Selenium and Alzheimer's disease: a systematic review.


Source

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Abstract

Preventing Alzheimer's disease (AD) would require knowledge about its etiology to a degree of detail not yet available. The major hurdle in understanding the disease lies in teasing out the various causes and their complex interactions. Since considerable data have accrued showing that the essential trace element selenium (Se) might play different roles in the progression of AD, we conducted a systematic review of the literature regarding Se and AD. We identified 9 placebo-controlled studies (6 were multiple supplement trials including Se, 1 was ongoing), 4 prospective, 4 cross-sectional, 15 case control, 24 autopsy studies, as well studies in animals and cells. There is an absence of consistent clinical evidence as to whether supplementation of Se is beneficial in the treatment of AD and how Se levels are altered in brain, cerebrospinal fluid, and blood of patients with AD. Some longitudinal and cross-sectional studies, however, show an association of Se status and cognitive function. Findings from molecular biology reveal a decisive role of Se in the pathogenesis of AD. In summary, the current state of knowledge provides no evidence for a role of Se in the treatment of AD, but allows speculation on a potential preventive relevance. Large trials of long-term duration could provide definitive answers.

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