Hip fracture risk profiles in older Indigenous Australians
Michelle M Y Lai and Nicholas G Waldron

To the Editor: Although Indigenous males are twice as likely and Indigenous females are half as likely to report being diagnosed with osteoporosis compared with their non-Indigenous counterparts, data on the interracial differences in osteoporotic risk factors are limited.

Our study of 276 patients attending a tertiary hip fracture unit in Western Australia over a 5-year period is the first to report differences in common risk factors for hip fracture between Indigenous and non-Indigenous patients. Our data showed a lower likelihood of vitamin D deficiency and polypharmacy but higher likelihood of diabetes mellitus, renal disease and alcohol use among Indigenous patients with hip fracture compared with non-Indigenous patients.

Using the local orthogeriatric database, we identified 46 Indigenous and 230 randomly selected non-Indigenous patients aged ≥45 years who were transferred to a hip fracture unit following surgery for a minimal-trauma fracture at Royal Perth Hospital from July 2005 to June 2010. High alcohol use was defined as alcohol intake exceeding guideline recommendations, and polypharmacy as the use of more than five medications. We used a laboratory cut-off of 25-hydroxyvitamin D (25-OHD) < 50 nmol/L to indicate a low vitamin D level. Indigenous status was self-reported during admission.

We compared data for Indigenous and non-Indigenous patients using the Mann–Whitney U and Pearson χ² tests. We used logistic regression (SPSS version 17; SPSS Inc, Chicago, Ill, USA) to examine the association between Indigenous status and the predictor variables.

Our study was exempted as a quality assurance activity from formal ethics review by the Royal Perth Hospital Ethics Review Committee and the Western Australian Aboriginal Health Information and Ethics Committee.

Risk factors among the two groups are shown in the Box. The most common risk factors among Indigenous patients were anti-hypertensive use, high alcohol use and diabetes. In the final multivariate model,
Indigenous patients with hip fracture were significantly more likely to have diabetes and renal disease and to report high alcohol use, but significantly less likely to have a low vitamin D level and polypharmacy, after adjustment for age, sex and rural residency.

These well described risk factors contribute to fracture risk through two mechanisms: falls and secondary osteoporosis. Diabetes-related complications such as visual impairment, stroke and peripheral neuropathy can increase fracture risk.1 In renal dysfunction, osteoporosis is related to cortical thinning and uraemic osteodystrophy.2 Excessive alcohol intake at a young age among Indigenous people may affect peak bone mass.3 The effect of alcohol on liver cirrhosis, cognition, falls due to intoxication and peripheral neuropathy may contribute to fracture risk.

Risk stratification will be more robust if these results can be cross-validated in other institutions.

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Michelle M Y Lai, Geriatrician
Nicholas G Waldron, Geriatrician
1 Royal Perth Hospital, Perth, WA.
2 Armadale Kelmscott Memorial Hospital, Perth, WA.
m.lai@pgrad.unimelb.edu.au


