

Vitamin D Supplementation for Benign Paroxysmal Positional Vertigo: A Systematic Review

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Abstract

Introduction: Benign Paroxysmal Positional Vertigo (BPPV), a neuro-otological disorder accounting for nearly one-half of patients with peripheral vestibular dysfunction, is commonly attributed to displaced otoconia. These have been shown to have a biomineralization close to that of bone, and Vitamin D deficiency has been associated with BPPV. **Objective:** We aim to systematically review the available literature on Vitamin D supplementation and BPPV intensity and recurrence in adults. **Design:** We systematically reviewed the available literature on Vitamin D supplementation and BPPV intensity and recurrence. Articles were identified through searches of PubMed, MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials (CENTRAL), Current Controlled Trials, and ClinicalTrials.gov as well as manual reviews of references, from 1947 to April 2020. The study protocol was registered in the PROSPERO database (Trial Registration: CRD42020183195). **Results:** A total of 179 abstracts were identified and screened by two independent reviewers. Based on inclusion and exclusion criteria, six studies were selected and subjected to a quality assessment. In one randomized clinical trial (RCT), Vitamin D supplementation was found to reduce annual recurrence rate of vertigo in patient with BPPV and subnormal serum Vitamin D levels compared to placebo (odds ratio [OR] 0.69, 95% Confidence Interval [CI]: 0.54, 0.90). Non-randomized clinical trials demonstrated the possibility of a null effect in the random effects model (0.08[0.00, 1.56]). The RCT was the only study to be considered as low risk of bias in the overall evaluation. All of the non-randomized studies were assessed as serious risk of bias. **Conclusions:** The intervention studies identified consistently demonstrated a decrease in BPPV recurrence with supplementation of Vitamin D in patients with subnormal Vitamin D levels. Although there is a paucity of high-quality studies, the present literature does highlight a role for optimization of Vitamin D levels in patients with BPPV.

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