

OSTEOSCOOP

News on current events in osteoporosis and rheumatology

Oral Vitamin D dose-dependently prevent nonvertebral fractures

N°132 – May 2010

Antifracture efficacy with supplemental vitamin D has been questioned by recent trials. For that reason, the authors of a recent study [1] performed a meta-analysis on the efficacy of oral supplemental vitamin D in preventing nonvertebral and hip fractures among older individuals (> 65 years). They included 12 double-blind randomized controlled trials (RCTs) for nonvertebral fractures (n=42 279) and 8 RCTs for hip fractures (n=40 886) comparing oral vitamin D, with or without calcium, with calcium or placebo. To incorporate adherence to treatment, they multiplied the dose by the percentage of adherence to estimate the mean received dose (dose x adherence) for each trial.

The pooled relative risk (RR) was 0.86 for prevention of nonvertebral fractures and 0.91 for the prevention of hip fractures, but with significant heterogeneity for both end points. Including all trials, antifracture efficacy increased significantly with a higher dose and higher achieved blood 25-hydroxyvitamin D levels for both end points. Consistently, pooling trials with a higher received dose of more than 400 IU/d resolved heterogeneity. For the higher dose, the pooled RR was 0.80 (n=33 265 subjects from 9 trials) for nonvertebral fractures and 0.82 (n=31 872 subjects from 5 trials) for hip fractures. The higher dose reduced nonvertebral fractures in community-welling individuals (-29%) and institutionalized older individuals (-15%), and its effect was independent of additional calcium supplementation.

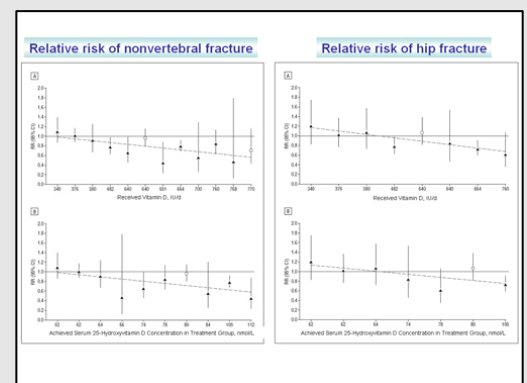
In conclusion, nonvertebral fracture prevention with vitamin D is dose-dependent, and a higher dose should reduce fractures by at least 20% for individuals aged 65 years or older.

1. Bischoff-Ferrari HE et al. *Arch Intern Med.* 2009; 169:551-561.

Oral Vitamin D dose-dependently prevents nonvertebral fractures

Antifracture efficacy of oral vitamin D on nonvertebral fractures increased significantly with a higher dose and higher achieved blood 25-hydroxyvitamin D levels. The relative risk of hip fracture was also reduced by high doses of vitamin D, independently of additional calcium supplementation.

These results show that nonvertebral fracture prevention with vitamin D is dose-dependent, and a higher dose should reduce fractures by at least 20% in individuals aged 65 years or older.



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