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Vitamin C Could Prevent Complex Regional Pain Syndrome Type I in Trauma and Orthopedic Care? A Systematic Review of the Literature and Current Findings

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Abstract

The aim of this systematic review is to evaluate the efficacy of Vitamin C (VC) in preventing Complex Regional Pain Syndrome type I (CRPS-I) in fractures or surgery of the upper and lower extremities. During December 2020, Scopus and PubMed search was performed to analyze VC supplementation in preventing CRPS-I after trauma and orthopedic care, according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses guideline. Patient, Intervention, Comparison, Outcomes, Study Design model, and a modified version of the Coleman Methodology Score were used to analyze the included studies. The research was limited from 1990 to December 2020. Initial screening results identified 649 studies. After reviewing each study, six clinical studies were included in the study. A total of 2026 patients of whom 632 male and 1394 female were collected in our systematic review. During the entire follow-up period, the occurrence of CRPS-I was evaluated in 1939 patients. Five of the six analyzed studies were favoring prophylactic use of the 500-1000 mg daily dose of VC for 45-50 days after orthopedic or trauma care for prevention of CRPS-I. Only one study found no benefit in VC supplementation compared with placebo to prevent CRPS-I. Analysis of the literature suggests that a daily 500-1000 mg VC supplementation may reduce the onset of CRPS-I in trauma of upper/lower extremities and in orthopedic surgery.

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Ascorbic acid, chronic pain, complex regional pain syndrome, reflex sympathetic dystrophy, vitamin C

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