

Oral Abstract

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Validation of the FRAX algorithm and Garvan nomogram for predicting fracture risk

Sandhu SK^{1,2}, Nguyen ND¹, Center JR^{1,2}, Pocock NA², Eisman JA^{1,2} and Nguyen TV¹

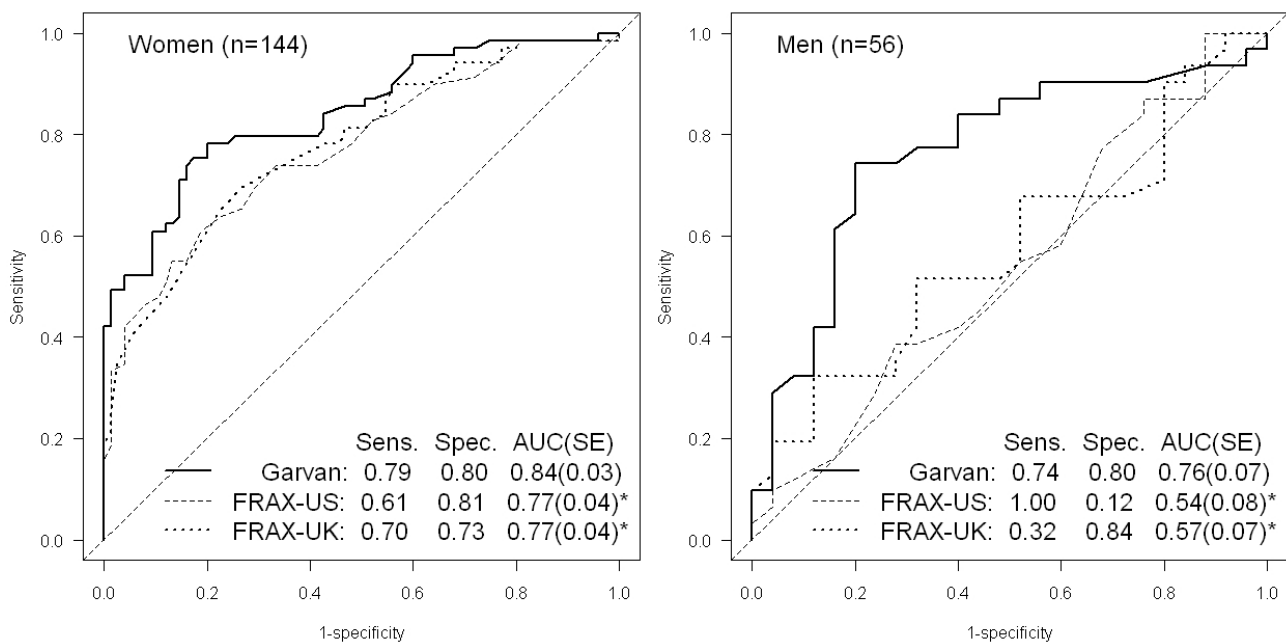
¹Bone and Mineral Research Program, Garvan Institute of Medical Research and ²St Vincent's Hospital and UNSW, Sydney, NSW, Australia

Absolute risk is now recognised as a preferred approach to fracture risk prediction to guide treatment decision. The present study sought to validate the World Health Organisation FRAX algorithm and Garvan Institute nomograms¹ for predicting fracture risk.

Clinical data were obtained from 100 fracture and 100 non-fracture Caucasian individuals (aged 60 to 90 years) attending St Vincent's outpatient clinics. Predicted 10-year probabilities of fracture were calculated using the Garvan's and FRAX algorithms based on the US (FRAX-US) and UK databases (FRAX-UK). Area under the receiver operating characteristic curves (AUC) were computed for each model.

In women, the 10-year probability of fracture in the fracture group was on average consistently higher than the non-fracture group for all algorithms: Garvan (0.33 vs 0.15), FRAX-US (0.30 vs 0.19), and FRAX-UK (0.17 vs 0.10). In men, the Garvan's model yielded higher average probability of fracture in the fracture group than the non-fracture group (0.32 vs 0.14); however, neither FRAX-US nor FRAX-UK predicted higher probability of fracture in the fracture group: FRAX-US (0.17 vs 0.19) and FRAX-UK (0.09 vs 0.12). The AUC for Garvan was significantly greater than that for FRAX-US and FRAX-UK in both sexes (Figure).

Thus, risk algorithms require further external validation before clinical implementation. These findings suggest the Garvan's prognostic model performs better than FRAX-US or UK models in terms of fracture prediction, especially in men.



¹Nguyen ND et al (2007,2008) Osteoporos Int