

Early infusion of high-dose omeprazole before endoscopy reduced the need for endoscopic therapy

Lau JY, Leung WK, Wu JC, et al. Omeprazole before endoscopy in patients with gastrointestinal bleeding. *N Engl J Med.* 2007; 56:1631-40.

Clinical impact ratings: Gastroenterology ★★★★★☆

QUESTION

In patients with bleeding peptic ulcers, does early intravenous (IV) infusion of high-dose omeprazole before endoscopy reduce the need for endoscopic therapy?

METHODS

Design: Randomized placebo-controlled trial.

Allocation: Concealed.*

Blinding: Blinded (clinicians, patients, {data collectors, outcome assessors, data analysts, and data safety and monitoring committee}†).*

Follow-up period: Up to 30 days from randomization.

Setting: Accident and Emergency Department (ED) at the Prince of Wales Hospital, Hong Kong, China.

Patients: 638 patients \geq 18 years of age who presented to the ED with upper gastrointestinal bleeding (melena or hematemesis with or without hypotension). Exclusion criteria included continued hypotensive shock despite resuscitation, allergy to proton pump inhibitors (PPIs), regular use of aspirin for cardiovascular protection, or pregnancy.

Intervention: Omeprazole (IV bolus injection, 80 mg followed by continuous infusion, 8 mg/h until endoscopic examination

the next morning) ($n = 319$), or matching placebo ($n = 319$).

Outcomes: Need for endoscopic therapy. Secondary outcomes were actively bleeding ulcers (spurting or oozing), all-cause mortality at 30 days, recurrent bleeding at 30 days, length of hospital stay, urgent endoscopy, emergency surgery, or blood transfusion.

Patient follow-up: 631 patients (mean age 62 y, 65% men) (99% included in the intention-to-treat analysis).

MAIN RESULTS

Fewer patients in the omeprazole group had endoscopic therapy and actively bleeding ulcers than did the placebo group (Table). The omeprazole group had more patients who stayed in hospital for < 3 days than did

the placebo group (Table). Groups did not differ for all-cause mortality, recurrent bleeding, urgent endoscopy, blood transfusion, or emergency surgery.

CONCLUSION

Early intravenous infusion of high-dose omeprazole before endoscopy reduced the need for endoscopic therapy and actively bleeding peptic ulcers.

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*See Glossary.

†Information provided by author.

Early intravenous infusion of high-dose omeprazole vs placebo before endoscopy in patients with bleeding peptic ulcers at first endoscopic examination†

Outcomes	Omeprazole	Placebo	RRR (95% CI)	NNT (CI)
Endoscopic therapy	19%	28%	33% (10 to 49)	11 (8 to 36)
Actively bleeding ulcers	6.4%	15%	56% (17 to 77)	13 (9 to 40)
RBI (CI)				
Hospital stay < 3 days	61%	49%	23% (7.0 to 42)	9 (5 to 30)

‡Abbreviations defined in Glossary. RRR, RBI, NNT, and CI calculated from control event rates and relative risks in article.

COMMENTARY

Although treatment with PPIs is often initiated for upper gastrointestinal bleeding (UGIB) before endoscopy establishes its cause, PPIs have previously been shown only to improve clinical outcomes among patients with bleeding ulcers (1). The study by Lau and colleagues showed that preendoscopic administration of high-dose IV PPI therapy reduced the proportion of patients with active bleeding at endoscopy, reduced the requirement for endoscopic therapy for ulcer bleeding, and shortened hospital stay. Although the study used IV omeprazole, which is not available in North America, any benefit from PPI therapy is likely to be a class effect. These results, however, may not necessarily be replicated in North America where a lower proportion of UGIB originates from ulcer disease than in Hong Kong. Furthermore, PPI therapy for ulcer bleeding has been shown to be more effective in studies performed in Asia than in those done elsewhere (1, 2).

Since initiation of IV PPI therapy for UGIB on first presentation carries minimal or no risk, it may be a reasonable strategy, although potentially expensive. Physicians should use the IV PPI that is available to them and give at least the same high dose used in this study (80 mg

bolus and 8 mg/h infusion). However, this is not a panacea and does not replace the need for adequate resuscitation, careful monitoring, and appropriate endoscopic management. PPI treatment should be discontinued for patients found at endoscopy not to have bled from an ulcer.

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References

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