

## Use of proton pump inhibitors and risk of osteoporosis-related fractures

N°103 – October 2009

The use of proton pump inhibitors has been associated with an increased risk of hip fracture. The authors of a recent study [1] sought to further explore the relation between duration of exposure to proton pump inhibitors and osteoporosis-related fractures. They used administrative claims data to identify patients with a fracture of the hip, vertebra, or wrist between April 1996 and March 2004. Cases were each matched with 3 controls based on age, sex, and comorbidities. They calculated adjusted odds ratios (OR) for the risk of hip fracture and all osteoporosis-related fractures for durations of proton pump inhibitor exposure ranging from 1 or more years to more than 7 years.

The authors matched 15 792 cases of osteoporosis-related fractures with 47 289 controls. They did not detect a significant association between the overall risk of an osteoporotic fracture and the use of proton pump inhibitors for durations of 6 years or less. However, exposure of 7 or more years was associated with increased risk of an osteoporosis-related fracture (adjusted OR 1.92,  $P = 0.011$ ). They also found an increased risk of hip fracture after 5 or more years of exposure (adjusted OR 1.62,  $P = 0.04$ ), with even higher risk after 7 or more years exposure (adjusted OR 4.55,  $P = 0.002$ ).

Use of proton pump inhibitors for 7 or more years is associated with a significantly increased risk of an osteoporosis-related fracture. There is an increased risk of hip fracture after 5 or more years exposure. Further study is required to determine the clinical importance of this finding and to determine the value of osteoprotective medications for patients associated with long-term use of proton pump inhibitors.

1. Laura E. Targownik LE et al. *CMAJ*. 2008; 179: 319-326.

### Use of proton pump inhibitors and risk of osteoporosis-related fractures

Proton pump inhibitors inhibit the production and intragastric secretion of hydrochloric acid. This treatment is believed to be an important mediator of calcium absorption in the small intestine and to impair calcium transport. Long-term use of proton pump inhibitors increases the risk of vertebral, hip and wrist fracture. These effects were significant when treatment was taken during 7 years or more.

It will be useful to determine the value of osteoprotective medications for patients associated with long-term use of proton pump inhibitors

