

RGH Pharmacy E-Bulletin

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A joint initiative of the Patient Services Section and the Drug and Therapeutics Information Service of the Pharmacy Department, Repatriation General Hospital, Daw Park, South Australia. The RGH Pharmacy E-Bulletin is distributed in electronic format on a weekly basis, and aims to present concise, factual information on issues of current interest in therapeutics, drug safety and cost-effective use of medications.

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Quantifying fracture risk

According to information from the Australian National Prescribing Service (NPS), osteoporotic fractures occur in half of all women and a third of all men over the age of 60 years, causing morbidity and premature mortality, with annual health care costs in Australia are estimated at over \$7 billion. Many health professionals are very aware of the range of issues that connect medication use and the risk of fractures, and there have been recent further developments that add to the range of issues that need to be considered by clinicians.

Two clinical tools that assist health professionals to quantify fracture risk for patients are now available. These algorithms provide risk estimations that can be helpful to patients and clinicians, and promote shared decision making in the management of osteoporosis. The management of osteoporosis requires consideration of calcium and vitamin D status, lifestyle issues such as exercise, smoking and alcohol, the use of pharmacotherapeutic agents such as bisphosphonates, strontium ranelate, raloxifene, and the minimisation of adverse effects on bone from medications such as glucocorticoids. Another issue to consider is the relationship between some medications and falls, which in turn further predispose some patients to greater risk of fracture.

The Fracture Risk Assessment (FRAX) tool has been developed by the World Health Organisation and is currently available on the internet at: <http://www.shef.ac.uk/FRAX/> The FRAX tool integrates clinical risk factors as well as bone mineral density (BMD) at the femoral neck. The algorithm predicts the 10-year probability of hip fracture and 10-year probability of a major osteoporotic fracture (clinical spine, forearm, hip or shoulder fracture). The clinical risk factors used are age, gender, height, weight, previous fracture, history of parental hip fracture, smoking status, use of oral glucocorticoids, presence of rheumatoid arthritis, secondary osteoporosis, alcohol intake and bone mineral density (if known). Risk factors have variable importance depending upon age (e.g. a family history), or on the presence or absence of other risk factors. When dose-response factors are important (e.g. use of oral glucocorticoids) clinical judgement is necessary in interpreting probabilities.

The Fracture Risk Calculator is accessible at www.fractureriskcalculator.com and was developed by the Garvan Institute of Medical Research in Australia.

The Fracture Risk Calculator was developed based on Australian data from the Dubbo Osteoporosis Epidemiology Study. The study included men and women aged over 60 years of age. The Fracture Risk Calculator requires information including gender, age, weight, history of prior fracture, number of falls in the past 12 months and bone mineral density. Patients and clinicians are presented with 5 and 10 year probabilities for “hip fracture” and “any osteoporotic/fragility fracture” respectively.

Such tools provide patients information on actual risk of fracture. Even though many older Australians will suffer an osteoporotic fracture during their lifetime, less than two-thirds of women and probably fewer men with fragility fracture currently receive specific therapy.

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FOR FURTHER INFORMATION – CONTACT THE PHARMACY DEPARTMENT ON 82751763 or email: chris.alderman@rgh.sa.gov.au
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