

Reverse Relationship of Uric Acid and Vitamin D3 in Adult Bahraini Patients with Rheumatoid Arthritis and Systemic Lupus Erythematosus

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Abstract

Background. Studies carried out assessing the effect of different doses of cholecalciferol (vitamin D3) on correcting serum 25-hydroxyvitamin D deficiency in healthy adults are limited and review studies are lacking. Moreover, the maintenance dose and its duration offered by these few studies are inconsistent.

Method. We performed a systematic review of randomized clinical controlled trials (RCTs) that assessed the effect of different doses of vitamin D3 on serum 25(OH)D in healthy adults. PubMed database was searched from 2010 to 2018 using the following search terms: “vitamin D deficiency”, “Cholecalciferol”, “vitamin D3 dose”, “vitamin D supplement”, “vitamin D therapy”. RCTs and original articles that evaluated different doses of vitamin D3 were identified.

Results. A total of sixteen (out of 3016) acceptable studies fulfilling our inclusion criteria were included in the current systematic review. Our results revealed that supplementation with vitamin D3 had a significant positive effect in raising serum 25(OH) D concentrations. Our findings indicated that the best regimen of vitamin D3 supplement consisted of an initial large bolus dose either IM injection of 600.000 IU monthly or oral dose of 200.000 IU monthly or 50.000 IU weekly for 8 weeks, followed by a maintenance dose of 50.000 IU monthly or bimonthly.

Conclusion. A large bolus therapeutic dose of vitamin D3, frequently or infrequently for 8 weeks, followed by long-term oral maintenance dose of 50.000 IU monthly or bimonthly optimize and maintain vitamin D serum levels year-round.

Key words: Vitamin D3 deficiency; Therapy; Maintenance dose.