

Prevalence and Profile of Upper Gastrointestinal Bleeding in Cirrhotic Patients in Sanglah General Hospital Denpasar, 2018

Isadora Tiofunda Budiman¹, I Ketut Mariadi², Gde Somayana²

¹Medical Student of Udayana University, Denpasar, Bali

²Division of Gastroentero-hepatology, Department of Internal Medicine, Faculty of Medicine, University of Udayana/Sanglah General Hospital, Denpasar

Abstract: Upper gastrointestinal bleeding (UGIB) is one of medical emergencies accounting for up to 100–170 cases per 100,000 population annually. This condition has a significant mortality rate ranging from 4 to 15% and this number remained unchanged for the past 30 years, despite the advanced diagnostic and therapeutic modalities. UGIB is one of the most dreadful complications commonly found in patients with liver cirrhosis. Although UGIB in cirrhotic patients is mainly due to a ruptured varices, not a few number of cirrhotic patients bleed from other sources as well. This study aims to determine the prevalence and profile of upper gastrointestinal bleeding in cirrhotic patients in Sanglah General Hospital year 2018. This research is a descriptive study using cross-sectional method with total sampling technique, then the data that met the inclusion criteria and did not meet the exclusion criteria were subjected to the study and then analyzed. The prevalence of SCBA bleeding in cirrhosis patients in Sanglah Hospital in the 2018 period was 44.9%. Of the 17 subjects who had UGIB, endoscopic findings of esophageal varices were found in 16 (94.1%) patients, while gastropathy portal hypertension (GHP) in 13 (76.47%) patients, gastric varices in 5 (29.4%) patients, erosive mucosal disease in 5 (29.4%) patients, and peptic ulcer disease in 2 (11.8%). There was 1 patient with normal endoscopic finding without any abnormalities (5.9%).

Keywords: upper gastrointestinal bleeding, liver cirrhosis, variceal bleeding, non-variceal bleeding.

I. INTRODUCTION

Liver cirrhosis is a final end-stage of a progressive liver disease. Liver cirrhosis is characterized by a fibrosis of the liver tissue, distortion of the liver vascular architecture, and formation of regenerative nodules due to a hepatocellular deaths. These changes further result in portal hypertension and hepatic synthetic dysfunction [1].

Cirrhosis is the 14th most common cause of death in adults worldwide, accounting for 1.03 millions of death annually [2]. According to National Vital Statistics Reports, in 2016, chronic liver diseases and liver cirrhosis was the 12th most common cause of death in the United States, and became the 11th most common cause of death in 2017 with 41,743 cases annually [3]. Liver cirrhosis is commonly caused by hepatitis B and hepatitis C viruses, alcoholic liver diseases, and non-alcoholic steatohepatitis (NASH) [4]. In Indonesia, liver cirrhosis is commonly caused by hepatitis B virus, which contributes up to 40-50% of cases, 30-40% is caused by hepatitis C virus, and the rest is caused by unknown causes [5].

There is a paucity in the epidemiologic data of liver cirrhosis, however, there are some reports from some university hospitals. According to some reports from some university hospitals, liver diseases is the 3rd most common disease after infectious and lung diseases. Liver cirrhosis is the 2nd most common amongst other liver diseases [5].

In the course of liver cirrhosis, increased blood pressure in the portal venous system and decreased in hepatic function will ultimately lead to many complications to arise. Complications of liver cirrhosis include ascites, varices, hepatic encephalopathy, spontaneous bacterial peritonitis, hepatorenal syndrome, and upper gastrointestinal bleeding [6].

Upper gastrointestinal bleeding (UGIB) due to ruptured varices is the most common cause of death in cirrhotic patients, with mortality rate as high as 53% in the first 6 weeks [7]. Varices will develop in approximately 5-15% of cirrhotic patients, and it is estimated that the majority of cirrhotic patients will have varices over their lifetimes. In addition, 30% of patients presenting with varices will bleed [6]. Though the majority of cirrhotic patients bleed due to a ruptured varices. However, not a few number of cirrhotic patients bleed from other sources as well [8]. Albeit being common happen in cirrhotic patients, data regarding UGIB in cirrhotic patients is really limited [9].

With that being said, this study aims to determine the prevalence and profile of upper gastrointestinal bleeding in cirrhotic patients in Sanglah General Hospital year 2018.

II. METHODOLOGY

This is a retrospective cross-sectional study using medical records of patients diagnosed with liver cirrhosis in the inpatient clinic and emergency room of Sanglah General Hospital Denpasar within the predetermined period (January 2018 – December 2018). A total sampling method was used and incomplete medical records which did not document the sex, age, and Child-Turcotte-Pugh score of the patient were excluded. The medical records of cirrhotic patients who had UGIB and underwent endoscopic procedure must document the endoscopic data.

From total of 140 medical records of patients diagnosed with liver cirrhosis, 91 were excluded because the submitted data were incomplete. A total of 49 eligible data therefore comprise the study sample and further analysed descriptively, and presented in the form of diagrams, tables, and bar charts.

III. RESULT AND DISCUSSION

A. Characteristics of Cirrhotic Patients

TABLE I summarized the characteristics of cirrhotic patients in this study.

Of the 49 patients, 36 (73.5%) were male and 13 (26.5%) were female (male : female = 2.77 : 1). This study showed a similar result with other studies conducted by Lovena et al., in 2017 and Patasik et al., in 2015 which demonstrated male patients (65.8%[10]; 62.7%[11]) were common compared to female patients (34.2%[10]; 37.3%[11]) . This might be caused by differences in lifestyle such as alcohol consumption, smoking, and obesity which expose men to higher risk of acquiring chronic liver diseases.

The age of patients in this study ranges from 27 to 80 years old with the average of 54.6 ± 12.58 years. The majority of patients were in 51-50 years of age group (32.7%) and 41-50 years of age group (26.5%). This result is similar to the result of the studies conducted by Lovena et al., and Patasik et al., which showed that the majority of cirrhotic patients aged between 50-60 years old [10], [11]. This age distribution which peaked at the fourth and fifth decade of life might be caused by the natural history of cirrhosis as a chronic disease, thus longer period of time to manifest after chronic exposure to risk factors.

In this study, the majority of patients presented with hepatitis B (65.3%), followed with hepatitis C (14.3%), and both hepatitis B and C (8.2%). Six patients (12.2%) presented with unknown cause of disease. In Indonesia, hepatitis B contributes to 40-50% of all cirrhosis case, while hepatitis C 30-40%, and the other 10-20% were caused by unknown cause [5].

Regarding the severity of liver disease, there were 27 (55.1%) patients with CTP C, 17 (34.1%) patients with CTP B, and 5 (10.2%) patients with CTP A.

Of 49 cirrhotic patients, 17 (34.7%) had UGIB within the predetermined period and the rests did not.

TABLE I. Characteristics of cirrhotic patients

Parameter	N	%
Sex		
Male	36	73.5
Female	13	26.5
Age		
21 – 30 years	3	6.1
31 – 40 years	2	4.1

41 – 50 years	13	26.5
51 – 60 years	16	32.7
61 – 70 years	9	18.4
>71 years	6	12.2
Cause of Cirrhosis		
Hepatitis B	32	65.3
Hepatitis C	7	14.3
Hepatitis B & C	4	8.2
Unknown Cause	6	12.2
Severity of Liver Disease		
CTP A	5	10.2
CTP B	17	34.7
CTP C	27	55.1
Upper Gastrointestinal Bleeding (Haematemesis/ Melaena)		
Yes	17	34.7
No	32	65.3

B. Characteristics of Cirrhotic Patients who Had UGIB

TABLE II displays the characteristics of cirrhotic patients who had UGIB in this study.

Of 17 cirrhotic patients who had UGIB, 14 (82.4%) were male, and 3 (17.6%) were female. A study by Romcea et al., (2013) also showed a similar result where cirrhotic patients who had UGIB were mainly men (61.9%) [12].

Regarding age distribution, cirrhotic patients who bleed aged between 42 – 71 years with the average of 54.65 ± 10.18 . Other studies also reported the same result which showed that the average age of cirrhotic patients who had UGIB were 56.76 years [12] and 57.84 ± 6.29 years [13].

Regarding the severity of liver disease, there were 8 (47.1%) patients with CTP C, 7 (41.2%) patients with CTP B, and 2 (11.8%) patients with CTP A.

Of all patients who had UGIB in 2018, 2 (11.8%) patients experienced re-bleeding within the same year.

TABLE II. Characteristics of cirrhotic patients who had UGIB

Parameter	N	%
Sex		
Male	14	82.4
Female	3	17.6
Age		
21 – 30 years	-	-
31 – 40 years	-	-
41 – 50 years	8	47.1
51 – 60 years	3	17.6
61 – 70 years	4	23.5
> 71 years	2	11.8
Severity of Liver Disease		
CTP A	2	11.8
CTP B	7	41.2
CTP C	8	47.1
Rebleeding within 1 year period		
Yes	2	11.8
No	15	80.2

C. Prevalence of UGIB in Cirrhotic Patients

Of 49 cirrhotic patients, 17 (34.7%) had UGIB (haematemesis/ melaena) and 2 of them experienced re-bleeding within the same year. One patient re-bleed for 4 times in a year with the intervals between bleedings were 31, 27, 58, and 90 days.

Another patient re-bleed for 1 time in a year with the interval of 60 days. The total events of UGIB was 22, thus the prevalence of UGIB in this study was 44.9%.

D. Endoscopic Findings in Patients with UGIB

Of all 17 subjects with UGIB, endoscopic findings of both variceal (oesophageal and gastric varices) and non-variceal lesions were found in 16 (94.1%) patients, while normal endoscopic finding were found in 1 (5.9%) patient.

The most common endoscopic finding was oesophageal varices which were found in 16 (94.1%) patients. This result was also demonstrated by previous study which showed that oesophageal varices were found in 92.9% of cirrhotic patients who had UGIB [13] (Figure 1).

Other findings include portal hypertensive gastropathy (PHG) which presented in 13 (76.7%) patients, gastric varices in 5 (29.4%) patients, erosive mucosal diseases (gastritis, duodenitis, gastroduodenitis) in 5 (29.4%) patients, and peptic ulcer in 2 (11.8%) patients. There was 1 (5.9%) patient with normal endoscopic finding without any abnormalities (Figure 1).

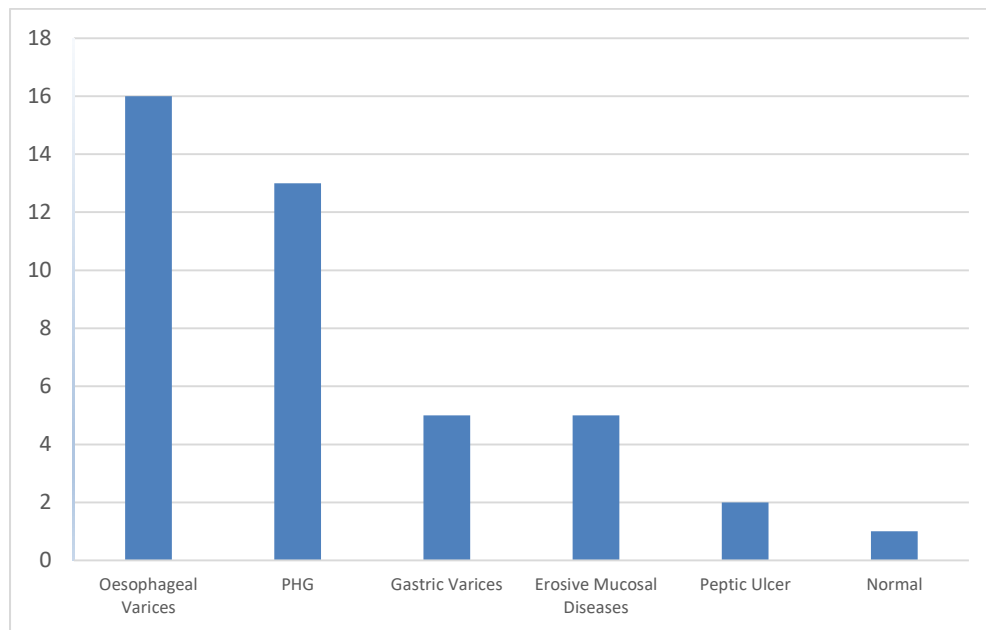


Fig.1. Endoscopic findings of cirrhotic patients with UGIB

Among 16 patients presenting with oesophageal varices, varices grade III were the most common which presented in 12 (75%) patients, while varices grade II in 3 (18.8%) patients, and varices grade I in 1 (6.3%) patient (TABLE III).

Endoscopic findings of PHG (13) in this study ranged between mild PHG and severe PHG. Mild PHG were seen in 8 (61.5%) patients, while severe PHG were seen in only 5 (38.5%) patients (TABLE III).

Among 5 patients with gastric varices, GOV1 presented in 3 (60%) patients and GOV 2 presented in 2 (40%) patients. Other variants of gastric varices (IGV1 or IGV2) were not found in this study (TABLE III).

Of 5 patients with erosive mucosal diseases, 3 (60%) had gastritis, 1 (20%) had duodenitis, and another one (20%) had gastroduodenitis (TABLE III).

Of 2 patients with peptic ulcer, 1 (50%) was with Forrest IIb ulcer and another one (50%) was with Forrest III ulcer (TABLE III).

There was 1 patient with normal endoscopic finding without any abnormalities (TABLE III). This is similar to a study reported by Alema et al., (2012) which demonstrated that normal endoscopic findings were seen in 16.1% patients [14]. This might happen due to: (1) limitations of the endoscopic instrument (esophagogastroduodenoscopy) which are only capable of evaluating gastric to 2/3 of the duodenum, so the source of bleeding which occurs 1/3 distal to the duodenum cannot be seen; or (2) the endoscopic procedure was performed >72 hours after bleeding, thus the wound in the digestive tract has healed completely. In this study, endoscopic procedure was performed within 3 - 30 days from the bleeding with an average of 10.9 ± 2.41 days.

TABLE III. Endoscopic findings of cirrhotic patients with UGIB

Endoscopic Findings	Cirrhotic Patients with UGIB (n=17)	
	N	%
Oesophageal Varices	16	94.1
Grade I	1	5.9
Grade II	3	17.6
Grade III	12	70.6
Gastric Varices	5	29.4
GOV1	3	17.6
GOV2	2	11.8
Portal Hypertensive Gastropathy	13	76.47
Erosive Mucosal Diseases	5	29.4
Gastritis	3	17.6
Duodenitis	1	5.9
Gastroduodenitis	1	5.9
Peptic Ulcer	2	11.8
Forrest IIb	1	5.9
Forrest III	1	5.9
Normal	1	5.9

IV. CONCLUSION

In this study, the prevalence of UGIB in cirrhotic patients in Sanglah General Hospital in 2018 was 44.9%. Of total 17 cirrhotic patients with UGIB, 14 (82.4%) were male and 3 (17.6%) were female. The average age of cirrhotic patients with UGIB was 54.65 ± 10.18 with the majority of patients were in the age group of 41-50 years. The most common lesions were oesophageal varices, namely in 16 (94.1%) patients, followed by PHG in 13 (76.46%) patients, gastric varices in 5 (29.4%) patients, erosive mucosal disease in 5 (29.4%) patients, and peptic ulcer in 2 (11.8%). There was 1 patient with normal endoscopic finding without any abnormalities (5.9%).

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