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Bisphosphonate Use and Risk of Gastrointestinal Tract Cancer: A Meta-analysis of Observational Studies

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Background

Recent observational studies have reported discrepant findings regarding the association between the oral bisphosphonate use and their risk of gastrointestinal cancers. We performed a meta-analysis using observational studies to systematically assess the association between oral bisphosphonate use and the development of gastrointestinal cancer risk.

Methods

We searched MEDLINE, EMBASE, and the Cochrane Library to identify studies through January 2011. Two evaluators independently reviewed and selected articles on the basis of pre-determined selection criteria.

Results

Out of 740 screened articles, 3 cohort studies and 3 case-control studies were included in the analyses. No significant association was found in a meta-analysis of all studies. (esophageal cancer: RR 0.96, 95% CI 0.65-1.42, gastric cancer: RR 0.89, 95% CI 0.71-1.13, colorectal cancer: RR 0.62, 95% CI 0.30-1.29). And also no statistical meaningful association was found in a meta-analysis of long term follow up case. (esophageal cancer: RR 1.74, 95% CI 0.97-3.10, gastric cancer: RR 0.54, 95% CI 0.24-1.18, colorectal cancer: RR 0.61, 95% CI 0.28-1.35)

Interpretation

Oral bisphosphonate use was found to have no significant effect on gastrointestinal cancer risk in our meta-analysis of observational studies. Further trials with long term follow up and randomized-controlled are needed to specifically test the effect of oral bisphosphonate.