**Question**
In patients with dyspepsia, is 1-day quadruple therapy noninferior to 7-day triple therapy for eradication of *Helicobacter pylori* infection?

**Design**
Randomized (allocation concealed†), unblinded,* controlled trial with 5-week follow-up.

**Setting**
Ambulatory internal medicine clinics of 2 university-affiliated hospitals in Canton, Ohio, USA.

**Patients**
160 patients ≥ 18 years of age (mean age 50 y, 57% women) with dyspepsia and *H. pylori* infection who had a Glasgow Dyspepsia Severity Score (GDSS) of ≥ 3 (score range 0 to 20) and a positive carbon 14 urea breath test result. Exclusion criteria included previous treatment of *H. pylori* infection, pregnancy, personal or family history of gastrointestinal malignancy, antibiotic therapy in the previous 6 weeks, previous gastric surgery, and hepatic insufficiency. Follow-up was 94%.

**Intervention**
80 patients were allocated to a 1-day regimen of 2 tablets of bismuth subsalicylate, 262 mg each tablet, 4 times; 1 tablet of metronidazole, 500 mg, 4 times; amoxicillin suspension, 2 g, 4 times; and 2 tablets of lanoprazole, 30 mg each tablet, once (1-d regimen group); 80 patients were allocated to a 7-day regimen of 1 tablet of clarithromycin, 500 mg, twice daily; 2 tablets of amoxicillin, 500 mg each tablet, twice daily; and 1 tablet of lanoprazole, 30 mg, twice daily (7-d regimen group).

**Main Outcome Measures**
Eradication rates of *H. pylori*, changes in GDSS score, and adverse effects.

**Main Results**
All patients remained on their assigned treatment. 1-day therapy was not inferior to 7-day therapy for rates of eradication of *H. pylori* (Table). The mean baseline GDSS score was 11 (standard deviation [SD] 3.4) in the 1-day regimen group and 10 (SD 3.3) in the 7-day regimen group. The groups did not differ for mean change from baseline in GDSS scores (both groups had a mean decrease from baseline of 7.5). None of the patients in either group reported intolerance to their treatment, and rates of side effects did not differ between groups.

**Conclusion**
In patients with dyspepsia, a 1-day quadruple therapy regimen was not inferior to a 7-day triple therapy regimen for eradication of *Helicobacter pylori* infection.

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*See Glossary.
†Information provided by author.

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1-day quadruple therapy vs 7-day triple therapy for eradication of *Helicobacter pylori* infection in patients with dyspepsia at 5 weeks‡

<table>
<thead>
<tr>
<th>Outcome</th>
<th>1-day therapy</th>
<th>7-day therapy</th>
<th>Difference (95% CI)</th>
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<tbody>
<tr>
<td>Eradication</td>
<td>95%</td>
<td>90%</td>
<td>5% (−4 to 14)‡</td>
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</tbody>
</table>

‡Abbreviations defined in Glossary; CI calculated from data in article.

‡Not significant.

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**Commentary**

Dyspepsia is endemic and chronic. Most patients who are evaluated are diagnosed with nonulcer, or functional, dyspepsia. Systematic reviews support a modest benefit of *H. pylori* eradication in such patients, with perhaps 1 cure for every 15 patients treated (1). A Cochrane review concluded that the *H. pylori* test-and-treat approach may be less expensive and just as effective as endoscopy-based management in younger patients (< 45 y) without alarm symptoms (2).

Lara and colleagues showed similar efficacy of 1-day and standard 7-day treatment in achieving *H. pylori* eradication. Although dyspepsia symptoms improved, few patients had complete relief. If reproducible, a single-day course would likely have great advantages in cost, convenience, and adverse effects. However, the 95% eradication rate in this study was much higher than that of previous studies, with rates ranging from 20% to 83% (3).

We offer a few words of caution about this study. Most patients were > 45 years old and, under current guidelines, should have endoscopy to exclude cancer. Moreover, 1-day therapy may be insufficient to heal ulcers in the 10% to 15% subset of patients with dyspepsia and underlying peptic ulcer disease. An important question remains the symptom recurrence rate over time. Longer follow-up will be needed in future studies to address this.

The 1-day quadruple therapy, although intriguing, cannot be recommended based on current evidence. Until further studies are done with blinding to treatment allocation and longer follow-up, we recommend a minimum 7-day course of *H. pylori* treatment for patients with functional dyspepsia who choose the eradication option.

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**References**