Management of Duodenal Ulcer with Gastroesophageal Reflux Disease (GERD) with Intravenous Pantoprazole

Ari Fahrial Syam, Murdani Abdullah, Marcellus Simadibrata, Dadang Makmun, Chudahman Manan, Daldiyono Hardjodisasto

Division of Gastroenterology, Department of Internal Medicine, Faculty of Medicine, University of Indonesia/Dr. Cipto Mangunkusumo General National Hospital

ABSTRACT

Proton pump inhibitors (PPIs) are the most effective anti secretory drugs available for controlling gastric acid acidity and volume. They are the drug of choice in the treatment for gastro esophageal reflux disease (GERD), Helicobacter pylori eradication, peptic ulcer and non steroidal anti-inflammatory drug (NSAID) gastropathy: For acute cases, an intravenous PPI is needed, especially for hospitalized patient. Recently, intravenous pantoprazole represents an alternative to intravenous histamine-2 receptor antagonists. We observed 2 patients who were treated with pantoprazole for duodenal ulcer, where one case had a complication of bleeding with a history of long term use of NSAID. After two weeks of treatment with pantoprazole, significant lesion healing from endoscopy findings was achieved in both cases.

Keywords*: peptic ulcer - upper gastrointestinal bleeding – proton pump inhibitors – pantoprazole*

INTRODUCTION

Proton pump inhibitor (PPI) is currently the most effective acid suppression, replacing histamine-2 receptor antagonists (H_2RA). At this time, this group of drugs has become the standard treatment for gastroesophageal reflux disease (GERD), Helicobacter pylori eradication, peptic ulcer, and non-steroidal anti-inflammatory drug (NSAID) gastropathy.[1]

Pantoprazole, the fourth generation benzimidazole, is the newest PPI in the market right now. Pantoprazole has a low potential to interact with the liver cytochrome P450 enzyme, and thus has minimal interaction with other drugs. Several studies proved that this drug does not interact with theophyllin, caffeine, digoxin, nifedipine, glibenclamide, diclofenac, ethanol, warfarin, or carbamazepine. Thus, this drug may be administered in cases of heart disorders receiving anticoagulants and digoxin.[2]

Several studies have demonstrated that this drug is quite effective for the treatment of peptic ulcer, H. pylori eradication, GERD, functional dyspepsia, upper gastrointestinal bleeding, and Zollinger-Ellison syndrome.[3]

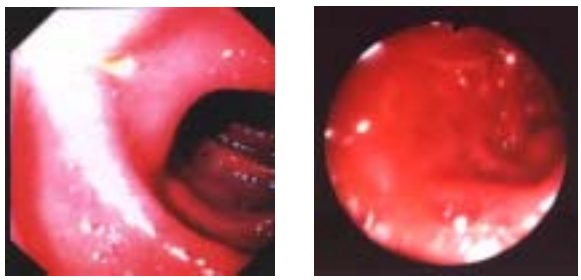
Up to now, there has been no report on the use of pantoprazole in Indonesia. This paper reports two cases of duodenal ulcer, where one case had a complication of bleeding with a history of long-term use of NSAID. The other case was that of duodenal ulcer in a patient with a high dose of steroid. Endoscopic evaluation at 2 weeks, after 5-day use of intravenous pantoprazole, demonstrated significant improvements were found in the two cases.

CASE REPORT

Case 1

A 72-year old male was admitted to the hospital with a chief complaint of black stool since 2 days prior to admission. The patient complained that since 2 days prior to admission, he had tar black stools 3-4 times a day with varying amounts, averaging 50 cc. The patient denied any nausea or vomiting. He also denied prior epigastric pain. The patient had suffered from hypertension and regularly visited the doctor and took captopril and 80 mg/day of aspilets since the previous year. The patient denied taking drugs for rheumatism or

traditional drugs. During physical examination, the patient's conjunctiva were not pale, his sclera not jaundiced. Heart and lung examination results were within normal limits. There was no abdominal abnormality. Laboratory examination results were as follows: hemoglobin 12.7 g/dl, Hematocryte 37, white blood cell count 7600/uL, platelet count 153,000/uL, albumin level 3.6 mg/dl, globulin level 1.5 mg/dl. The patient underwent upper gastrointestinal tract endoscopy, which demonstrated grade A esophagitis with hiatal hernia, pangastritis and multiple ulcers in the duodenum. The patient received 40 mg of intravenous pantoprazole for 5 days, continued with oral pantoprazole for 7 days. During hospitalization, there was no complaint of black stool, and the patient was released on the 7th day in good condition. Endoscopic evaluation on the 14th day of pantoprazole treatment demonstrated an ulcer scar in the duodenum and mild gastritis. There was no abnormality in the esophagus.



A B

Figure 1. The Upper Gastrointestinal Tract Endoscopy Showed Multiple Ulcer in Duodenum (A). Endoscopic Evaluation on the 14th Day of Pantoprazole Treatment Demonstrated an Ulcer Scar in The Duodenum (B)

Case 2

A 35-year old male was admitted to the hospital due to a generalized itchy rash since 2 weeks prior to admission. Two weeks prior to admission, the patient had visited a physician for a cold and received 3 types of drugs. After taking the drugs for a day, a generalized itchy rash appeared. The patient also complained of epigastric pain, nausea, occasional vomiting and recurrent heartburn. Physical examination during admission revealed generalized red papules. The patient was diagnosed with maculopapular drug eruption and received a high dose of prednisolone (40 mg/day) and 2x150 mg of ranitidine. After 5 days taking the drug, the patient complained of epigastric pain, nausea, and regurgitation. Endoscopy revealed grade A esophagitis, pangastritis, and duodenal ulcer. Laboratory examination results were as follows: hemoglobin level 14.1 g/dl, white blood cell count 18,300, platelet count 377,000, albumin level 4.3 mg/dl, globulin level 2.5 mg/dl, ureum /creatinine level 35/1.1, and cito blood sugar 93 mg/dl.

DISCUSSION

Nonsteroidal antiinflammatory drugs (NSAIDs) are commonly used in this part of the world. Its increased use is followed by increased incidence of side effects of gastric damage. A complication found after NSAID use is upper gastrointestinal bleeding, which is usually associated with gastric or duodenal ulcer.[4]

In this paper, we report two cases of NSAID use and history of steroid use. These drugs resulted in the gastrointestinal complication of duodenal ulcer. Previous studies demonstrated the risk for the development of ulcer when these two drugs are used, particularly if used simultaneously. When corticosteroids are used alone, peptic ulcer rarely develops. Thus, the drug is not considered to be contraindicated.[5] However, high doses of corticosteroids increases the risk of peptic ulcer and gastrointestinal bleeding.[6]

In the first case, we report an elderly male patient with a history of long-term NSAID use who was admitted with upper gastrointestinal bleeding. Elderly patients are considered at high risk for the complication of upper gastrointestinal bleeding with NSAID use. Other risk factors for upper gastrointestinal tract bleeding are history of gastrointestinal ulcer, high-dose NSAID use, the simultaneous use of two kinds of NSAIDs, the use of NSAIDs with anticoagulants, the use of NSAIDs with corticosteroids, and long term use of NSAIDs. In addition, smoking, drinking, and cardiovascular disease are factors that initiate bleeding in NSAID-users.

In the case we report, there were several risk factors for upper gastrointestinal bleeding, as follows: age of over 60 years, long term use of NSAID, smoking, and cardiovascular disease.

Actually, with the many factors existing in the patient, various preventive measures have been considered to avoid upper gastrointestinal tract complications. Several preventive measures that can be taken are as follows: choice of cyclooxygenase-2 (COX-2)-selective NSAID; protective therapy with prostaglandin analog, H-2 receptor antagonists, and proton-pump inhibitors. In addition, other mucoprotective drugs such as sucralphate and teprenone may be administered.

Unlike the first case, the second case was a young patient who received a high dose of corticosteroids. The patient actually had previously suffered from uninvestigated dyspepsia. Thus, it is unclear whether the patient had suffered from organic dyspepsia prior to the administration of corticosteroids. In this case, corticosteroid administration aggravated the dyspepsia. Endoscopic evaluation revealed esophagitis, pangastritis, and duodenal ulcer.

Cases of endoscopically-diagnosed NSAID gastropathy should receive adequate treatment. In principle, NSAID should be discontinued, and H_2RA, mucoprotectors, or proton-pump inhibitors should be administered. Termination of drug use heals the mucous lesion. It becomes a problem when the NSAID or corticosteroid needs to be continued, as in the two cases above.

Proton-pump inhibitors are currently considered as a drug that could be administered along with NSAID. Thus, patients requiring NSAIDs could still continue their medication in spite of NSAID gastropathy. Current scientific proof demonstrate that simultaneous use of proton-pump inhibitors and NSAIDs reduces the risk of peptic ulcer and its complications.[7,8]

In this case report, intravenous pantoprazole was able to heal the gastroduodenal lesions that developed in the NSAID gastropathy cases, where the drugs causing the gastropathy, aspirin and prednisone, were still administered simultaneously. Evaluation at two weeks after intravenous pantoprazole administration demonstrated healing of the duodenal ulcer.

In addition, the esophagitis detected during the first endoscopy was no longer found at endoscopic evaluation after 2 weeks of treatment. This demonstrates that pantoprazole is not only effective to treat duodenal ulcer, but also to simultaneously treat GERD. This supports previous reports that pantoprazole is effective for rapid treatment of esophagitis.[9]

CONCLUSION

We report two cases of duodenal ulcer and esophagitis that occurred after long term use of NSAID and high doses of corticosteroids. Intravenous pantoprazole was administered for the two cases to treat the gastroduodenal ulcer that occurred. After two weeks of treatment with pantoprazole, significant lesion healing was achieved in both cases.

This report demonstrates that the drug is quite promising for the treatment of severe gastroduodenal lesions. A case control study with a large sample is required to further evaluate the efficacy of this drug.

REFERENCE

1. Metz DC. Potential uses of intravenous proton pump inhibitors to control gastric acid secretion. Digestion 2000;62: 73-81.
2. Steinijans VW, Huber R, Hartmann M et al. Lack of pantoprazole drug interactions in man: an updated review. J Clin Pharmacol Ther 1996;52:243-62.
3. Wurzer H, Hofbauer R, Worm HC, Frass M, Kaye K, Kaye AD. Intravenous administration of Pantoprazole. An Austrian multicentre study. Clin Drug Invest 2002;22(8):507-11.
4. Singh G, Triadafilopoulos G. Epidemiology of NSAID-induced gastrointestinal complication. J Rheumatol 1999; 26: Suppl 2618-24.
5. Conn HO, Poynard T. Corticosteroid and peptic ulcer:metaanalysis of adverse events during steroid therapy. J Intern Med 1994;236(6):619-32.
6. Messer J, Reitman D, Sacks HS, Smith H, Chalmers TC. Association of adrenocorticosteroid therapy and peptic-ulcer disease. N Eng J Med 1983;309:21-4.
7. Chan FKL, Hung LCT, Suen BY et al. Celexocib versus diclofenac and omeprazole in reducing the risk of recurrent ulcer bleeding in patients with arthritis. N Eng J Med 2002;347:2104-10.
8. Graham DY, Agrawal NM, Campbell DR et al. Ulcer prevention in long term users of nonsteroidal anti-inflammatory drugs: results of a double blind, randomized, multicenter, active, and placebo controlled study of misoprostol vs lanzoprazole. Arch Intern Med 2002;162:169-75.
9. Smith KD, Nam J, Ghazale A, Cai Q. Letter to the editor: Severe esophagitis healed in less than a week with intravenous pantoprazole. J Clin Gastroenterol 2003;36(1):78.