

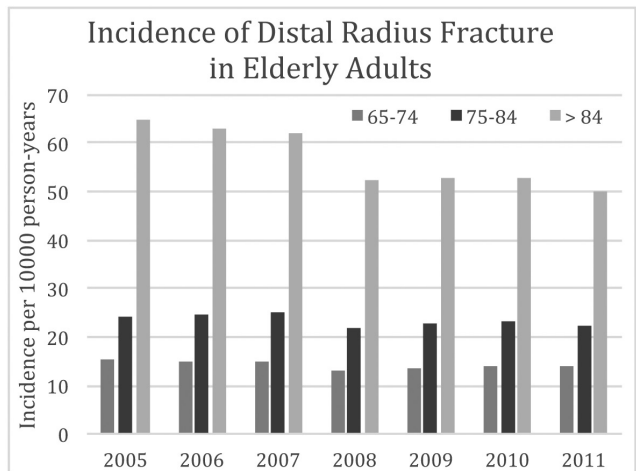
Decreasing Incidence and Changing Treatment of Distal Radius Fractures Among Elderly Adults

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Background/Purpose: Distal radius fracture (DRF) is the most common upper extremity fracture in the elderly population and a cause of significant morbidity. DRF has been linked to osteoporosis and to subsequent injury, including hip fracture. Several studies in the past two decades have described increases in absolute numbers and incidence of DRF across age groups, including the elderly, but neither recent trends of incidence nor data on treatment in elderly adults in the US are available. It is not well known if recent emphasis on diagnosing and treating bone mineral density changes in elderly adults has impacted the incidence or treatment of DRF.

Methods: US Medicare enrollees who were diagnosed with DRF between 2005 and 2011 were identified by searching ICD-9 diagnosis codes in a comprehensive Medicare hospital claims dataset via the PearlDiver Database (PearlDiver Technologies, Fort Wayne, IN). Treatment of DRF was identified in a 5% Medicare Patient Sample using CPT codes for closed and open fixation. Rates of treatments were compared relative to each other for analysis. Additional procedures and diagnostic testing performed on patients before and after diagnosis of DRF were analyzed. Fractures were stratified according to patient demographics, and comorbidities within this population were examined.

Results: *Incidence of DRF:* Between 2005 and 2011, 571,384 patients diagnosed with DRF were identified in the Medicare population. Total numbers of DRF increased 6.70% from 83,512 in 2005 to 89,107 in 2011, but the incidence fell 7.17% from 19.65 to 18.24 per 10,000 person-years over the same period. The age group with the largest decrease in incidence was patients age 85 years and older, with a 22.93% decrease from 64.67 to 49.84 per 10,000 person-years. Incidence in females was higher than in males, and both groups had decreased incidence of DRF from 2005 to 2011. Incidence in the Northeastern US decreased 9.12% while increasing 4.33% in the Western US. In the year prior to DRF, a diagnosis of osteoporosis was present in 11.0% of patients, low vitamin D in 1.8%, and tobacco use in 4.7%. Dual x-ray absorptiometry scan was performed in 6.73% in the year before DRF and 8.50% in the year after DRF. *Treatment of DRF:* In the 5% Medicare sample, 29,570 patients were treated with closed or open fixation for DRF from 2005 to 2011. Closed



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treatment represented 79.6% of the total treated, but the proportion treated with open fixation rose from 21.2% in 2007 to 29.4% in 2011. Trends in treatment of various fracture patterns were examined, as were regional and gender variation in treatment.

Conclusion: Despite increases in absolute numbers of DRF from 2005 to 2011 in US elderly adults, the incidence of DRF has decreased over the same period. Treatment trends show increased open fixation in this population. While increasing emphasis on osteoporosis may be affecting trends in DRF in elderly adults, this decreasing incidence and changing surgical management deserve further investigation.

- The FDA has not cleared this drug and/or medical device for the use described in this presentation (i.e., the drug or medical device is being discussed for an "off label" use). For full information, refer to page 600.