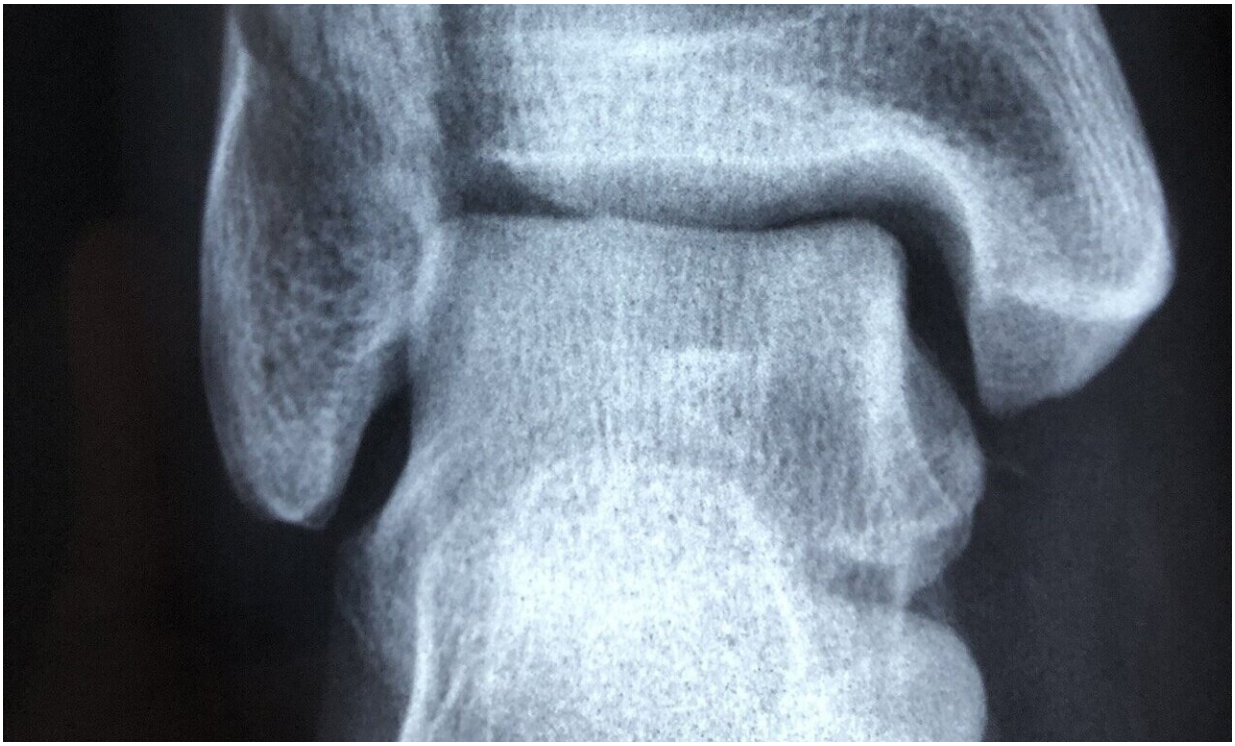
Acid reflux drugs linked to increased fracture risk in kids

March 17 2020



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Proton pump inhibitors—a widely used class of drugs used to treat acid reflux and related symptoms—may lead to an increased risk of fractures in children and adolescents, reports a study in the *Journal of Pediatric Gastroenterology and Nutrition (JPGN)*.

"This study suggests an increased risk of fracture among otherwise healthy pediatric patients exposed to PPIs," according to the new research, led by Nathan Robert Fleishman, MD, Children's Mercy Kansas City in Kansas City, Mo. The researchers believe their findings have important implications for the care of children taking PPIs—especially long-term users.

As in Adults, PPIs May Increase Fracture Risk in Children

The study included data on children and adolescents, average age four years, receiving care at 51 US children's hospitals from 2011 to 2015. Data were drawn from the cooperative Pediatric Hospital Information System database. A total of 32,001 care encounters where the patient received a PPI were matched to the same number of encounters without PPI use. The study excluded patients with complex chronic conditions, or with conditions or medications predisposing to fracture risk.

The analysis showed a significantly higher fracture rate in children exposed to PPIs: 1.4 percent, compared to 1.2 percent in those not exposed to PPIs. The authors performed a further analysis to adjust for differences in patient characteristics, including sex, race, insurance status, and type and intensity of care encounter.

In this adjusted analysis, the odds of fracture remained significantly higher in children exposed to PPIs: adjusted odds ratio 1.2. In other words, all other risk factors being equal, the probability of fracture would be 20 percent higher in a child taking PPIs.

In both groups, the upper extremity (arm and hand) was the most common fracture location. However, children exposed to PPIs were more likely to have fractures of the lower extremity (leg and foot), ribs,

or spine. In both groups, fractures were most common in one- to three-year and nine-to-13-year age groups. The findings suggested a "class effect" of PPIs: fracture risk was increased with all PPIs, not any particular drug or combination of drugs.

"While our findings are statistically significant, the relative risks are small," Dr. Fleishman comments. "However, our study design tended to underestimate the actual risk."

Proton pump inhibitors are widely used to treat acid reflux and other upper intestinal disorders in children as well as adults. Commonly used PPIs include lansoprazole, omeprazole, and esomeprazole—all of which are available over-the-counter, as well as by prescription.

Although PPIs have historically been considered "exceptionally safe," several reports have suggested that they may be implicated in a wide range of complications. In adults, PPIs have been linked to a small but significant increase in the risk of fractures, especially with long-term use. Only a few studies have looked at PPIs and fracture risk in children, with mixed results.

"Our study highlights the need to limit the use of PPIs to individuals who are clearly benefiting and for the least duration necessary," comments study coauthor Thomas Attard, MD. "Additionally, children who are on these medications long-term warrant ongoing follow up." The researchers hope the findings will stimulate further research and strategies to limit fracture risk in children who require PPIs for longer periods of time.

"Proton pump inhibitors are effective medications and have an important role in the treatment of specific diseases," Dr. Fleishman adds. "We should be aware of the potential side effects of these (and all) medications we prescribe. We owe it to our patients to ensure we are

continually evaluating the risks and benefits of our treatments in the context of their disease course."

More information: Fleishman, Nathan et al. The Clinical Characteristics of Fractures in Pediatric Patients Exposed to Proton Pump Inhibitors. *Journal of Pediatric Gastroenterology and Nutrition* March 12, 2020. DOI: 10.1097/MPG.0000000000002690