Background/Aims: Eradication of *Helicobacter pylori* reduces the incidence of gastric cancer, and may inhibit gastric dysplasia progression into gastric cancer. The aim of this study was to investigate the effect of eradication of *Helicobacter* on the incidence of subsequent gastric dysplasia development after endoscopic resection.

Methods: Medical records of patients who underwent endoscopic resection for gastric dysplasia were retrospectively reviewed. Presence of *H. pylori* was assessed by the Campylobacter-like organism test and histology. The rate of subsequent dysplasia development after endoscopic resection between the eradication group and non-eradication group was compared.

Results: Total of 129 patients positive for *H. pylori* infection were included for analysis. Of these, 85 patients received successful eradication therapy and 44 patients did not receive eradication therapy or failed to achieve successful eradication. Sex, mean age and pathologic grade of dysplasia did not differ between the two groups. In univariate analysis, the grade of intestinal metaplasia (p=0.013) significantly differed between metachronous dysplasia group and non-metachronous dysplasia group. In multivariate analysis, eradication of *H. pylori* (p=0.014) was related to reduced incidence of subsequent gastric dysplasia development after endoscopic resection.

Conclusions: Eradication of *H. pylori* likely has a beneficial effect in preventing the development of subsequent gastric dysplasia, a premalignant lesion of gastric cancer, after endoscopic resection. (Korean J Gastroenterol 2013;61:307-312)

Key Words: *Helicobacter pylori*; Gastric dysplasia; Disease eradication; Endoscopic resection

**INTRODUCTION**

*Helicobacter pylori* infection is a well-established cause of gastric cancer worldwide.1 It is believed that *H. pylori* causes gastric cancer progressively starting from atrophic gastritis to intestinal metaplasia, dysplasia, and finally cancer.2 Gastric dysplasia is defined as noninvasive neoplastic proliferation of the gastric epithelium without evidence of tissue invasion, characterized by histologic alteration.3,4 As it represents the penultimate stage of gastric carcinogenesis, endoscopic resection is recommended.3,5,6 A previous study from Japan suggested that eradication of *H. pylori* after endoscopic resection of early gastric cancer has a prophylactic effect on the development of metachronous gastric cancer.7 Although gastric dysplasia is considered to be a premalignant lesion of gastric cancer and its development is thought
to be closely linked to *H. pylori* infection, the effect of eradication of *H. pylori* on the natural course of gastric dysplasia remains largely unknown. Moreover, no study has assessed the effect of eradication of *H. pylori* after endoscopic resection of gastric dysplasia.

The present study was undertaken to determine the effect of eradication of *H. pylori* on the development of gastric dysplasia after endoscopic resection of the affected lesions.

**SUBJECTS AND METHODS**

1. **Patients**

   This was a retrospective study that reviewed medical records for patient selection. Patients who had undergone endoscopic resection at the Seoul National University Bundang Hospital (Seongnam, Korea) between August 2003 and March 2011 (*n*=1,083) were assessed for enrollment. Patients were eligible for enrollment if they were diagnosed with gastric dysplasia and had undergone endoscopic resection. Patient selection criteria is shown in Fig. 1. Endoscopic resection included both endoscopic mucosal resection (EMR) and endoscopic submucosal dissection. We defined metachronous dysplasia as dysplasia subsequently detected in different location more than one year after endoscopic resection of the first lesion. Exclusion criteria were previous history of gastric cancer, previous gastric surgery, positive resection margin, absence of active *H. pylori* infection, endoscopic resection performed for lesions other than dysplasia such as benign gastric polyp, dysplasias detected within one year on follow-up endoscopy, and absence of follow-up endoscopy after endoscopic resection. All patients had given their written informed consent, and this study was approved by the institutional review board of Seoul National University Bundang Hospital.

2. **Determination of *H. pylori* infection status and eradication of bacterium**

   To assess the *H. pylori* infection status, the rapid urease test (Campylobacter-like organism test; Delta West, Bently, WA, Australia) and histologic evaluation of biopsy samples taken during endoscopy were used. Patients were regarded as currently *H. pylori*-infected when both tests showed positive results. Those who received an antimicrobial treatment were given the standard triple therapy of the standard dose proton pump inhibitor (PPI) and 500 mg of clarithromycin twice daily and 1 g of amoxicillin twice daily for 7 days as the...