

Helicobacter pylori eradication therapy to prevent gastric cancer in healthy asymptomatic infected individuals: systematic review and meta-analysis of randomised controlled trials

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Abstract

Objectives To determine whether searching for *Helicobacter pylori* and treating with eradication therapy leads to a reduction in incidence of gastric cancer among healthy asymptomatic infected individuals.

Design Systematic review and meta-analysis of randomised controlled trials.

Data sources Medline, Embase, and the Cochrane central register of controlled trials were searched through to December 2013. Conference proceedings between 2001 and 2013 were hand searched. A recursive search was performed with bibliographies of relevant studies. There were no language restrictions.

Eligibility criteria for selecting studies Randomised controlled trials examining the effect of at least seven days of eradication therapy on subsequent occurrence of gastric cancer in adults who tested positive for *Helicobacter pylori* but otherwise healthy and asymptomatic were eligible. The control arm had to receive placebo or no treatment. Subjects had to be followed for ≥ 2 years.

Main outcome measures Primary outcome, defined a priori, was the effect of eradication therapy on the subsequent occurrence of gastric cancer expressed as a relative risk of gastric cancer with 95% confidence intervals.

Results The search strategy identified 1560 citations, of which six individual randomised controlled trials were eligible. Fifty one (1.6%) gastric cancers occurred among 3294 individuals who received eradication therapy versus 76 (2.4%) in 3203 control subjects (relative risk 0.66, 95% confidence interval 0.46 to 0.95), with no heterogeneity

between studies ($I^2=0\%$, $P=0.60$). If the benefit of eradication therapy was assumed to persist lifelong the number needed to treat was as low as 15 for Chinese men and as high as 245 for US women.

Conclusions These data provide limited, moderate quality evidence that searching for and eradicating *H pylori* reduces the incidence of gastric cancer in healthy asymptomatic infected Asian individuals, but these data cannot necessarily be extrapolated to other populations.