RESEARCH

A STUDY OF UPPER GASTROINTESTINAL BLEEDING IN CHRONIC LIVER DISEASE

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Abstract

Background: The developing world faces a significant challenge in the form of cirrhosis. In India, as in the rest of the world, an increasing number of people are being diagnosed with liver diseases and suffering from liver failure. The clinical course of individuals who have advanced cirrhosis is frequently complicated by a variety of significant sequelae that can arise regardless of the underlying aetiology of the liver disease. This can occur in patients at any point during the course of the disease. The most common and serious complication of cirrhosis, which is linked to an increased risk of morbidity and mortality, is bleeding that occurs as a result of ruptured esophageal varices. However, variceal recurrence is the most common issue that occurs following endoscopic treatment for esophageal varices. The standard endoscopic treatment for esophageal varices is called endoscopic band ligation. The purpose of this study is to study the clinical outcome of an acute upper gastrointestinal bleeding, analyse the non-variceal aetiology of upper gastrointestinal bleeding, as well as evaluate the variceal recurrence rate and timing after EBL. **Materials and Methods:** 52 patients who were admitted to tertiary care hospital participated in the research study. Following the receipt of informed consent, investigations were conducted, and an endoscopy was performed, in order to determine the source of the bleeding. There was an endoscopic band ligation performed. The clinical outcomes of banding were investigated, and patients were monitored for a further episode of bleeding. **Result:** 42 males and 10 females were studied. There were a total of 7 patients out of the total of 52 who experienced a recurrence, which is 13.5% of the total. The majority of upper gastrointestinal bleeding was caused by esophageal varices (94%). Peptic ulcers accounted for 7.6%, Mallory Weiss and malignancy accounted for 3.8%, GAVE and esophagitis accounted for 1.9%, and portal hypertensive gastropathy accounted for 9.6% of cases. Anemia was the most common consequence, accounting for fifty percent of all cases. Shock accounted for 34.6% of cases, renal failure for 23.1%, hepatic encephalopathy for 30.8%, and fatalities made up 3.8% of cases. **Conclusion:** According to the findings of this study, the most common cause of cirrhosis is alcoholism; esophageal varices are responsible for the majority of upper gastrointestinal bleeding; portal hypertensive gastropathy is the most common cause of upper gastrointestinal bleeding that is not caused by varices; and recurrence is more likely with higher grades of both cirrhosis and varices.

INTRODUCTION

Cirrhosis is a disorder that has a variety of clinical signs and implications, some of which can be life-threatening. Histopathologically, it is defined as diffuse fibrosis with nodule formation. Cirrhosis can also be fatal in some cases. In cirrhosis, the pathologic hallmarks include the development of fibrosis to the point that there is architectural distortion along with the production of regenerating nodules.[1,2] This occurs regardless of the source of the disease. This leads to a reduction in the number of hepatocellular mass, and consequently, function, as well as an alteration in the flow of blood. The clinical course of patients who have advanced

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cirrhosis is frequently complicated by a variety of significant sequelae that can arise regardless of the underlying cause of the liver disease.[3,4] These sequelae can have a significant impact on the patient's quality of life. These conditions include hepatocellular cancer, splenomegaly, ascites, hepatic encephalopathy, spontaneous bacterial peritonitis (SBP), hepatorenal syndrome, and portal hypertension, which can lead to gastroesophageal variceal haemorrhage. The syndrome known as portal hypertension is characterised by an increase in pressure inside the portal vein system.[5,6] This increased pressure is caused by an increase in the resistance of the intrahepatic arteries. An increase in hepatic vein pressure gradient that is greater than 10 mmHg is considered clinically significant and is associated with problems.[7,8] This gradient is considered the gold standard for measuring portal pressure. In patients with portal hypertension, the development of porto-systemic collaterals often follows. Esophageal varices are the most prevalent consequence of portal hypertension, and nearly half of all patients who have cirrhosis have at least one of these varices.[9,10] The most common and serious complication of cirrhosis, variceal bleeding results from ruptured esophageal varices. This type of bleeding is associated with a higher risk of morbidity and mortality compared to other sources of bleeding. Variceal bleeding occurs in thirty percent of patients who have cirrhosis and portal hypertension, and the mortality risk associated with each episode is reported to range between thirty and seventy percent.[11,12]

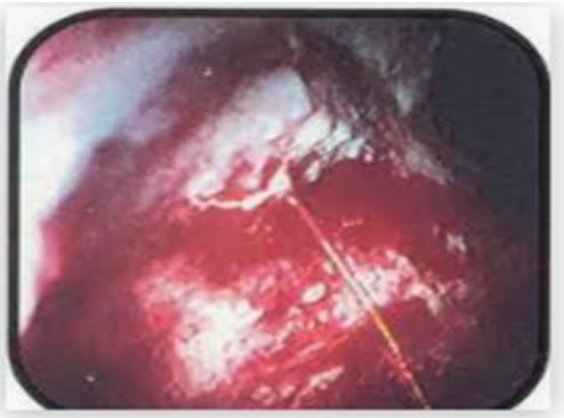

Figure 1: Upper GI Bleeding

The therapy of esophageal varices should result in a favourable outcome and should prevent the disease from returning. The primary endoscopic treatment for esophageal varices is called endoscopic band ligation, or EBL for short. The recurrence of varices does occur following EBL; however, the reason why some patients experience early recurrence and others have later or no recurrence at all is yet unknown. The purpose of the current study is to study the clinical outcome of an acute upper gastrointestinal bleeding,[13,14] evaluate the variceal recurrence rate and timing after EBL, evaluate the non-variceal cause of upper gastrointestinal bleeding, and evaluate the non-variceal cause of upper gastrointestinal bleeding [Figure 1] showsu Upper GI Bleeding.

Aims of the Study

1. To assess the recurrence of esophageal varices after endoscopic band ligation
2. To assess the non-variceal causes of upper gastrointestinal bleed
3. To assess the clinical outcome of upper gastro intestine

MATERIALS AND METHODS

Type of study: Analytical Study
Duration of study: 18 months from 01.01.2017 to 31.6.2018.

Methodology
Inclusion Criteria

1. The patients of both sexes aged >/=18 years
2. Patients with upper GI bleed and chronic liver disease

Exclusion Criteria

1. Patients <18 years
2. Patients with hematemesis and no liver disease
3. Patients on treatment with antiplatelet drugs and other drugs causing upper GI bleed
4. Patients with hematemesis already diagnosed to have hematological disorder /malignancy, on treatment with chemotherapy and other immunosuppressant
5. Patients who already had a previous episode of hematemesis

After obtaining the patient's or bystander's written agreement, a thorough clinical examination was performed after doing an interview to determine the patient's or bystander's past history of chronic liver disease and after conducting the interview. In order to provide the best care possible to the patient, the standard investigations that are expedited will be performed to confirm the diagnosis. Patients were categorized according to child criteria and underwent evaluations using abdomen ultrasonography, serum proteins and albumin, prothrombin time, total blood count, liver function tests, HBsAg, and HCV Ab. Endoscopy of the upper gastrointestinal tract was carried out in order to investigate the possibility of esophageal varices or any other potential causes of hematemesis. Patients were monitored to evaluate the clinical outcome following an upper GI bleed, as well as the number of patients who experienced problems as a result of the haemorrhage. Prior to the beginning of the study, permission in the appropriate form was acquired from the ethical committee. There were no major concerns raised from an ethical standpoint. This study did not receive any financial support

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from any source, nor did it impose any additional financial burden on the patient participating in the study. The sixteenth version of SPSS was utilized in order to carry out the statistical analysis. In order to analyze the relationship between sensitivities and specificities, the chi-square test was carried out. In a manner not dissimilar to that described above, values for the outcome were computed.[15,16,17,18]

RESULTS

Age

The mean age of the patients was 53.06 with standard deviation of 12.892. The minimum age was 27 years and maximum age was 78 years. Table 1 shows Number of patients accordingly age group.

Sex

81% of the patients were males and 19% of the patients were females. Table 2 shows Frequency of patients accordingly sex

Age-Sex Distribution of the Patients: The maximum number of patients belonged to the age group of 40-50 years. As far as sex is concerned 81% of the patients were males and 19% of the patients were females.

Aetiology

Alcoholism was the leading cause of cirrhosis, accounting for 69 percent of cases, followed by HBV (17.3 percent), autoimmune disease (3.8 percent), and HCV (7.7 percent). Cryptic origins accounted for 1.9% of the total. Abuse of alcohol and viral hepatitis are the two leading contributors to the global prevalence of cirrhosis (B and C). Abuse of alcohol is responsible for more than fifty percent of all cases in India's urban centres. Hepatitis B is responsible for 30–70% of all cases, with hepatitis C being in second place in terms of frequency. [Table 3] shows Aetiology of patients.

Child Classification

37% of the patients were classified as belonging to Child class B, whereas 15% were classified as belonging to Child class C. X2 is 7.146, p value=0.007513. The finding is statistically significant at the P0.005 level. This demonstrates that Child C has a higher risk of experiencing further bleeding compared to Child B. Child C was responsible for more than half (five out of seven) of the instances of rebleeding. Table 4 shows Number of childs.

Recurrence

There were a total of 7 patients out of the total of 52 who experienced a recurrence, which is 13.5% of the total. The average interval between recurrences was found to be six months, with a standard deviation of 3.6 months. The maximum amount of time between recurrences was 12 months, and the minimum was five days. This quantity of re-bleeding is commensurate with those reported in studies conducted by other researchers, which ranged from 9–19 percent. However, the most important distinction between these trials is the indication of EBL. Specifically, those studies were carried out for primary prophylaxes, secondary prophylaxes, and the control of acute variceal bleeding respectively. whereas all of the participants in our study had acute variceal haemorrhage for the very first time at the time of their presentation [Table 5 and 6].

Variceal and non-variceal causes of bleeding: Esophageal varices accounted for 94% of upper GI bleed [Table 7].

Variceal Grade: The Chi-square statistic is 6.0828. The P value is 0.013651. This result is significant at $p < 0.05$.57% of the rebelled cases belonged to Grade 3 and 43% belonged to Grade 2.Rebleed was more common with higher variceal grades [Table 8]. Among the non-variceal causes Portal Hypertensive Gastropathy accounted for 9.6%, Peptic Ulcer 7.6%, Mallory Weiss and Malignancy 3.8%, GAVE and Esophagitis 1.9% [Table 9].

Among the complications of hematemesis Anemia was the most common complication which accounted for 50%. Shock 34.6%, Renal Failure 23.1%, Hepatic Encephalopathy 30.8% and Death 3.8% [Table 10].

Table 1: Number of patients accordingly age group

Age group	Number
20-30	2
30-40	6
40-50	16
50-60	12
60-70	11
>70	5
Total	52

Table 2: Frequency of patients accordingly sex

Sex	Frequency	Percent
F	10	19.2
M	42	80.8
Total	52	100.0

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Table 3: Aetiology of patients

Aetiology	Percentage
Alcohol	69.2
HBV	17.3
HCV	7.7
Autoimmune	3.8
Cryptogenic	1.9

Table 4: Number of childs

Child classification	Number
B	37
C	15
Total	52

Table 5: Number of recurrence

Reccurance	Number	Percent
Yes	7	13.5
No	45	86.5
Total	52	100.0

Table 6: Frequency of recurrence

Reccurance time	Frequency
1YR	1
2M	1
3M	1
5DAYS	1
5M	1
7M	1
8M	1
N	45
Total	52

Table 7: Frequency of variceal

Variceal	Frequency	Percent
N	3	5.8
Y	49	94.2
Total	52	100.0

Table 8: Marginal Row Totals

	Recurrence	Non recurrence	Marginal Row Totals
Grade 2	3 (5.48) [1.12]	33 (30.52) [0.2]	36
Grade 3	4 (1.52) [4.04]	6 (8.48) [0.72]	10
Marginal Column Totals	7	39	46 (Grand Total)

Table 9: Non variceal causes of upper GI bleed

Non variceal	Number	%
GAVE	1	1.9
ESOPHAGITIS	1	1.9
MALIGNANCY	2	3.8
PEPTIC ULCER	4	7.6
MALLORY WIESS	2	3.8
PHG	5	9.6
VASCULAR	0	0

Table 10: Clinical outcome of upper GI bleed

	Number	Percentage
ANEMIA	26	50
RF	12	23.1
HE	16	30.8
SHOCK	18	34.6
DEATH	2	3.8

Total outcome	Frequency
0	23
1	9
2	6
3	6
4	7
5	1
Total	52

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DISCUSSION

52 patients who satisfied the inclusion criteria were studied from January 2013 to June 2014.

Age-Sex Distribution of the Patients

Patients between the ages of 40 and 50 made up the largest proportion of the total patient population. In terms of gender distribution, 81% of the patients were males whereas just 19% of the patients were girls. The standard deviation of the patients' ages was 12.892, while the mean age of the patients was 53.06 years. The youngest participant may be 27 years old, whereas the oldest participant could be 78 years old.[19,20]

Causes of Cirrhosis

Alcoholism was the leading cause of cirrhosis, accounting for 69 percent of cases, followed by HBV (17.3 percent), autoimmune disease (3.8 percent), and HCV (7.7 percent). cryptic origins accounted for 1.9% of the total. Abuse of alcohol and viral hepatitis are the two leading contributors to the global prevalence of cirrhosis (B and C). Abuse of alcohol is responsible for more than fifty percent of all cases in India's urban centres. Hepatitis B is responsible for 30–70% of all cases, with hepatitis C being in second place in terms of frequency. In India, there have been only a handful of research that have looked into what causes portal hypertension. According to the findings of Ray et al., the most prevalent cause of portal hypertension in individuals living in eastern India is hepatitis B. According to research conducted in other regions of the world,[21,22] hepatitis C and alcohol consumption are the most common factors that cause chronic liver disease.

Variceal and Non-Variceal Causes of Bleeding

Esophageal varices accounted for 94% of variceal bleed. Among the non-variceal causes Portal Hypertensive Gastropathy was present in 9.6%, Peptic Ulcer 7.6%, Mallory Weiss and Malignancy 3.8%, GAVE and Esophagitis in 1.9%. The study found that Out of the 297 cases of upper digestive hemorrhage, the dominant etiology being the variceal bleeding (217 cases - 73%), and 80 (27%) cases of upper non-variceal digestive hemorrhage. Duodenal ulcer was the main cause for upper non-variceal digestive hemorrhage in case of cirrhotic patients considered for this study (33.75%), followed by gastric ulcer (21.25%), portal hypertensive gastropathy (17.5%), acute erosive gastritis (11.25%), Mallory-Weiss syndrome (6.25%), esophageal ulcer (5%), antral vascular ectasia (1.25%), duodenal polyps (1.25%) and ulcerated gastric tumor (1.25%) controlling the bleeding but also at preventing early rebleeding, infection, and renal failure.[23,24]

CONCLUSION

Most of the 52 people who were taken to the hospital because of an upper GI bleed were between 40 and 50 years old. When compared to females, the majority of the patients were men. 81% of the people in the hospital were men, and 19% were women. Most cases of cirrhosis were caused by drinking too much alcohol (69%), HBV (17.3%), an autoimmune disease (3.8%), or HCV (7.7%). and 1.9% was due to cryptogenic. 94% of upper GI bleeds were caused by esophageal varices. 6 percent didn't have any varices. Malignancy, Mallory-Weiss, and Peptic ulcer were all found in the same person. Out of the non-variceal causes, 9.6% were due to Portal Hypertensive Gastropathy, 7.6% were due to Peptic Ulcer, 3.8% were due to Mallory Weiss and Malignancy, and 1.9% were due to GAVE and Esophagitis. Most of the complications were caused by anaemia, which made up 50%. 34.6% of people had shock, 23.1% had kidney failure, 30.8% had hepatic encephalopathy, and 3.8% died. Seven of the 52 patients had a recurrence, which is 13.5% of the total number. The average time between occurrences was 6 months, and the standard deviation was 3.6 months. The shortest time between events was 5 days and the longest was 12 months. 37% of the patients were in Child class B, and 15% were in Child class C (p value=0.007513) When P0.005, the result is important. Rebleeding is more likely to happen with Child C than with Child B. out of 7 cases of rebleeding, 5 were with Child C, which is more than 50%. With higher variceal grades, it was more common to bleed again. 57% of the rebleeds were Grade 3, and 43% were Grade 2 (The P value 0.013651).

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