Fractures and mortality in relation to different osteoporosis treatments.

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Abstract

OBJECTIVES: Few studies have assessed the effectiveness of different drugs for osteoporosis (OP). We aimed to determine if fracture and mortality rates vary among patients initiating different OP medications.

METHODS: We used the Medicare 5% sample to identify new users of intravenous (IV) zoledronic acid (n=1.674), oral bisphosphonates (n=32.626), IV ibandronate (n=492), calcitonin (n=2.606), raloxifene (n=1.950), or parathyroid hormone (n=549). We included beneficiaries who were ≥65 years of age, were continuously enrolled in fee-for-service Medicare and initiated therapy during 2007-2009. Outcomes were hip fracture, clinical vertebral fracture, and all-cause mortality, identified using inpatient and physician diagnosis codes for fracture, procedure codes for fracture repair, and vital status information. Cox regression models compared users of each medication to users of IV zoledronic acid, adjusting for multiple confounders.

RESULTS: During follow-up (median, 0.8-1.5 years depending on the drug), 787 subjects had hip fractures, 986 had clinical vertebral fractures, and 2.999 died. Positive associations included IV ibandronate with hip fracture (adjusted hazard ratio (HR), 2.37; 95% confidence interval (CI) 1.25-4.51), calcitonin with vertebral fracture (HR=1.59, 95% CI 1.04-2.43), and calcitonin with mortality (HR=1.31; 95%CI 1.02-1.68). Adjusted HRs for other drug-outcome comparisons were not statistically significant.

CONCLUSIONS: IV ibandronate and calcitonin were associated with higher rates of some types of fracture when compared to IV zoledronic acid. The relatively high mortality associated with use of calcitonin may reflect the poorer health of users of this agent.
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