

More About Bisphosphonates and Atypical Femur Fractures

Long-term bisphosphonate use was associated with a small increase in relative risk.

Several case series have described atypical femur fractures after long-term use of bisphosphonate drugs for osteoporosis ([JW Gen Med Dec 15 2009](#)); the presumed mechanism is oversuppression of bone remodeling. Recently, data from three randomized placebo-controlled trials of bisphosphonate therapy did not confirm this observation, but the analysis lacked power to demonstrate differences in rare outcomes ([JW Gen Med Apr 27 2010](#)).

Now, researchers in Ontario, Canada, have conducted a population-based, nested case-control study. Case patients were 716 women (age, ≥ 68) who received bisphosphonates and suffered atypical (femoral shaft or subtrochanteric) fractures during 7 years. Controls were 3580 age-matched bisphosphonate recipients without fractures. Duration of bisphosphonate exposure, ranging from transient (<100 days) to long-term (>5 years), was recorded for each woman. In adjusted analyses, long-term bisphosphonate therapy, compared with transient treatment, was associated with significant excess risk for atypical femur fractures (odds ratio, 2.74). However, the absolute risk was low: Two of every 1000 women who had taken bisphosphonates for 5 years developed atypical fractures during the ensuing 2 years. In contrast, long-term bisphosphonate therapy was associated with lower risk for typical femoral neck or intertrochanteric fractures (adjusted OR, 0.76), which were 14 times more common than atypical fractures in this population.

Comment: In this study, long-term bisphosphonate therapy was associated with a small increase in relative risk for atypical femur fractures. As long as bisphosphonates are prescribed appropriately to women with osteoporosis (or those at high fracture risk as determined by the [FRAX tool](#); [JW Gen Med Apr 8 2008](#)), the benefits (lower incidence of common typical fractures) should outweigh the harms (potentially more uncommon atypical fractures). However, for lower-risk women without osteoporosis, risks of bisphosphonates might outweigh benefits.

— [Allan S. Brett, MD](#)

Published in [Journal Watch General Medicine](#) March 3, 2011