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News on current events in osteoporosis and rheumatology

A composite predictive index of hip fracture in elderly women

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A recent study [1] aimed to develop a hip screening tool combining relevant clinical risk factors (CRFs) and quantitative ultrasound at the heel in order to determine the 10-y probability of hip fractures in elderly women. This study used the EPISEM database, totaling 13 000 women aged 70 or more. All women had baseline data on CRFs and a baseline measurement of the stiffness index derived from quantitative ultrasound at the heel. Women were followed prospectively to identify incident fractures. Multivariate analysis was performed to determine the CRFs that contributed significantly to hip fracture risk, and these were used to generate a CRF score.

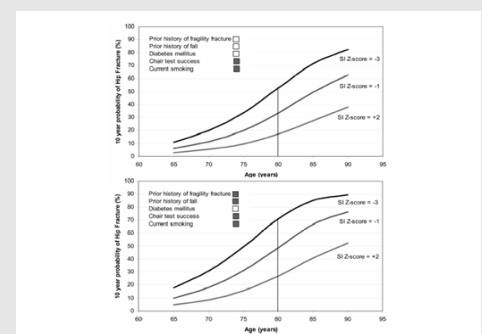
Three hundred seven hip fractures were observed over a mean follow-up of 3.2 y. In addition to stiffness index, significant CRFs for hip fracture were body mass index (BMI), history of fracture, an impaired chair test, history of a recent fall, current cigarette smoking, and diabetes mellitus. The average gradient of risk for hip fracture was higher with the combined stiffness index + CRF score compared with that calculated from each factor separately. Thus, the use of CRFs enhanced the predictive value of the stiffness index alone. For example, in a woman aged 80, the presence of two to four CRFs increased the probability of hip fracture from 16.9% to 26.6% and from 52.6% to 70.5% for stiffness index Z-scores of +2 and -3, respectively.

The combined use of CRFs and quantitative ultrasound stiffness index is therefore a promising tool to assess hip fracture probability in elderly women, especially when access to DXA is limited.

1. Hans D et al. J Bone Miner Res. 2008;23:1045-1051.

10-y probability of hip fracture

This probability is calculated for a given body mass index (BMI) of 26 kg/m², at different stiffness index Z-scores, and the presence of two clinical risk factors (upper panel) or four clinical risk factors (lower panel). The shadowed square indicates the presence of this specific CRF.



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