Swedish researchers show impact of long-term vitamin D insufficiency on fracture risk

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A study presented today at the World Congress on Osteoporosis, Osteoarthritis and Musculoskeletal Diseases shows that long-term low levels of vitamin D intake are associated with higher 10-year fracture risk in elderly women.

Vitamin D insufficiency in seniors has been shown to contribute to increased risk of osteoporotic fractures. Previous studies have used single vitamin D measurements to investigate effects on bone. However, in elderly women, relatively little is known about the effects of long-term vitamin D insufficiency on bone health.

The study by Swedish researchers used sequential assessment of serum vitamin D to determine if sustained hypovitaminosis D in elderly women leads to increased 10-year fracture incidence.

Study participants at baseline were 1044 Swedish women, all aged 75, with 715 attending at the 5-year follow up. Serum 25-hydroxyvitamin D (25OHD) levels (nmol/l) were classified as low (75). Women with values in the same 25OHD category at both samplings were considered to have consistently low, intermediate or high levels. Fracture data was followed for 10 years through X-rays at the radiology department.

The results showed that the incidence of hip fractures within 10 years was significantly lower in those women who were vitamin D sufficient (≥50 nmol/l) at baseline and maintained this level at 5 years. The proportion of women sustaining FRAX fractures was 26.2% and 30% in

the group which had consistently high or intermediate 25OHD levels compared to 45.6 % in the group with consistently low levels. The incidence of shoulder, radius and vertebral fractures was not associated with 25OHD status in the study. The majority of fractures occurred between 5 and 10 years after baseline (hip 77%; FRAX 64%) however the time to first fracture (hip and FRAX) did not significantly differ between the three categories of 25OHD using either a single or serial measurement.

Professor Kristina Akesson, Clinical and Molecular Osteoporosis Research Unit at Lund University, Chair of the IOF Capture the Fracture Campaign, stated, "This study concludes that in the population sample of elderly women, vitamin D insufficiency sustained over 5-years was associated with increased 10-year risk of osteoporotic fracture."

She added, "This is part of a body of research which increasingly suggests that falls and fracture risk in the elderly could be lower by having higher vitamin D levels. The International Osteoporosis Foundation (IOF) global recommendations for vitamin D advise daily intakes of 800 to 1000 IU/day in seniors for fracture and falls prevention, and if the on-going research shows that vitamin D levels are increased it may be a relatively simple and low-cost public health measure that could have significant positive effects on the incidence of osteoporotic fractures with aging."

Fracture prevention is a key focus of IOF's global campaign 'Capture the Fracture'. The campaign specifically targets secondary fracture prevention by promoting the implementation of coordinator-based fracture liaison services in hospitals and clinics worldwide.

More information: OC19 Vitamin D insufficiency sustained over 5 years contributes to increased 10-year fracture risk in elderly women D. Buchebner, F. E. Mcguigan, P. Gerdhem , M. Ridderstråle, K. Akesson

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