

# *Helicobacter pylori* in Peptic Ulcer Disease: Report of an NIH Consensus Conference

*Alfred O. Berg, MD, MPH*

### Assessment

Relevance of Topic: Important  
 Quality of Process: Poorly documented  
 Presentation: Clear, but not family-practice oriented  
 Clinical Usefulness: Unsatisfactory

Few family physicians can have missed the growing evidence that *Helicobacter pylori* and peptic ulcers are linked, probably causally. The revolution of thinking that peptic ulceration is an infectious disease can be fully appreciated only by physicians trained in the era when peptic ulcers were just as certainly thought to be caused by stress or diet.

In July 1994 the *Journal of the American Medical Association* published the conclusions of an National Institutes of Health (NIH) consensus conference on *H pylori* and peptic ulcers.<sup>1</sup> The panel considered six clinical questions and presented the answers as a group of recommendations with commentary.

### Background on Clinical Practice Guidelines

The Institute of Medicine has developed a set of desirable attributes for clinical practice guidelines that are followed by many groups and organizations, including the Agency for Health Care Policy and Research (Table 1).<sup>2</sup> David Eddy has provided further guidance by outlining a set of principles to be used in the development of clinical practice guidelines (Table 2).<sup>3</sup> These attributes and principles are used here to evaluate the recently published NIH consensus statement on *H pylori* and peptic ulcer disease.

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From the Department of Family Medicine, University of Washington School of Medicine, Seattle. Address reprint requests to Alfred O. Berg, MD, MPH, Department of Family Medicine, University of Washington, Box 356390, Seattle, WA 98195.

### Clinical Recommendations of the Consensus Panel

The consensus panel organized its specific recommendations as answers to the six questions outlined below. The three overall conclusions are summarized in Table 3.

#### 1. *What is the causal relation of H pylori to upper gastrointestinal disease?*

The panel believes that a causal association between *H pylori* and chronic superficial gastritis has been established. Although a causal linkage between *H pylori* and peptic ulceration has strong support, the panel notes that the majority of infected individuals do not develop ulcers, implying

**Table 1. Desirable Attributes of Clinical Practice Policies.**

Clarity	Multidisciplinary process
Clinical applicability	Reliability or reproducibility
Clinical flexibility	Scheduled review
Documentation	Validity

From Field and Lohr.<sup>2</sup>

**Table 2. Principles for Developing Clinical Policies.**

1. Precisely define the clinical problem, including the population for whom the clinical policy is to be developed.
2. Estimate the outcomes of a proposed intervention (test, treatment) and weigh the desirability of these outcomes to the patient.
3. Estimate the effect of the intervention on all pertinent outcomes.
4. Estimate how outcomes might vary among different patients with different characteristics.
5. Base all estimates on available scientific evidence.
6. Use formal methods to analyze outcomes and outcome estimates.
7. Assess patient preferences for different outcomes and incorporate into eventual policy.

Reprinted with permission, from Eddy.<sup>3</sup>

**Table 3. National Institutes of Health Consensus Conference Panel Overall Conclusions.**

1. Ulcer patients with *H pylori* infection should be prescribed antimicrobial agents in addition to antisecretory drugs whether on first diagnosis of the illness or on recurrence.
2. The value of treatment of *H pylori* infection in patients with nonulcerative dyspepsia remains to be determined.
3. The interesting relation between *H pylori* infection and gastric cancers requires further exploration.

Adapted from the NIH Consensus Conference.<sup>1</sup>

**Table 4. Unanswered Clinical Questions.**

1. When should *H pylori* infection be suspected?
2. What is the best way to evaluate for *H pylori* infection, considering test accuracy, patient preferences, and costs?
3. Which patients with *H pylori* infection should receive treatment?
4. What are the best regimens for treating *H pylori* infection, considering efficacy, side effects, patient preferences, and costs?
5. How can the physician and patient know that the treatment is effective?

that other factors are important. The strongest evidence for causation is that ulcer recurrence decreases markedly after eradicating the organism. The panel found no convincing evidence for an association between infection and nonulcer dyspepsia.

**2. How does one diagnose and eradicate *H pylori* infection?**

Diagnosis is not easy. Invasive tests (endoscopy and biopsy) are the reference standard, but non-invasive tests (serology and breath tests) are also said to have high sensitivity and specificity. There is no readily available, inexpensive, and accurate test for documenting either the initial diagnosis or successful treatment.

A number of antibiotic treatment regimens have been tested. They include bismuth subsalicylate, tetracycline, metronidazole, amoxicillin, ranitidine, and omeprazole in various combinations, and they have achieved eradication rates of 80 to 90 percent. Rates of microbial resistance to metronidazole are high, especially in developing countries.

**3. Does eradication of *H pylori* infection benefit the patient with peptic ulcer disease?**

The principal benefit is the reduction of ulcer recurrence to low levels (less than 10 percent).

The panel notes that economic analyses of treating the infection have not been done but that the cost savings with treatment might be substantial.

**4. What is the relation between *H pylori* infection and gastric malignancy?**

The panel notes epidemiologic evidence—especially from cohort studies—that *H pylori* is also associated with gastric cancer but points out the importance of other factors and the lack of any evidence that treating the infection lowers cancer risk.

**5. Which *H pylori*-infected patients should be treated?**

The panel recommends treatment for infected individuals with ulcers but does not recommend treatment for infected individuals with nonulcerative dyspepsia.

**6. What are the most important questions that must be addressed by future research in *H pylori* infections?**

The panel presents a number of research questions: when to examine a patient for infection; whether empirical treatment is ever indicated; whether treatment reduces the risk of cancer; the value of testing to document eradication; and comprehensive cost analyses.

**Commentary**

The NIH consensus development process has always been, and remains today, informal and implicit, contrasting sharply with the formal and explicit methods recommended by the Institute of Medicine and by David Eddy. The published consensus statement on *H pylori* infection and peptic ulcer disease has few of the characteristics of an evidence-based and patient outcomes-oriented clinical practice guideline. Although some of the information is scattered throughout the text, the reader searching for clarity on the clinical outcomes, flexibility, documentation, evidence of a multidisciplinary approach, statements about reliability or reproducibility, future review, and validity of the process will be disappointed (Table 1). Further, the specific process principles of Eddy are not a part of the NIH consensus development process (Table 2). The lack of any bibliographic citations in the text (a separate bibliography is available from the National Library of Medicine) is a serious shortcoming of this and other NIH consensus statements: none of the

facts and assertions about the facts are easily traceable. The consensus statement is a black box in that the inputs, internal processes, and outputs are not disclosed.

### Clinical Summary

The family physician wants to know exactly when to suspect *H pylori* infection, how to evaluate for it, when and how to treat it, and how to know whether the treatment worked (Table 4). None of these questions are satisfactorily answered by the NIH consensus statement. In fairness, one must point out that the scientific evidence answering the salient questions might not be available; although with the lack of a formal and documented process in the published consensus document, it is impossible to tell how close we might be to the answers.

### Conclusion

The NIH consensus statement on *H pylori* infection and peptic ulcer disease leaves the family physician no further ahead clinically than he or she might have been before reading it. There is considerable variation in the approach family

physicians and their consultant gastroenterologists take toward *H pylori*. Some aggressively attempt to make the diagnosis and treat any patient with dyspepsia. Some, like the author of an editorial accompanying the consensus statement,<sup>4</sup> pursue the diagnosis only when the more standard diagnostic and therapeutic approaches have failed. The consensus statement does not assist in objectively choosing between the available alternatives.

### References

1. NIH Consensus Conference. *Helicobacter pylori* in peptic ulcer disease. NIH Consensus Development Panel on *Helicobacter pylori* in Peptic Ulcer Disease. JAMA 1994;272:65-9.
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3. Eddy DM. A manual for assessing health practices and designing practice policies: the explicit approach. Philadelphia: American College of Physicians, 1992.
4. Feldman M. The acid test. Making clinical sense of the consensus conference on *Helicobacter pylori*. JAMA 1994;272:70-1.