

Risk factors for fall-related major fractures in older patients: a retrospective review

Seong Min Kang^{1*}, Jae Young Lim^{2†}

Seoul National University Hospital, Department of Rehabilitation Medicine¹, Seoul National University Bundang Hospital, Department of Rehabilitation Medicine²

Objective

This study was to investigate risk factors for major fractures (compression fracture, femur neck fracture, and distal radius fracture) in elderly patients after fall-down.

Methods

This retrospective study was performed between January 2010 and December 2013. Data were collected from Injury Monitoring System in Emergency Department. The variables were the year of visit, age, sex, past medical history (including history of orthopedic surgery, osteoporosis and neurodegenerative disease), and diagnosis at the Emergency room (including major fractures) for the 4662 final patients sample who visited Emergency Department after a fall. Logistic regression model were used to evaluate the associated factors, and we further explored by repeating the analyses separately for those with and without osteoporosis.

Result

Age (OR=1.04), female gender (OR=2.50), history of orthopedic surgery (OR=2.03), and osteoporosis (OR=2.06) were associated with major fractures after fall-down. Female patients were at higher risk of major fracture than male patients. There was no significant difference in risk of major fracture between patients who had neurodegenerative disease and those who did not. The same statistical analysis was performed with patients who did not have osteoporosis, and female patients showed higher risk of major fracture than male patients (OR=2.49), with statistical significance ($p < 0.05$).

Conclusion

Previous Orthopedic surgery is a risk factor for fall related fractures, but neurodegenerative diseases were. Regardless of osteoporosis prevalent, women are most likely to suffer falls-related fractures. To prevent major fracture, customized care should be taken to those in older people in accordance of their medical history and gender. Medical therapy is needed to prevent or control osteoporosis, and appropriate orthotic support is recommended to provide safe environment for the patients who had recent orthopedic surgery.