A high-dose infusion of omeprazole after endoscopic treatment of bleeding peptic ulcers reduced recurrent bleeding

Lau JY, Sung JJ, Lee KK, et al. **Effect of intravenous omeprazole on recurrent bleeding after endoscopic treatment of bleeding peptic ulcers.** N Engl J Med. 2000 Aug 3;343:310-6.

QUESTION

Does a high-dose infusion of omeprazole after endoscopic treatment of bleeding peptic ulcers reduce the rate of recurrent bleeding?

DESIGN

Randomized (allocation concealed*), blinded (investigators, patients, and outcome assessors),* placebo-controlled trial with 8-week follow-up.

SETTING

University hospital in Hong Kong.

PATIENTS

240 patients > 16 years of age (mean age 66 y, 67% men) who had completed successful endoscopic treatment of actively bleeding ulcers or ulcers with nonbleeding visible vessels (NBVVs) within 24 hours of hospital admission. Patients had endoscopic treatment with an epinephrine injection and thermocoagulation. Patients were excluded if endoscopic treatment was unsuccessful. Follow-up was 98%.

INTERVENTION

Patients were allocated to receive intravenous omeprazole, given as an 80-mg bolus injection and then a continuous infusion of 8 mg/h for 72 h (n = 120, omeprazole group), or intravenous placebo (n = 120). After the intravenous infusion, all patients were given oral omeprazole, 20 mg/d, for 8 weeks.

MAIN OUTCOME MEASURES

The primary outcome was recurrent bleeding. Secondary outcomes were length of hospital stay, units of blood transfused, death, and ulcer healing.

MAIN RESULTS

Analysis was by intention to treat. At 30 days, fewer patients in the omeprazole group had recurrent bleeding than did those in the placebo group ($P < 0.001$) (Table). More patients in the omeprazole group had a median hospital stay < 5 days ($P = 0.02$) (Table) than did those in the placebo group. Patients in the omeprazole group required fewer units of blood transfused in the 30 days after endoscopic treatment (2.7 vs 3.5, $P = 0.04$). Groups did not differ for death at 30 days (4% with omeprazole vs 10% with placebo, $P = 0.13$) or ulcer healing at 8 weeks ($P = 0.14$).

CONCLUSION

A high-dose infusion of omeprazole after endoscopic treatment of bleeding peptic ulcers reduced the rate of recurrent bleeding.

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For correspondence: Dr. S.C. Chung, Department of Surgery, Chinese University of Hong Kong, Prince of Wales Hospital, Shatin, Hong Kong, China. FAX 852-26350075.

*See Glossary.

Omeprazole vs placebo for recurrent bleeding in peptic ulcers after endoscopy at 30 days†

Outcomes	Omeprazole	Placebo	RRR (95% CI)	NNT (CI)
Recurrent bleeding	6.7%	22.5%	70% (39 to 86)	6 (4 to 14)
			RBI (CI)	
Hospital stay < 5 d	46.7%	31.7%	47% (7 to 105)	7 (4 to 38)

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

COMMENTARY

Physicians have used acid suppressants in patients with bleeding peptic ulcers since the first histamine-receptor antagonist (H_2RA) was made available. Despite their widespread use, the H_2RAs clearly do not prevent in-hospital recurrent bleeding. In vitro data suggest that 1 reason for their ineffectiveness is the inability of these agents to sufficiently raise gastric pH levels, leaving open the possibility that more powerful acid suppressants (i.e., the proton-pump inhibitors [PPIs]) might have better efficacy. Khuroo and colleagues (1) reported that high-dose oral omeprazole decreased recurrent bleeding from ulcers with an NBVV or an adherent clot. However, their patients did not receive endoscopic therapy, a widely used standard approach and a technique known to decrease recurrent bleeding. Lin and colleagues showed that parenteral omeprazole decreased recurrent bleeding in patients whose ulcer possessed an NBVV, even after endoscopic therapy (2). However, that study was not blinded. The blinded study by Lau and colleagues confirms the efficacy of parenteral omeprazole after endoscopic therapy. Efficacy was shown for patients with ulcers that were actively bleeding at the time of endoscopy and for those with an NBVV.

Whether these results can be extrapolated to patients in the western world is not known. In the West, patients generally produce more gastric acid, and PPIs may not effectively lower gastric acidity. Until further studies are available, I would recommend that patients who have an ulcer with an NBVV, an adherent clot, or active bleeding should be given high-dose PPI (equivalent to omeprazole, 40 mg twice daily) as soon as oral medications are permitted. Patients who have an ulcer with a red spot or clean base are at low risk for recurrent bleeding and do not need special therapy. The dose of PPI should be continued for 3 days, at which time the patient can be switched either to standard-dose PPI or to an H_2RA for ulcer healing. If patients are infected with *Helicobacter pylori,* appropriate therapy should be given.

Walter Peterson, MD
Veterans Affairs Medical Center
Dallas, Texas, USA

References

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2. **Lin HJ, Lo WC, Lee FY, Perng CL, Tseng GY.** A prospective randomized comparative trial showing that omeprazole prevents rebleeding in patients with bleeding peptic ulcer after successful endoscopic therapy. Arch Intern Med. 1998;158:54-8.