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## The Toronto Consensus for the Treatment of *Helicobacter pylori* Infection in Adults

Carlo A. Fallone  , Naoki Chiba, Sander Veldhuyzen van Zanten, Lori Fischbach, Javier P. Gisbert, Richard H. Hunt, Nicola Jones, Craig Render, Grigorios I. Leontiadis, Paul Moayyedi, John K. Marshall

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


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## Abstract

### Background & aims

*Helicobacter pylori* infection is increasingly difficult to treat. The purpose of these consensus statements is to review the literature and provide specific, updated recommendations for eradication therapy in adults.

### Methods

A systematic literature search identified studies on *H. pylori* treatment. The quality of evidence and strength of recommendations were rated according to the Grading of Recommendation Assessment, Development, and Evaluation (GRADE) approach. Statements were developed through an online platform, finalized and voted on by an international working group of specialists chosen by the Canadian Association of Gastroenterology.

### Results

Because of increasing failure of therapy, the consensus group strongly recommended that all *H. pylori* eradication regimens now be given for 14 days. Recommended first-line strategies include concomitant non-bismuth quadruple therapy (proton pump inhibitor, PPI + amoxicillin + metronidazole + clarithromycin, PAMC), and traditional bismuth quadruple therapy (PPI + bismuth + metronidazole + tetracycline, PBMT). PPI triple therapy (PPI + clarithromycin and either amoxicillin or metronidazole) was restricted to areas with known low clarithromycin resistance or high eradication success with these regimens. Recommended rescue therapies include PBMT and levofloxacin-containing therapy (PPI + amoxicillin + levofloxacin, PAL). Rifabutin regimens should be restricted to patients who fail at least 3 prior options.

### Conclusions

Optimal treatment of *H. pylori* requires careful attention to local antibiotic resistance and eradication patterns. Quadruple therapies PAMC or PBMT should play a more prominent role in *H. pylori* eradication and all treatments should be given for 14 days.

#### Keywords:

[Helicobacter pylori](#), [eradication](#), [resistance](#), [proton pump inhibitor](#), [amoxicillin](#), [bismuth](#), [clarithromycin](#), [metronidazole](#), [tetracycline](#), [levofloxacin](#), [rifabutin](#)

#### Abbreviations:

[CAG](#) (Canadian Association of Gastroenterology), [CHSG](#) (Canadian Helicobacter Study Group), [CI](#) (confidence interval), [GRADE](#) (Grading of Recommendation Assessment, Development and Evaluation), [HR](#) (hazard ratio), [ITT](#) (intention-to-treat), [MALT](#) (mucosa-associated lymphoid-tissue), [NNT](#) (number needed to treat), [OR](#) (odds ratio), [PPI](#) (proton pump inhibitor), [P-CAB](#) (potassium-competitive acid blocker), [PUD](#) (peptic ulcer disease), [RCT](#) (randomized controlled trial), [RD](#) (risk difference), [RR](#) (relative risk)

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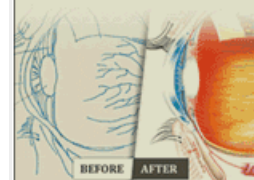
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*Abbreviations used in drug combinations:* A: amoxicillin; B: bismuth; C: clarithromycin; L: levofloxacin; M:

metronidazole; P: proton pump inhibitor; Q: quinolone; R: rifabutin; T: tetracycline

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