

NAPCRG 52nd Annual Meeting — Abstracts of Completed Research 2024.

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Title

Effect of vitamin D supplementation on patients with low back pain; A systematic review

Priority 1 (Research Category)

Musculoskeletal and rheumatology

Presenters

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Abstract

Context: Low back pain (LBP) is a common issue with considerable social and economic impacts. Current treatment options are limited. There is a hypothesis that links LBP to vitamin D deficiency. Finding a treatment that reduces pain and improves quality of life (QoL) without side effects is important. Vitamin D supplementation could be beneficial by potentially reducing pro-inflammatory cytokines linked to pain and increasing anti-inflammatory cytokines that reduce inflammation. Objective: to investigate the effect of vitamin D supplementation on patients with LBP. Study Design: Systematic review.

Setting or Dataset: Five electronic databases were searched: MEDLINE, CINAHL Cochrane Library, Web of science, SCOPUS and Google scholar

Population Studied: We included all clinical trials examining the impact of vitamin D supplementation on LBP, regardless of the form, dosage, or route of administration, and featuring a placebo control group. Participants of any age, gender, nationality, or treatment environment were considered for inclusion. Instrument: Using PRISMA guidelines, Two reviewers independently assessed all data, and the risk for bias assessment was completed using RoB 2.0 scores and ROBINS-I scores for randomized controlled trials (RCTs) and non RCTs respectively.

Outcome Measures: Primary outcome measures were the assessment of any measure of pain (e.g., visual analog scale [VAS], Face Scale, numeric rating scale [NRS]), function (e.g., Roland Morris Disability Questionnaire, Patient-Specific Functional Scale), or subjective measure of improvement in people with LBP following vitamin D supplementation

Results: 2383 articles were screened by two reviewers after removing the duplicates. In total, six studies, five RCTs and one non-RCTs, involving 424 subjects met the inclusion criteria and corresponded to the aim of this review. Trials lasted from 6 weeks to 12 months. 4 studies compared vitamin D to placebo. The remaining 2 studies there were co-interventions between 2 groups. Five studies enrolled vitamin D deficient participants. Four studies showed that Vitamin D has no statistically significant effect on low back pain reduction. One study showed its small positive effect. And one which focused on QoL showed that it has no statistically significant effect. Conclusion: this study showed that vitamin D had minimal to modest positive effects on pain reduction in patients with low back pain, even among those who were deficient in vitamin D.

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