

Review: *Helicobacter pylori* therapy does not reduce symptoms in nonulcer dyspepsia

Laine L, Schoenfeld P, Fennerty MB. Therapy for *Helicobacter pylori* in patients with nonulcer dyspepsia. A meta-analysis of randomized, controlled trials. *Ann Intern Med*. 2001 Mar 6;134:361-9.

QUESTION

In patients with nonulcer dyspepsia, how effective is *Helicobacter pylori* therapy in reducing symptoms?

DATA SOURCES

Studies were identified by searching MEDLINE and HealthSTAR (1984 to 1999); reviewing proceedings from the annual meetings of the American Gastroenterological Association, the American College of Gastroenterology, and the European *H. pylori* Study Group from 1995 to 1999; reviewing the bibliographies of relevant papers; and contacting manufacturers of medications for *H. pylori* and experts in the field (no additional studies were identified in this manner).

STUDY SELECTION

Studies were selected if they were randomized controlled trials evaluating the effectiveness of combination therapy for *H. pylori* in patients with nonulcer dyspepsia and *H. pylori* infection. The trials had to have at least 1 month of follow-up after the end of therapy and had to assess symptoms of nonulcer dyspepsia.

DATA EXTRACTION

Data were extracted in duplicate on patient characteristics, intervention, study design and duration, methodologic quality, and outcomes.

MAIN RESULTS

10 studies met the selection criteria. The primary outcome was greater treatment success with *H. pylori* eradication therapy than with control therapy. 7 studies provided data on the proportion of patients who had treatment success in the treatment and control groups at least 1 month after completion of *H. pylori* eradication therapy. Success rates were similar in the 2 groups (Table), but heterogeneity was present. Heterogeneity resolved with the exclusion of 1 trial, but the difference in treatment

success was still statistically nonsignificant. Success rates between the groups did not differ when only those trials that used a specifically stated definition of dyspepsia were combined or when only those trials in which treatment resulted in cure rather than persistent infection were combined.

CONCLUSION

Helicobacter pylori therapy in patients with nonulcer dyspepsia and *Helicobacter pylori* infection does not reduce symptoms.

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For correspondence: Dr. L. Laine, Gastrointestinal Division, Department of Medicine, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles, CA 90033, USA. FAX 323-226-7573. ■

Helicobacter pylori eradication therapy vs control therapy \geq 1 month after therapy in nonulcer dyspepsia*

Outcome	Weighted event rates		RBI (95% CI)	NNT
	Therapy	Control		
Treatment success	37%	33%	12% (-6 to 35)	Not significant

*Abbreviations defined in Glossary; RBI, NNT, and CI calculated from data in article.

COMMENTARY

Over the past 3 years, a number of large, high-quality studies have investigated the role of *H. pylori* eradication in nonulcer dyspepsia. Most, with 1 notable exception, have found no significant benefit, but small differences in response rates have encouraged the use of meta-analysis. The most recent high-quality meta-analysis found a small but significant benefit over placebo (1). Laine and colleagues' analysis found no benefit but omitted 4 studies included in the previous meta-analysis and included 5 previously excluded. In particular, the largest study by Malfertheiner and colleagues (2) was excluded. This study has only been published in abstract form but was probably excluded by failing to provide an adequate definition of treatment success. The results of this trial, however, strongly influenced the outcome of the earlier meta-analysis and explain the main difference in outcome.

Without a uniformly agreed-upon disease definition, outcome measure, or trial duration, and with innumerable possible treatment regimens, it is not surprising that different meta-analyses include different trials and have different outcomes. Of the 5 studies common to both analyses, only 1 showed a statistically significant benefit over placebo, but all but 1 had a greater proportion of patients who responded in the active-treatment group. Most studies chose a primary outcome of symptom resolution, which is better defined

and easier to compare between studies but obscures the fact that, even in the positive study, mean symptom scores were comparable between the 2 groups.

The contradictory results of the different trials and analyses say more about the heterogeneity of the disorder than they do about the quality of the trials. Few would argue that *H. pylori* can have more than a minor role in dyspepsia. Treatment seems to benefit most populations with a high background ulcer rate. We know that about 5% of *H. pylori*-infected persons develop an ulcer each year, and this rate may be higher in some populations. These patients would be classified as having nonulcer dyspepsia at screening, but they could then surreptitiously benefit from eradication by avoiding an ulcer.

John I. W. Jones, MA, MRCP
Chris J. Hawkey, DM, FRCP
University Hospital
Nottingham, England, UK

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