

P80. Isolated vitamin D supplementation improves the metabolic syndrome risk profile in postmenopausal women: a randomized, double-blind, placebo-controlled trial

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Context: Some observational studies have demonstrated an inverse relationship between VD and metabolic syndrome (MetS) in postmenopausal women. However available data from intervention studies were not consistent to draw final conclusions on the effect of VD supplementation on risk factors of MetS.

Objective: To evaluate the effect of isolated VD supplementation on the MetS risk profile in postmenopausal women.

Methods: This is a randomized, double-blind, placebo-controlled trial. Clinical and anthropometric data were collected. Lean body mass and body fat were estimated by DXA. The plasma concentration of 25(OH)D was measured by HPLC. Biochemical parameters (total cholesterol, HDL, LDL, triglycerides, glucose, insulin) were measured.

Participants: Women aged 50-65 years and amenorrhea ≥ 12 months were included. Exclusion criteria were: cardiovascular disease, insulin-dependent diabetes, renal failure, liver disorders, grade III obesity, use of previous VD.

Interventions: The intervention time was 9 months, with assessments at baseline and endpoint. A total of 160 postmenopausal women randomized into two groups: VD group, vitamin D3 supplementation 1,000 IU/day/orally (n=80) or placebo group (n=80).

Main Outcome Measures: Effect of VD supplementation on diagnostic criteria for MetS: waist circumference > 88 cm; triglycerides ≥ 150 mg/dL; HDL < 50 mg/dL; blood pressure $\geq 130/85$ mmHg; fasting glucose ≥ 100 mg/dL.

Results: After 9 months, there was a significant increase in 25(OH)D levels for VD group (+45.4%, $p < 0.001$), and a decrease (-18.5%, $p = 0.049$) in placebo group. In VD group, a significant reduction was observed in triglycerides (-12.2%, $p = 0.001$), insulin (-13.7%, $p = 0.008$) and HOMA-IR (-17.9%, $p = 0.007$). In placebo group, there was an increase in glucose (+6.2%, $p = 0.009$). No significant differences were observed in anthropometric characteristics between groups ($p > 0.05$). Analysis of the risk adjusted for age, time since menopause, and BMI showed that women supplemented with VD had a lower risk of MetS (OR 0.42; 95% CI 0.21-0.83), hypertriglyceridemia (OR 0.43; 95% CI 0.22-0.85) and dysglycemia (OR 0.23; 95% CI 0.10-0.52) compared to placebo group ($p < 0.05$).

Conclusions: In postmenopausal women, isolated supplementation with 1,000 IU of vitamin D3 for 9 months was associated with a reduction in the MetS risk profile. Women undergoing VD supplementation had a lower risk of MetS, hypertriglyceridemia and dysglycemia than women in placebo

group.

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