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Meta-analysis: risk of fractures with acid-suppressing medication.

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Source

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Abstract

AIMS:

Recent studies have suggested an increased risk of fractures with proton pump inhibitors (PPIs) and histamine-2 receptor antagonists (H2RAs). We planned to perform a meta-analysis of fractures in patients taking PPIs and H2RAs.

METHODS:

We searched MEDLINE and EMBASE in September 2010 for observational studies reporting on the risk of fractures with acid-suppressing medication (PPIs and H2RA). We also checked the references lists of included studies and regulatory authority websites for additional data. We performed random effects meta-analysis of odds ratios (OR) according to fracture type and conducted subgroup analyses by duration of exposure. Heterogeneity was assessed using the I(2) statistic.

RESULTS:

Our review included 12 studies covering 1,521,062 patients. Pooled analysis of PPI use showed significant risk for spine fractures (4 studies, OR 1.50, 95% CI 1.32-1.72, p<0.001, I(2)=0%) but this was not significant for H2RA (3 studies, OR 1.05, 95% CI 0.92-1.19, p=0.50, I(2)=0%). Similarly for hip fractures, there was a significant risk of fractures with PPIs (10 studies, OR 1.23, 95% CI 1.11-1.36, p<0.001, I(2)=72%), but not for H2RAs (9 studies, OR 1.12, 95% CI 0.99-1.27, p=0.06, I(2)=75%), respectively). Analysis of fractures overall (based on all 12 studies covering a mixture of fracture types) yielded an OR of 1.20 (95% CI 1.11-1.30, p<0.001, I(2)=78%) for PPIs, and OR of 1.08 (95% CI 1.00-1.18, p=0.06, I(2)=82%) for H2RA. However, aside from the risk of spine fractures, all the other analyses were limited by substantial heterogeneity. One study that reported on a direct comparison between acid-suppressing medications found an increased risk with PPIs vs. H2RA for hip fractures, OR 1.34 (95% CI 1.14-1.38).

CONCLUSION:

There is some evidence for a modest association between PPI use and risk of fractures, which was not seen with H2RA exposure. The association is most consistent for spine fractures, while there is substantial heterogeneity in the magnitude of risk for other fractures. Clinicians who are concerned about patients with high fracture risk may wish to consider the option of H2RAs instead of PPIs.

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