


Effectiveness of Combination of Pharmacological Treatment and Endoscopic Band Ligation in Active Esophageal Varicose Bleeding

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Abstract

Background: In this study, we evaluated the efficiency of somatostatin and endoscopic band ligation in the treatment of esophageal varicose bleeding.

Material and methods: Between January 01, 2021, and December 31, 2022, in Ankara Atatürk Sanatorium Training and Research Hospital with the diagnosis of liver cirrhosis and/or newly diagnosed esophageal varices bleeding findings (hematemesis-melena-hematochezia, at least 2 g/dL decrease in Hgb level during follow-up) patients who admitted to the service were evaluated.

Results: A total of 102 patients 58 (56.8%) of were male, 44 (43.2%) were female. While active esophageal variceal bleeding was observed in 25 (24.5%) patients, active variceal bleeding was not observed in 67 patients (65.6%) although there were signs of portal hypertension (esophagus-cardia-fundus varices or portal gastropathy)

Conclusion: In this study, we found that starting pharmacological treatment as soon as the preliminary diagnosis is made and followed by endoscopic treatment with endoscopic band ligation within 12 hours is an effective and safe treatment approach for patients with suspected esophageal variceal bleeding.

Keywords: Esophageal Varicose Bleeding, Portal Hypertension, Somatostatin

Introduction

Acute gastrointestinal system bleeding in cirrhotic patients is one of the emergencies of gastroenterology that requires rapid and careful intervention. For this reason, patients who are thought to have esophageal variceal bleeding should be referred to a center that is adequately equipped for follow-up and treatment. There are studies supporting that current approaches to the treatment of esophageal variceal bleeding have a positive effect on life expectancy. Volume replacement is an important condition in the general approach to esophageal variceal bleeding (1). It is recommended to maintain hemodynamic stability and keep the hemoglobin level at approximately 8 g/dl (2). Additionally, it is thought that prophylactic antibiotic usage in gastrointestinal system bleeding of cirrhotic patients reduces the risk of bacterial infection and has a positive effect on life expectancy. In addition to these approaches, there are also specific measures for the control of esophageal variceal bleeding

and the prevention of early recurrence of this bleeding (3). Pharmacological treatment for esophageal variceal bleeding can be started as soon as variceal bleeding is considered, even before upper gastrointestinal system endoscopy. Similar efficacy was demonstrated in a meta-analysis of 15 studies comparing emergency sclerotherapy and pharmacological therapy (vasopressin±nitroglycerin, terlipressin, somatostatin, and octreotide). In the treatment of esophageal variceal bleeding, the combination of pharmacological and endoscopic treatment seems to be the most appropriate option (4). A meta-analysis of 8 studies compared the combination of endoscopic treatment [(sclerotherapy or endoscopic band ligation (EBL)] with endoscopic, pharmacological treatment) for acute variceal bleeding. A combination of endoscopic and pharmacological treatment was found superior in terms of bleeding control and risk of recurrence (5).

In this study, we evaluated the efficacy of combination of pharmacological and endoscopic band ligation in patients who admitted to the hospital with esophageal variceal bleeding.

Material and Method

Between January 01, 2021 and December 31, 2022, in Ankara Atatürk Sanatorium Training and Research Hospital with the diagnosis of liver cirrhosis and/or newly diagnosed esophageal varices bleeding findings (hematemesis-melena-hematochezia, at least 2 g/dL decrease in Hgb level during follow-up) patients who admitted to the service were evaluated. Ethics committee approval was obtained for this study. The International Declaration of Helsinki carried out the study. After the preliminary diagnosis of esophageal variceal bleeding was made, somatostatin treatment (250 ug IV bolus followed by 250 ug/hour continuous infusion) was started in the emergency room. Upper GI endoscopy was performed in all of the patients within 12 hours, and endoscopic band ligation was performed in patients with active bleeding (leaking or gushing bleeding) and varicose bleeding focus and somatostatin treatment was continued for at least three days. Although active bleeding was not detected in the endoscopic examination, patients with varicose veins with bleeding signs were treated with medical treatment and included in the varicose eradication program with endoscopic band ligation. Somatostatin treatment of the patients who did not detect active bleeding in the endoscopic examination was discontinued and followed for 48 hours. Patients with active bleeding who were followed up after endoscopic band ligation had a decrease in hemoglobin of 2 g/dL, hematemesis, melena, and hematochezia during their follow-up, and it was accepted as bleeding recurrence. In addition to medical treatment, patients who were thought to bleed again received endoscopic treatment after endoscopic band ligation and/or Sengstaken balloon tamponade. Patients who underwent endoscopy considering esophageal variceal bleeding but were found to have other causes of bleeding (gastric or duodenal ulcer, upper gastrointestinal system malignancy, etc.) were not included in the study. Demographic, laboratory, and treatment data of the patients were obtained from the hospital data processing database, and endoscopic data were obtained from the endoscopy laboratory records.

Statistical Review

SPSS 21.0 for statistical analysis Windows program used. Descriptive statistical methods(mean, standard)were used.

Results

Upper gastrointestinal system endoscopy was performed within 12 hours in 102 patients who were evaluated in the emergency department with the preliminary diagnosis of acute variceal bleeding. The mean age of 102 patients who were considered to have variceal bleeding was 54.3 (min 22,

max 88). 58 (56.8%) of the patients were male, 44 (43.2%) were female. While active esophageal variceal bleeding was observed in 25 (24.5%) patients, active variceal bleeding was not observed in 67 patients (65.6%) although there were signs of portal hypertension (esophagus-cardia-fundus varices or portal gastropathy). Other causes (duodenum, gastric ulcer) were found as the cause of bleeding in 10 (9.9%) patients. The mean age of 25 patients with bleeding was 61.2 (min 27, max 82) and 15 (60%) were male. Child Pugh score was A for 4 patients, B for 26 patients, and C for 11 patients. MELD Score was <9 for 14 patients, 10-19 for 22 patients, 20-29 for 5 patients(Table 1) In these patients, the mean Hgb value at admission was 8 mg/dl (\pm 3.2), Htc value was 24.6 (\pm 9.5), Plt value was 115000 (min 35000 max 270000). 6 of the patients had alcoholic liver cirrhosis, 4 were HDV-related liver cirrhosis, 6 were HCV-related liver cirrhosis, 11 patients were cryptogenic, 1 patient was non-alcoholic steato hepatitis, 2 patients were autoimmune hepatitis, 3 patients were primary biliary cirrhosis. It was liver cirrhosis. One patient had extrahepatic portal hypertension. Since the endoscopic evaluation of the patients was during bleeding, varicose veins were not graded. Endoscopic band ligation was performed in all patients with active variceal bleeding. The average number of bands discarded during the procedures was 3.5 (min 1, max 7). Hemorrhage control was achieved with endoscopic band ligation in 24 (96%) of 25 patients with active variceal bleeding. With the combination of somatostatin and endoscopic band ligation, no recurrence of bleeding was detected in 22 patients (88%), and the patients were discharged on the 5th day after endoscopic and medical treatment. Recurrence of bleeding (Hgb decrease, melena, hematemesis) was detected in 3 (12%) of the patients. In 2 patients with recurrent bleeding, endoscopic band ligation was performed for the second time after Sengstaken balloon tamponade and the bleeding was controlled. However, 1 patient died despite all attempts.

Table 1:

Age	54,3 (min22, max 88)	
Gender	Female	Male
	58	44
Active Varicose Bleeding	25 Patients	
Not Observed Varicose Bleeding	67 Patients	
Other Causes of Bleeding	10 Patients	
CHILD Score A	4 Patients	
CHILD Score B	26 Patients	
CHILD Score C	11 Patients	
MELD Score<9	14 Patients	
MELD Score 10-19	22 Patients	
MELD Score 20-29	5 Patients	

Conclusion

Esophageal variceal bleeding is an emergency situation that should be approached quickly and carefully due to its high mortality and morbidity. Close monitoring and careful volume replacement should be performed on patients. Pharmacological treatment (somatostatin and its analogs) should be initiated as soon as varicose bleeding is considered, an upper gastrointestinal system endoscopy should be performed within 12 hours, and treatment should be planned. In a meta-analysis evaluating 10 randomized controlled trials evaluating endoscopic treatment modalities, the following conclusion was reached. In a total of 404 patients, endoscopic band ligation was found to be significantly more effective than sclerotherapy in controlling active bleeding (total relative risk 0.53 and confidence interval 0.28-1.01) (6). In another study, it was suggested that endoscopic band ligation should be preferred in the endoscopic treatment of acute variceal bleeding and that sclerotherapy should be used in patients where endoscopic band ligation is not technically possible. The fact that pharmacological agents with few side effects can be used for up to 5 days provides the treatment opportunity for patients in this period when the risk of re-bleeding is highest(2).

In a randomized trial comparing somatostatin and sclerotherapy in active bleeding, bleeding control rate (83% vs 80%) and rebleeding rate (17% vs 25%) were found(7). The combination of pharmacological treatment and sclerotherapy was found superior to pharmacological treatment and somatostatin treatment alone in bleeding control and prevention of rebleeding(8).

Several studies have been conducted on the combination of endoscopic band ligation and pharmacological therapy, and combination therapy has been shown superior to endoscopic band ligation alone (5). In a study of 100 patients, the combination of endoscopic band ligation and octreotide was compared with endoscopic band ligation alone. In this study, bleeding control was achieved in 45 of 47 patients with the combination of endoscopic band ligation and octreotide, while bleeding control was achieved in 44 of 47 patients in the endoscopic band ligation group. In the same study, the rate of rebleeding was 9% in the combination group and 38% in the endoscopic band ligation group(9). In another study, the rate of achieving hemostasis with band ligation was reported as 86% (10). In our study, we started standard dose somatostatin treatment after admission of the patients. While the medical treatment was continuing, we performed endoscopic examination and endoscopic band ligation when necessary. We continued somatostatin treatment for at least 3 days after endoscopic band ligation. Similar to other studies, we achieved bleeding control in 95% of our patients with endoscopic band ligation, and we found a rebleeding rate of 11.7% with the combination of somatostatin and endoscopic band ligation.

In terms of procedural complications, ulceration, stricture formation, perforation, mediastinitis, aspiration and aspiration-related sepsis have been described in the literature. In one study, complication rates were found to be significantly lower in endoscopic band ligation than in sclerotherapy (22% vs. 2%) (9). We did not find any serious procedure-related complication (exacerbation of bleeding, perforation, aspiration) in our patients. In this study, we found that starting pharmacological treatment as soon as the preliminary diagnosis is made and followed by endoscopic treatment with endoscopic band ligation within 12 hours is an effective and safe treatment approach for patients with suspected esophageal variceal bleeding. Moreover, we think that the treatment and follow-up of patients with acute variceal bleeding should be done in centers where endoscopic treatment can be applied.

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