

cancer, the results of univariate analyses are shown in Table 1 and the multivariate analysis revealed extensive LM positivity (positive length  $\geq 6$  mm) as the only independent risk factor (odds ratio 21.3, 95% CI 5.5-83.2,  $P < 0.001$ ). Conclusions: The non-curative cases consisting mostly of non-surgically managed cases showed favorable long-term outcomes, suggesting that non-surgical management is an acceptable option. In addition, the recognition of extensive LM positivity as a risk factor for residual/locally recurrent cancer would be helpful in selecting cases that may necessitate strict management such as immediate additional endoscopic treatment.

**Table 1. Relationship between various clinicopathological features and residual/recurrent cancer in the 85 lesions: univariate analyses**

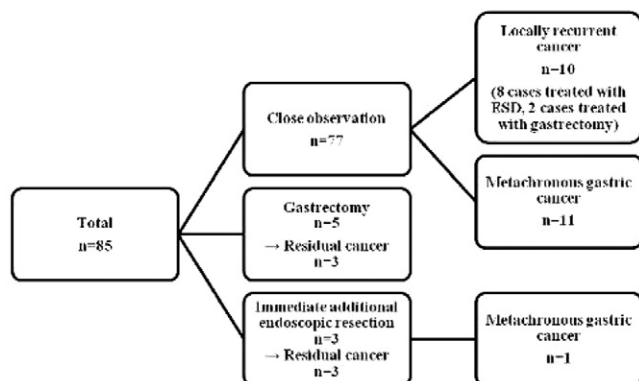
Clinicopathological features	Residual/recurrence (+) (n=16)	Residual/recurrence (-) (n=69)	Total	P value
Sex				0.40**
Male	13 (17.8%)	60 (82.2%)	73	
Female	3 (25.0%)	9 (75.0%)	12	
Age (yr)				0.04*
< 65	9 (32.1%)	19 (67.9%)	28	
$\geq 65$	7 (12.3%)	50 (87.7%)	57	
Tumor location				0.40**
Upper/Middle	12 (17.6%)	56 (82.4%)	68	
Lower	4 (23.5%)	13 (76.5%)	17	
Macroscopic type				0.58*
Elevated	6 (15.4%)	33 (84.6%)	39	
Flat or depressed	10 (21.7%)	36 (78.3%)	46	
Size (mm)				0.22**
< 30	11 (16.4%)	56 (83.6%)	67	
$\geq 30$	5 (27.8%)	13 (72.2%)	18	
Depth				0.09**
Mucosa	12 (16.0%)	63 (84.0%)	75	
Submucosa (SM1)	4 (40.0%)	6 (60.0%)	10	
Ulcerative finding				0.20**
Present	4 (30.8%)	9 (69.2%)	13	
Absent	12 (16.7%)	60 (83.3%)	72	
En bloc or piecemeal resection				0.50**
En bloc	13 (19.7%)	53 (80.3%)	66	
Piecemeal	3 (15.8%)	16 (84.2%)	19	
LM positive length (mm)				<0.001**
$\geq 6$	10 (66.7%)	5 (33.3%)	15	
< 6	6 (8.6%)	64 (91.4%)	70	

SM1, tumor infiltration into the submucosal layer  $< 500 \mu\text{m}$  from the muscularis mucosae.

\*P values were calculated using the chi-square test.

\*\*P values were calculated using the Fisher exact test.

**Figure 1. Clinical course of 85 lesions after non-curative ESD**



## 59

### Can Irsogladine Maleate, a Mucosal Protective Drug, Promotes the Healing of Ulcers After Endoscopic Submucosal Dissection? a Randomized, Prospective, Multicenter Study

Ryoji Miyahara<sup>1</sup>, Kohei Funasaka<sup>2</sup>, Kazuhiro Furukawa<sup>1</sup>, Akira Ohashi<sup>3</sup>, Nobuhiro Ando<sup>4</sup>, Yasuro Otsuka<sup>5</sup>, Tsuguo Kamioka<sup>5</sup>, Hideko Yamamoto<sup>6</sup>, Akihiro Miyata<sup>7</sup>, Yoji Sasaki<sup>8</sup>, Toshihiko Nagaya<sup>10</sup>, Yasuhiro Hisanaga<sup>9</sup>, Shusuke Kitabatake<sup>9</sup>, Makoto Kobayashi<sup>11</sup>, Akihiro Itoh<sup>1</sup>, Naoki Ohmiya<sup>1</sup>, Takafumi Ando<sup>1</sup>, Yoshiki Hirooka<sup>2</sup>, Hidemi Goto<sup>1,2</sup>

<sup>1</sup>Department of Gastroenterology & Hepatology, Nagoya University, Graduate school of medicine, Nagoya, Japan; <sup>2</sup>Department of Endoscopy, Nagoya University Hospital, Nagoya, Japan; <sup>3</sup>Department of Gastroenterology, Nagoya Ekisaikai Hospital, Nagoya, Japan; <sup>4</sup>Department of Gastroenterology, Nagoya Central Hospital, Nagoya, Japan; <sup>5</sup>Department of Gastroenterology, Handa City Hospital, Handa, Japan; <sup>6</sup>Department of Gastroenterology, Toyobashi Municipal Hospital, Rotterdam, Netherlands; <sup>7</sup>Department of Gastroenterology, Komaki City Hospital, Komaki, Japan; <sup>8</sup>Department of Gastroenterology, Konan Kosei Hospital, Konan, Japan; <sup>9</sup>Department of Gastroenterology, Ogaki Municipal Hospital, Ogaki, Japan; <sup>10</sup>Department of Gastroenterology, Tono Kosei Hospital, Mizunamki, Japan; <sup>11</sup>Department of Gastroenterology, Yokkaichi Municipal Hospital, Yokkaichi, Japan

Background: Endoscopic submucosal dissection (ESD) is accepted as a treatment for gastric neoplasms. Several trials have shown the efficacy of gastric acid secretion inhibitors for post-ESD ulcers. However, to date there has been no consensus regarding the optimal drug regimens. Irsogladine has previously been shown to accelerate the healing of gastric ulcers after *Helicobacter pylori* (*H. pylori*) eradication therapy. Hence, we conducted a randomized controlled trial to compare proton pump inhibitor (PPI) and combination PPI plus irsogladine treatments. Aim: To assess the efficacy of PPI and irsogladine combination therapy compared with PPI monotherapy for ESD-induced gastric ulcer healing. Method: Ninety Six ESD-induced gastric ulcer patients were enrolled in this study. In Group A (n=51), subjects received rabeprazole 10 mg/day and irsogladine 4 mg/day for 8 weeks and in Group B (n=45), subjects received rabeprazole 10 mg/day for 8 weeks. At 1, 4 and 8 weeks after ESD, we performed endoscopic examination to assess each gastric ulcer healing. Results: There was no significant difference between group A and group B in the patient's background. The ulcer healing rates at 4 weeks after ESD in group A were significantly higher than those in group B in the full analysis set (19.6% vs 5.13%;  $P < 0.05$ , chi-square test). Conclusion: The concomitant use of PPI and irsogladine was more effective than the PPI alone for treating ulcers within 4 weeks after ESD. Therefore, the combination therapy of PPI and irsogladine was favorable regimen in patients with artificial ulcer after ESD.

## 60

### "Suck-Ligate-Unroof-Biopsy" (Slub) Using a Mini-Detachable Loop for the Diagnosis and Therapy of Small Broad-Based Subepithelial Tumors

Kenneth F. Binmoeller\*, Masayuki Kato, Janak N. Shah, Yasser M. Bhat, Steve Kane  
Interventional Endoscopy Service, California Pacific Medical Center, San Francisco, CA

Subepithelial tumors (SETs) can be challenging to diagnose and treat by endoscopy. Biopsies may not reach the tumor and endoscopic ultrasound (EUS)-guided tissue acquisition can be difficult due to small lesion size and mobility. Resection has been reported, but carries inherent risks of bleeding and perforation. Loop ligation can achieve ischemic tumor ablation, but may not capture broad-based lesions, and does not address tissue acquisition for diagnosis. We report our experience using a "Suck-Ligate-Unroof-Biopsy" (SLUB) technique for the diagnosis and treatment of small (<2cm) broad-based subepithelial tumors. Methods: Patients who underwent SLUB were identified in a prospectively collected database. A standardized technique and protocol was applied. All patients underwent prior EUS by a 12 MHz catheter ultrasound probe. A 20mm mini-detachable loop was "prelooped" at the rim of an 18 mm diameter soft oblique transparent cap attachment. SLUB procedure: 1) Suction to draw the SET into the cap; 2) Ligation below the tumor, confirmed by repeat miniprobe EUS; 3) Unroofing of the overlying tissue with a needle knife; 5) Biopsies from the exposed tumor. Results: The SLUB technique was attempted in 16 patients (2 males; median age 62) and successful in all. Location: 14 in stomach, 2 in colon. Median size by EUS: 10mm. Immunohistology: GIST- 4; leiomyoma-5; Carcinoid-3; Vanek's tumor-2; Granuloma-1; Heterotopic fundic glands -1. Five patients (31%) had follow up with confirmation of tumor ablation by endoscopy and EUS. Complications: pain in 1; there was no bleeding or perforation. Conclusion: 1) Mini-loop ligation of small broad-based SETs is feasible; 2) Unroofing after ligation is safe and provides sufficient tissue for