

A Case for Alpha-Lipoic Acid as an Alternative Treatment for Diabetic Polyneuropathy.

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Abstract

PURPOSE: The aim of this systematic review is to evaluate current evidence of alpha-lipoic acid (ALA) regarding efficacy, safety, and cost to accurately compare it with other diabetic polyneuropathy (DPN) treatments. The intention is to provide recommendations on future research and to promote utilization of ALA in the United States (US).

METHODS: A literature search was conducted on three databases: Scopus, PubMed, and Web of Science. The following criteria were used to select studies: (1) randomized controlled trials (RCTs) and open-label trials on ALA, (2) review articles and meta-analyses of RCTs on ALA, (3) study population consisting of patients with diabetes mellitus, peripheral neuropathic pain, and/or metabolic syndrome.

RESULTS: Twenty-five publications were selected including five RCTs and three open-label studies. Most clinical trials were conducted outside of the US. Current data provides evidence for the benefits of ALA in DPN treatment at a dose of 600 mg per day, either intravenously (IV) or orally, for a duration of at least 3 weeks with minimal side effects.

CONCLUSIONS: ALA demonstrates effectiveness in treating DPN through multiple mechanisms to modulate pathophysiology and control symptoms. In addition, ALA exhibits activity in weight management and insulin sensitivity. The use of ALA for DPN in the US is worth considering because commonly prescribed medications have unclear mechanisms, more pronounced adverse effects, and are more expensive than ALA. Further research needs to be conducted to assess long-term efficacy of ALA in US patients.