

[2008] [FRI0379] RELATIONSHIP BETWEEN LONG-TERM CHANGES IN FEMORAL NECK BONE MINERAL DENSITY AND HIP FRACTURE INCIDENCE IN UNTREATED POSTMENOPAUSAL OSTEOPOROTIC WOMEN

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Background: Meta-analysis have shown an increase in hip fracture risk in patients with a low hip bone mineral density (BMD). However, the relationship between BMD loss and hip fracture risk has poorly been studied.

Methods: Femoral neck BMD was assessed at baseline and after a follow-up of 3 years in women from the placebo group of the SOTI and TROPOS trials. SOTI and TROPOS were two recent studies having assessed the anti-fracture efficacy of strontium ranelate in osteoporosis. Hip fractures were based on written documentation. All patients received calcium and vitamin D during 3 years.

Results: Out of the 1933 women included in this study, 36 (1.9%) have experienced a hip fracture during the 3 years of follow-up. The logistic regression analysis, including age, body mass index, prevalent vertebral fracture and baseline femoral neck BMD as covariates, showed that 3-year change in femoral neck BMD was statistically associated with the incidence of hip fracture after 3 years ($p=0.001$). For each decrease of 1% in femoral neck BMD, the risk to experience a new hip fracture after 3 years increased by 7% (95%CI 3%-12%). Patients within the first quartile of femoral neck BMD change ($<-5.49\%$) have experienced 22 hip fractures (4.6%) compared to 7 fractures (1.5%) in patients within the fourth quartile ($>+0.68\%$). The risk to experience a hip fracture in patients with the highest femoral neck BMD less is more than 3-fold greater than in patients within the smallest BMD less ($p=0.005$).

Conclusion: In this elderly population, the highest decrease in femoral neck BMD is associated with the highest hip fracture incidence.

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Osteoporosis

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