EFFECTS OF DIFFERENT VITAMIN D SUPPLEMENTATION SCHEMES IN POSTMENOPAUSAL WOMEN

Stefano Berardi, Addolorata Corrado, Angiola Mele, Cinzia Rotondo, Antonello Trota, Natalia Mansueto, Francesco Paolo Cantatore, Rheumatology Clinic, Department of Medical and Surgical Science, University of Foggia, Foggia, Italy

Background: Vitamin D exerts different extra-skeletal effects, including a positive effect on muscle function. Circulating levels of the 25 hydroxy Vitamin D - 25(OH)D - reflect the body Vitamin D reserves; to positive effect on muscle function. Circulating levels of the 25 hydroxy Vitamin D - 25(OH)D - reflect the body Vitamin D reserves; to

Objectives: The aim of the study was to evaluate the efficacy of the calcifediol (D3), but the hydroxylated Vitamin D metabolite calcifediol (HyD) represents a therapeutic alternative.

Methods: The aim of the study was to evaluate the efficacy of the calcifediol supplementation compared to various cholecalciferol administration schedules in increasing the 25(OH) vitamin D serum levels and the effects on muscular function in post-menopausal women.

Methods: 60 post-menopausal women aged ≤ 65 years with low serum 25(OH)D levels (8-24 ng/ml) were included in the study. Recruited patients were randomly assigned to receive oral Vitamin D 1000 UI/day according to four different regimens: 1) cholecalciferol (D3) 300,000 UI, single oral dose; 2) monthly cholecalciferol 100,000 UI for three consecutive months; 3) weekly cholecalciferol 7000 UI; 4) weekly HyD 7000 UI. At baseline and every three months, for 12 months, the following parameters were evaluated: serum levels of 25(OH)D; PTH, calcium, phosphates; at baseline and every 15 days muscular function was evaluated using the Timed Up and Go (TUG) and the Sit to Stand test.

Results: Weekly administration of HyD induced a significantly faster and greater increase of 25(OH)D levels, compared to the other treatment groups (12 months: +38% vs +145%, +200%, +248% in groups 1, 2, 3, respectively); the increase appeared after 1 month from baseline. D3 300,000 UI single dose induces a slower increase of 25(OH)D compared to monthly and weekly supplementation. An increase of muscular strength was observed after 12 months in all supplementation groups.

Conclusion: Supplementation with calcifediol is more effective and faster compared to cholecalciferol in increasing 25(OH)D serum levels; further, weekly cholecalciferol is more effective and faster compared to single dose or monthly administration. Increase in circulating levels of 25(OH)D is associated to an improvement of muscular strength.

REFERENCES: