

Simplifying screening for osteoporosis in Australian primary care: the Prospective Screening for Osteoporosis; Australian Primary Care Evaluation of Clinical Tests (PROSPECT) study

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Abstract

Objective: Although bone density by dual-energy x-ray absorptiometry (DXA) is the standard measure for the diagnosis of osteoporosis, as a screening tool, it has significant cost and availability of DXA is not universal. Prospective Screening for Osteoporosis; Australian Primary Care Evaluation of Clinical Tests (PROSPECT) was a national study undertaken to establish an effective prescreening protocol to be used in primary care facilitating targeted radiological investigation for osteoporosis in older women.

Methods: Two hundred sixty-seven primary care physicians recruited 2,466 women 70 years and older who had no previous diagnosis of osteoporosis in a community-based cross-sectional study. The main outcome measures used were lumbar spine and femoral neck *T*-scores on DXA and presence of a vertebral fracture on thoracolumbar x-ray. Participant characteristics, gap-on-wall occiput test, and rib-to-pelvis distance measurements were provided by each primary care physician.

Results: Of the study population, 21.8% (95% CI, 19.9%-23.8%) had osteoporosis of the femoral neck and/or lumbar spine based on DXA, and 24.7% (95% CI, 22.5%-26.9%) had at least one vertebral fracture. Only 7.3% (95% CI, 6.2%-8.3%) had both osteoporosis and radiological vertebral fracture. Univariate and multivariate regression modeling of the demographic and clinical data collected resulted in a three-factor predictive tool for the diagnosis of osteoporosis and/or vertebral fracture that included the following variables: rib-pelvis distance greater than 2 fingerbreadths (yes/no), ever use of estrogen for more than 6 months (yes/no), and body mass index (<25, 25-30, >30 kg/m²). Only screening women classified as moderate to high risk by the tool DXA plus plain x-ray would then result in 14% of women 70 years or older who were not being screened, with 93% of cases being detected.

Conclusions: The Prospective Screening for Osteoporosis; Australian Primary Care Evaluation of Clinical Tests tool will contribute to the diagnosis and management of osteoporosis by facilitating targeted screening and hence reducing the need for unnecessary radiology tests at the primary care level.

Key Words: Osteoporosis – Risk assessment – Fracture prevention.