

Oral Abstract

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Predictors of poor outcomes following osteoporotic fractures in elderly women and men: an 18 year prospective study

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While osteoporotic fractures increase both re-fracture and mortality risks, these outcomes are usually studied separately. This study examined the risk and predictors of either one or both outcomes following all clinical osteoporotic fractures over 18-years.

All subjects 60+ (n=1295) sustaining low-trauma fractures from Dubbo Osteoporosis Epidemiology Study were followed (April 1989- May 2007). Bone mineral density, postural stability, quadriceps strength, physical activity, co-morbidities, calcium intake, and smoking were assessed 2-yearly.

Cumulative incidences of re-fracture and mortality were computed, and predictors of these outcomes were assessed by Cox Proportional Hazards Model.

There were 952 fractures in women and 343 in men, followed by 290 re-fractures in women and 74 in men, and 461 deaths in women and 197 in men. Re-fracture and mortality risks, were highest in the first 5-8 years (Figure). By the end of 8 years 26 % women and 41% men had died, and 37% women and 24 % men re-fractured. A further, 50% women and 75% men with re-fractures died in this interval. Re-fracture and mortality continued to occur, such that by the end of the study there were only 20% event-free subjects.

Re-fracture independently increased mortality risk [women: 4.32 (3.40- 5.49) and men: 2.32 (1.43- 3.48)]. Other independent predictors included older age, lower femoral neck BMD, physical inactivity and more falls in women and older age, low calcium intake and quadriceps weakness in men.

This study has shown the cumulative risk of multiple adverse events following an initial fracture. Those who survive the initial fracture have increased re-fracture risk which further increases mortality risk.