

Oral Abstract

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Effects of calcium supplementation on fracture prevention depend on patient compliance

Zhu K^{1,2}, Devine A³ and Prince RL^{1,2}

¹Department of Endocrinology and Diabetes, Sir Charles Gairdner Hospital, ²School of Medicine and Pharmacology, University of Western Australia and ³School of Exercise, Biomedical and Health Science, Edith Cowan University, Perth, WA, Australia.

Aims: In the calcium intake fracture outcome study (CAIFOS), a 5-year double-blind, placebo-controlled trial in elderly women, we previously reported that calcium supplementation did not significantly reduce fracture risk in the whole cohort, but reduced the risk in those who took 80% or more of their tablets. The aim of this analysis is to evaluate the influence of patients' compliance on fracture prevention.

Methods: The CAIFOS study subjects were 1460 women aged over 70 years (mean age: 75.2 ± 2.7 years). Subjects were randomised to receive 1200 mg calcium per day or identical placebo for 5 years. Medication compliance was checked by counting returned tablets at each 12 months review. Clinical incident osteoporotic fractures were ascertained during the study. The time to first clinical event was analysed using the Cox proportional hazards model.

Results: Over the 5 years, 236 subjects had a least one incident osteoporotic fracture. The calcium supplementation did not reduce the risk of fracture in the whole cohort analysis (Ca 15.1% Placebo 17.3%; Hazard Ratio 0.86; 95% CI 0.67-1.11), but the effects on fracture prevention improved with increased compliance: 40% compliance ($n = 997$; Ca 10.9% Placebo 15.0%; HR 0.72; 95% CI 0.51-1.02); 60% compliance ($n = 958$; Ca 10.9% Placebo 15.3%; HR 0.71; 95% CI 0.50-1.01); 80% compliance ($n = 830$; Ca 10.2% Placebo 15.4%, HR 0.66; 95% CI 0.45-0.97).

Conclusion: The effect of calcium intervention on fracture prevention depends on patient compliance. Calcium supplementation is an effective therapy for the prevention of fracture in compliant patients.