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Pediatric PPI Use and Fractures

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BACKGROUND

- Proton pump inhibitors (PPI) are one of the most widely prescribed classes of medications
- Increasing reports of safety concerns regarding PPI use including the risk of fracture
- Limited studies examining risk among pediatric patients

STUDY AIMS

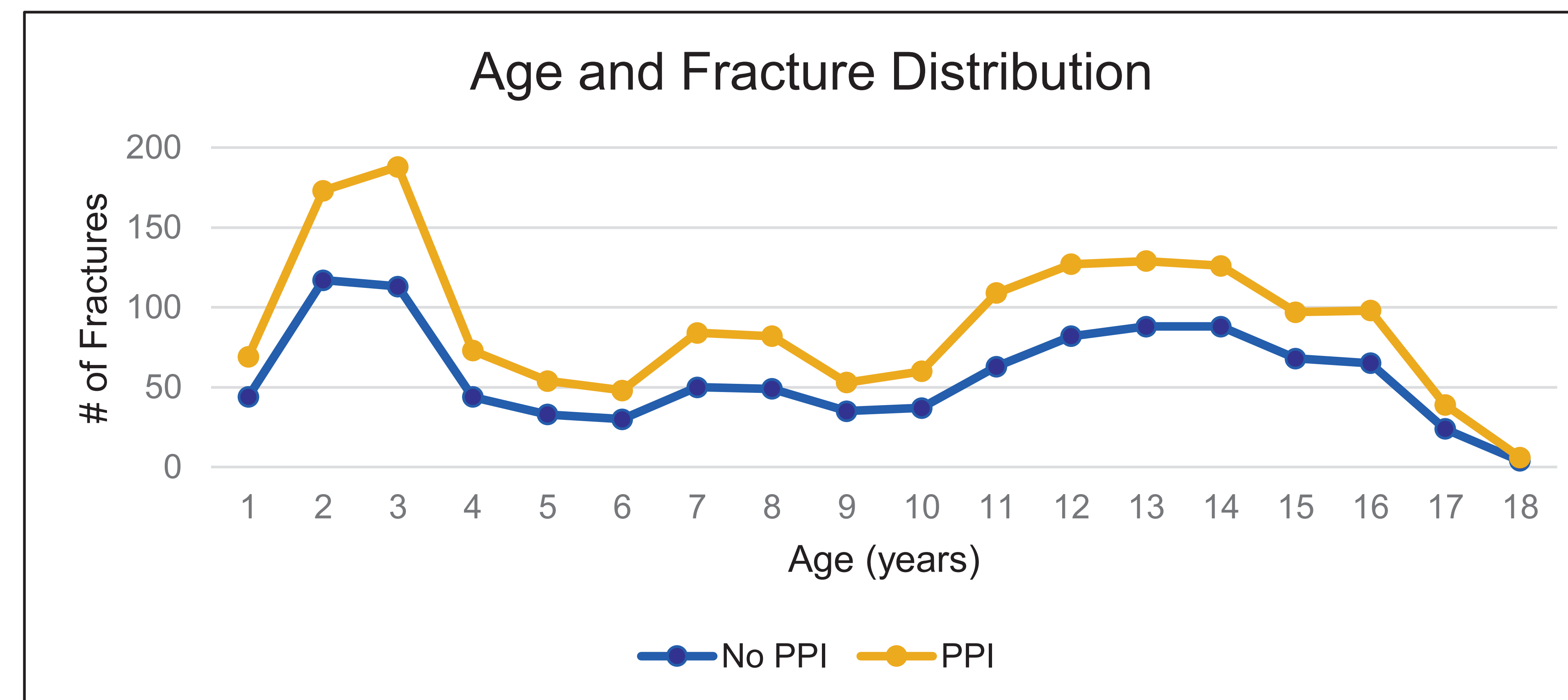
- Compare rate of fracture among pediatric patients exposed to PPI to rate among patients without exposure
- Determine if fracture location differs among children exposed to PPI

METHODS

- Retrospective propensity-matched analysis using Pediatric Health Information Systems database
- Initial encounters for patients 6 months to 15.5 years between 06/01/2011 to 12/31/2015
- Patients evaluated over 2-year period for encounter resulting from fracture
- Extensive exclusion criteria of conditions and medications which could increase the risk of fracture were applied

FINDINGS

- 32,001 encounters with documented PPI use were propensity matched to the same number of encounters with no PPI documented
- Statistically significant higher rate of fractures among the PPI exposed group (1.4% vs 1.2%, $p = 0.019$)
- Adjusting for remaining differences in sex, race, encounter type, payer, and resource intensity after matching, this remained statistically significant ($p = 0.017$ OR (95% CI) of 1.2 (1.0,1.4))
- PPI cohort more likely to suffer from lower extremity, rib, and spinal fractures ($p = 0.01$)
- No relationship between fracture risk and individual PPIs ($p = 0.205$)



CONCLUSIONS

- There may be an increased risk of fracture among otherwise healthy pediatric patients taking PPI
- Serious consideration of fracture risk should be considered prior to prescribing PPI to pediatric patients
- Future studies examining mechanism of PPI effects on bone health are needed

RESOURCES

- Diaz DM, Winter HS, Colletti RB, et al. Knowledge, attitudes and practice styles of North American pediatricians regarding gastroesophageal reflux disease. *J Pediatr Gastroenterol Nutr.* 2007;45(1):56-64
- Vestergaard P, Rejnmark L, Mosekilde L. Proton pump inhibitors, histamine H2 receptor antagonists, and other antacid medications and the risk of fracture. *Calcif Tissue Int.* 2006;79(2):76-83
- Freedberg DE, Haynes K, Denburg MR, et al. Use of proton pump inhibitors is associated with fractures in young adults: a population-based study. *Osteoporos Int.* 2015;26(10):2501-2507

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