobacterium tuberculosis (MTB) infection. There is a potential role of vitamin E in combating pulmonary tuberculosis.[1]

Vitamin E has been shown to modulate immune responses by influencing the activity of various immune cells, including macrophages, T cells, and dendritic cells. It can enhance phagocytic activity, cytokine production, and antigen presentation, thereby contributing to an efficient immune response against Mycobacterium tuberculosis (MTB) infection. Thus, Vitamin E may potentially intensify MTB clearance. Oxidative stress induced by MTB infection contributes to tissue damage and immunosuppression. Vitamin E prowess, as an antioxidant, offers defense against oxidative stress. By neutralizing harmful free radicals, vitamin E may mitigate lung tissue injury, promoting an environment conducive to improved immune function during TB. [2]

Emerging evidence suggests that vitamin E may act synergistically with existing anti-PTB drugs. Its antioxidative capacity could potentially enhance the efficacy of antibiotics, possibly leading to quicker bacterial clearance and shortened treatment duration. However, deciphering the intricate interplay between vitamin E and these drugs requires meticulous research. [3]

Despite these promising findings, challenges such as optimal dosage, potential interactions with other medications, and varying patient populations must be addressed before recommendation of vitamin E as adjunctive TB therapy. Vitamin E holds promise as an adjunctive therapy for the management of pulmonary tuberculosis. Its immunomodulatory and antioxidative properties potentially enhance the immune response and mitigate oxidative damage caused by MTB infection. However, further research, including well-designed clinical trials, is essential to establish its safety, efficacy, and optimal use in combination with standard anti-PTB regimens. [4]

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