Fluid Sucralphate in Post Esophageal Varices Ligation Esophageal Ulcer

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ABSTRACT

Background

One of the complications of esophageal varices ligation is deep ulcer. Sucralphate has been shown to prevent and heal post ligation esophageal ulcer.

Materials and method

All patients with liver cirrhosis and portal hypertension undergoing esophageal varices ligation in the year 2000/2001 were included in this study. Using "double-blind random sampling", patients were divided into 2 groups, those receiving sucralphate and those receiving placebo for 2 weeks. Endoscopy of the upper gastrointestinal tract was conducted regularly on the 7th, 10th, and 14th day to evaluate the diameter of the esophageal ulcer based on the diameter of forceps biopsy. The data were evaluated using analysis of variance (ANOVA) or Kruskal Wallis.

Results

Statistically, there was no significant difference in the characteristics of group A patients receiving sucralphate and group B patients receiving placebo. Only 17 patients from group A and 20 from group B were allowed to participate in this study. On the 10th day, the average diameter of the esophageal ulcer in the sucralphate group was significantly smaller than that from the placebo group. (4.74 $\pm$ 2.02 mm vs 5.42 $\pm$ 2.22 mm; p=0.04). On the 14th day, the average diameter of esophageal ulcer in the sucralphate group was also significantly less than that of the placebo group (0.88 $\pm$ 1.58 vs 2.99 $\pm$ 2.04 mm; p < 0.01).

Conclusion

Sucralphate is able to accelerate the healing of post esophageal varices ligation ulcer.

Key Words:

Sucralphate, esophageal ulcer, esophageal varices ligation

INTRODUCTION

One of the complications of ligation of esophageal varices is deep esophageal ulcer.[1,2,3,4,5,6] The presence of esophageal ulcer creates symptoms of chest pain, chest discomfort, fever, bleeding, etc. Sucralphate is a cyto-protective agent that is able to facilitate healing of damaged gastrointestinal mucosal epithelial cells, including esophageal ulcer. Several studies using sucralphate to prevent and heal post esophageal varices ligation esophageal ulcer have demonstrated satisfactory results.[7,8,9,10,11]

This study attempts to study the effect of sucralphate

in healing post esophageal varices ligation esophageal ulcer compared to placebo.

MATERIALS AND METHODS

All patients with liver cirrhosis and portal hypertension undergoing endoscopic esophageal varices ligation at Cipto Mangunkusumo General Hospital from mid 2000 to mid 2001 were included in the study. Using double-blind random sampling, patients were divided into 2 groups, the first one (group A) given 4 x 1 gram of fluid sucralphate, and the second (group B) were given 4 x 1 cc of fluid placebo for 2 weeks. Endoscopy of the upper gastrointestinal tract (GIT) was repeated on the 7th, 10th, and 14th day. The ulcer that is formed is measured based on forceps biopsy width (5 mm when open). All side effects related to the administration of sucralphate or placebo is regularly noted. Data were statistically evaluated using analysis of variance (ANOVA) or Kruskal - wallis.

RESULTS

From the study, we matched the characteristics of patients from group A and B. No significant difference in age, sex, race/ethnic background was found (see table 1).

The youngest patient was 26 years old, and the oldest 62 years old, with a mean of 48.5 +_9.612 years.

Out of the 25 patients receiving sucralphate, 17 were able to undergo endoscopic evaluation, while the remaining 8 did not come for control visit, and thus were excluded from the study.

Out of the 28 patients receiving placebo, 20 patients were available for endoscopic evaluation, while 8 patients also did not come for control visit, and thus were excluded from the study.

Table 1. Characteristics of Subjects Receiving Sucralphate and Placebo

Characteristics	Sucralphate (n=25)	Placebo (n=28)	P value
Age:	3	2	0,49
20-29	7	5	
30-39	5	9	
40-49	9	8	
50-59	1	4	
60-69			
Sex: male	16	17	0,97
Female	9	11	
Ethnic group:			
Batak	5	3	0,92
Bengkulu	1	2	
Betawi	3	4	
Java	13	14	
Manado	2	3	
Pontianak	1	2	

Table 2. Mean diameter of Post-Esophageal Varices Ligation Esophageal Ulcer on the 7th, 10th and 14th day.

Mean diameter of esophageal ulcer (mm)	7th day (mm)	10th day (mm)	14th day (mm)
Sucralphate (n=17)	6.18 ± 2.83	4.74 ± 2.02	0.88 ± 1.58
Placebo (n=20)	7.39 ± 5.06	5.42 ± 2.22	2.99 ± 2.04
P value	0.07	0.04	0.004

DISCUSSION

Treatment of esophageal varices, both ligation of esophageal varices or sclerotherapy, have been known to cause deep esophageal ulcer.[1-6] Medications such as sucralphate are needed to accelerate ulcer healing and to prevent further complications such as bleeding or infection/septicemia.

This is a double blind random sampling study on the effect of sucralphate administration in post-esophageal ulcer ligation ulcer. Liver cirrhosis patients with post-esophageal varices ligation were divided into two groups, those receiving sucralphate and placebo. The characteristics of the two groups were matched to ensure equivalence in age, sex, and race/ethnic background.

On the 7th day, the average diameter of ulcer in the first group of patients (group A) receiving fluid sucralphate was significantly less than that of the second group (group B) receiving fluid placebo. The average diameter of ulcer in the sucralphate group was 6.18 +_2.83, which was smaller than the average diameter of ulcer from the placebo group (7.39 +_5.06). However, the difference was not statistically significant ($p > 0.05$).

On the 10th day, average diameter of ulcer in the sucralphate group (4.74 +_2.02) was significantly smaller than the average diameter of ulcer from the placebo group (5.42 ± 2.22) ($p < 0.05$).

On the 14th day, average diameter of ulcer in the sucralphate group (0.88 _+ 1.58) was significantly smaller than the average diameter of ulcer from the placebo group (2.99 ± 2.04) ($p < 0.01$).

The average diameter of esophageal ulcer in the sucralphate group was smaller compared to the placebo group, which was in accordance to literature that stated that patients receiving sucralphate had accelerated healing of esophageal ulcer.[7-11] Patients receiving sucralphate or placebo did not demonstrate drug side-effects as in other studies. This study found several drop-outs from both the sucralphate and the placebo group due to ignorance, non-compliance, and aggravated conditions.

CONCLUSION

Sucralphate is capable of accelerating healing of post-esophageal varices ligation esophageal ulcer.

ACKNOWLEDGEMENTS

We address our gratitude to PT Fahrenheit Indonesia for sponsorship and assistance in the study.

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