

Low Dose, One-Week Triple Therapy (Lansoprazole, Amoxycillin, Clarithromycin) for Eradication of *Helicobacter pylori* Infection

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Abstract

Objective : To evaluate the efficacy and safety of low dose one week triple therapy with lansoprazole, amoxycillin and clarithromycin for the eradication of *Helicobacter pylori* (*H. pylori*).

Method : A total of 103 patients with *H. pylori* infection who had gastritis, duodenal ulcer (DU) or gastric ulcer (GU) received 1 week's triple therapy of lansoprazole 30 mg once daily (OD), amoxycillin 250 mg qid and clarithromycin 250 mg tid. The status of *H. pylori* infection was determined using the CLO test and histology (gram stain) of biopsy specimens during endoscopic examination.

Result : After treatment with triple therapy *H. pylori* infection was eradicated in 98 of 103 patients (95.15%), dyspeptic symptoms and upper gastrointestinal hemorrhage improved in 99 of 103 patients (96.1%). No adverse effect was observed in all the patients who received treatment.

Conclusion : Low dose one-week triple therapy with lansoprazole, amoxycillin and clarithromycin is effective for eradication of *H. pylori* infection.

Key word : *Helicobacter pylori*, Triple Therapy

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Many articles have reported on *Helicobacter pylori* eradication therapies with various drug combinations, dosage and duration of treatment. In 1997, the food and drug administration in the United States (FDA) permitted all the proposed eradication therapies,

although their treatment periods differed from each other^(1,2). The most commonly used antimicrobial agents were clarithromycin, amoxycillin, metronidazole and tinidazole⁽¹⁻⁴⁾. The most frequently used acid suppressors were proton pump inhibitors omepra-

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zole and lansoprazole. The dosage of omeprazole was reported from 40 mg to 80 mg and lansoprazole 30 mg to 60 mg⁽⁸⁻¹³⁾. There were concerns about the optimal dosage for proton pump inhibitors. Effective acid suppression enhanced the antimicrobial efficacy of antibiotics in the new triple therapy using proton pump inhibitors, because the cure rate of therapeutic regimens for *H. pylori* varies among different geographical regions and patient populations and individual regimens should be evaluated in specific patient populations. The efficacy of low dose, one week triple therapy has not been evaluated in Thailand. Therefore, in the present study, the efficacy of low dose, one week triple therapy using lansoprazole, amoxycillin and clarithromycin was evaluated.

MATERIAL AND METHOD

The present study was performed between May 1998 and Jan 2001 in Budhachinaraj Hospital. 103 *H. pylori* infected patients with gastritis, duodenal ulcer (DU) and gastric ulcer (GU), diagnosed by endoscopy were enrolled in this study. The presence of *H. pylori* infection was confirmed by biopsy at the antrum with rapid urease test (CLO test, Delta West Co, Bently Australia) and histology (gram's stain smear). Patients were considered to have *H. pylori* infection if either one of these tests was positive. If both CLO test and gram stain smear were negative for *H. pylori*, patients were classified as *H. pylori* negative. Patients with negative tests for *H. pylori* were excluded from the study. Patients with *H. pylori* infection were assigned to receive eradication therapy with a one week regimen of lansoprazole 30 mg OD, amoxycillin 250 mg qid and clarithromycin 250 mg tid. On the last day of the treatment, repeated endoscopies and antral biopsies with *H. pylori* test were performed. Patients were also interviewed for clinical responses and adverse reactions on the same day.

RESULTS

Of the 103 patients, there were 62 men, mean age 46 years (range 20-76 years, and 41 women, mean age 51 years (range 24-82 years). Baseline characteristics of the study population are shown in Table 1. The patients' symptoms were mainly abdominal pain or dyspepsia (80.5%) and the second presenting symptom was upper gastrointestinal hemorrhage (68%). Characteristic endoscopic findings in study population are shown in Table 2. The most common endoscopic finding was a combination of gastritis and duodenitis which accounted for 51.4 per cent of the patients with *H. pylori* infection. The combination of gastritis and GU or DU was found to be 27.1 per cent.

The results of the treatment are shown in Table 3. Eradication of *H. pylori* was 95 per cent (98 of 103). Symptoms improved in 96.1 per cent (99 of 103). Improvement of gastritis and no ulcer accounted for 59 patients. Scarring stage of DU and GU was seen in 9 patients. Healing stage of DU or GU was found in 35 patients. No patient was lost to follow-up. No adverse event was found in the study.

DISCUSSION

A recent trend in eradication treatment for *H. pylori*, the so called triple therapy, consisting of a proton pump inhibitor and two antimicrobials has been reported to provide a high cure rate: about 90-95 per cent, with few adverse effects⁽¹⁻⁷⁾. Many different therapeutic regimens of this combination have been reported in the quest for optimal choice of drugs, dosage and duration of treatment⁽⁸⁻¹¹⁾. The combination of a proton pump inhibitor and two antibiotics with amoxycillin and clarithromycin has been one of the most popular regimens and has shown satisfactory results. One week of omeprazole, amoxycillin and clarithromycin (OAC) or lansoprazole-AC (LAC) yields a similar cure rate^(12,13). The authors examined

Table 1. Patient characteristics of the treatment group.

	Number	%
Mean age-group (range)	46.5 (20-76)	-
Male/female	62/41	-
Abdominal pain or dyspepsia	83	80.5
Upper gastrointestinal hemorrhage (Melena or hematemesis)	70	68
Non steroidal anti-inflammatory drug user	80	77.6
Associated other		
Disease gall stone	1	0.97
Carcinoma of colon	1	0.97

Table 2. Endoscopic diagnosis.

	Number	%
Gastritis and duodenitis	53	51.4
Gastric ulcer	9	8.7
Duodenal ulcer	11	10.6
GU and DU	2	1.9
Gastritis and GU or DU	28	27.1

GU = gastric ulcer, DU = duodenal ulcer

Table 3. Result of treatment.

	Number	%
Eradication	98	95.15
Symptoms improved	99	96.1

the usefulness of low dose lansoprazole, amoxycillin and clarithromycin in one week therapy for the eradication of *H. pylori* infection.

Both omeprazole and lansoprazole have anti-urease activity and an antimicrobial effect against *H. pylori*. These effects have been shown to be more potent with lansoprazole than omeprazole. The authors previously reported that low dose, one-week triple therapy (lansoprazole, amoxycillin, clarithromycin) and two-week omeprazole-AC (OAC) regimens were both similarly effective in the eradication *H. pylori*

infection (above 90%)(14). There were fewer patients in the previous study, so the authors enrolled a larger number of patients with low dose triple therapy (LAC). In the present study, the authors assigned 103 patients who had *H. pylori* infection and eradication *H. pylori* with triple therapy one week using lansoprazole low dose (30 mg OD) and 2 antibiotics: low dose amoxycillin (250 mg q id), low dose clarithromycin (250 mg tid). The present study provided a high eradication rate of *H. pylori* (95%). This one week low dose triple therapy provides a cure rate similar to the standard one and two week regimen. Furthermore, no adverse effects were reported in the present study, and almost all symptoms were improved. In a similar study with standard triple therapy with lansoprazole 30 mg bid, amoxycillin 1,000 mg bid and clarithromycin 500 mg bid the eradication rate was 95 per cent which is the same rate as in the present study. Generally, a simple regimen of low dose and short duration is convenient and preferable for patients and results in improved compliance. With the low dose one week regimen, besides the above mentioned benefits, cost-effectiveness in the treatment of *H. pylori* infection was lower.

In conclusion, the authors demonstrated that the efficacy of a PPI/AC regimen with 30 mg of lansoprazole OD, 1,000 mg of amoxycillin OD and 750 mg of clarithromycin OD is at least comparable to the standard dose of one week triple therapy in the eradication of *H. pylori* and can be recommended for the eradication *H. pylori* infection.

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การกำจัดเชื้อ *Helicobacter pylori* โดยใช้ยา Low dose, one-week triple therapy 1 สัปดาห์

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วัตถุประสงค์ : เพื่อศึกษาประสิทธิผลในการรักษาผู้ป่วยที่ติดเชื้อ *Helicobacter pylori* โดยใช้ triple therapy ในขนาดต่ำ (lansoprazole, amoxycillin และ clarithromycin) 1 สัปดาห์

วิธีการศึกษา : เป็นการศึกษาในผู้ป่วยที่เป็น Gastritis, duodenal ulcer, gastric ulcer ร่วมกับการติดเชื้อ *Helicobacter pylori* โดยให้การรักษาด้วยวิธี triple therapy 1 สัปดาห์ lansoprazole 30 mg once daily, amoxycillin 250 mg qid และ clarithromycin 250 mg tid, การติดเชื้อ *Helicobacter pylori* ดูจาก CLO test, histology (gram stain) จากการ biopsy จาก Endoscopy

ผลการศึกษา : หลังการรักษาด้วย triple therapy พบว่าสามารถกำจัดเชื้อ *H. pylori* ได้ 98 รายจากผู้ป่วย 103 ราย (95%) อาการปวดท้องดีขึ้น และเลือดออกในกระเพาะหยุด 99 ราย (96.1%) ผู้ป่วย 5 ราย ยังคงพบเชื้อ *H. pylori* อยู่ ไม่พบผลข้างเคียงในผู้ป่วยทุกรายที่ได้รับการรักษา

สรุป : การให้ยา triple therapy ในขนาดต่ำ 1 สัปดาห์ มีประสิทธิภาพดีในการกำจัดเชื้อ *H. pylori*

คำสำคัญ : เฮลิโคแบคเตอร์ ไพโลไร, การรักษาด้วยยา 3 ชนิด

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