

INJECTION SCLEROTHERAPY OF BLEEDING GASTRIC VARICES USING ABSOLUTE ALCOHOL

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ABSTRACT

Objectives: To evaluate the effectiveness of absolute alcohol injection in the management of bleeding gastric varices.

Material and methods: This descriptive study was conducted in the department of Gastroenterology, Hayatabad Medical Complex Peshawar from September 2006 to September 2009. Twenty Seven patients with portal hypertension fulfilling the inclusion criteria and consenting were included in the study. Endoscopy was arranged within 12 hours of admission to the hospital. The gastric varices were injected with 5-10 ml of absolute alcohol depending upon the size of the varices. Both intravariceal and paravariceal techniques were used. Subsequent endoscopy sessions were arranged at 2 weeks intervals. The outcomes assessed were variceal eradication, rebleed and death. Findings were noted and entered into a structured proforma. Data was analyzed using SPSSv.10.

Results: Fifteen (55.56%) patients were male and 12 (44.44%) were female with a mean age of 47.52 ± 15.09 years. Twenty one (77.78%) patients had cirrhosis due to chronic hepatitis C, 4 (14.81%) were HBV related while 2 (7.40%) had alcoholic liver disease. Majority (70.73%) had child's class C followed by B and A (18.51% and 11.11% respectively). Variceal eradication was achieved in 19(70.37%) patients. Three were lost to follow up while 5 died due to uncontrolled bleeding. Post sclerotherapy ulceration was the most common complication (64%) followed by pyrexia (28%), Retrosternal/epigastric pain (16%) and dysphagia (8%).

Conclusion: Sclerotherapy with absolute alcohol may be effective in achieving hemostasis in bleeding gastric varices but with exceptionally high rate of complications.

Key Words: Gastric varices, Absolute alcohol, Sclerotherapy.

INTRODUCTION

It has been estimated that about 20 -30% patients will bleed from varices within 2 years¹. Overall variceal bleeding account for one third of all upper GI bleeding^{2,3}. Gastric varices account for about one quarter of these variceal bleed⁴.

Treatment of bleeding gastric varices is technically difficult because of their size and location and still controversial.

Despite initial successful hemostasis with various endoscopic modalities of treatment, rebleed is common. Some authorities even don't recommend endoscopic treatment outside clinical trials⁵.

Various endoscopic treatment modalities

have been used to treat bleeding gastric varices with variable results.

Absolute alcohol was studied by Sarin and reported successful hemostasis in 66.7% of patients with bleeding gastric varices and variceal eradication in 71.6% of cases⁶.

Other endoscopic modalities include cyanoacrylate injections, variceal banding, thrombin injections and use of detachable snares⁷⁻¹⁰.

Sarin and his colleagues showed that Cyanoacrylate was more effective than absolute alcohol in the management of bleeding gastric varices¹¹.

The present study was conducted to evaluate the effectiveness of absolute alcohol

injections in the management of bleeding gastric varices as other modalities like cyanoacrylate and TIPSS are not readily available in our set up.

MATERIAL AND METHODS

Patients with cirrhosis and portal hypertension, presenting with upper gastrointestinal bleeding due to Gastric varices as confirmed by endoscopy were included in the study. Those with cirrhosis and portal hypertension in whom the cause of bleeding was recognized other than gastric varices by endoscopy were excluded.

Twenty seven (27) patients with portal hypertension fulfilling the inclusion criteria and consenting were included in the study. All patients were admitted to the ward and resuscitated with blood transfusion, fluid replacement, intravenous antibiotics and vasoactive drugs (Octreotide, 100 ug IV bolus followed by 50 ug/hour infusion) and intravenous infusion of proton pump inhibitors. A detailed history was taken from all patients and a thorough physical examination was done on all patients and findings noted. Base line investigations including hemoglobin, full blood count, liver function tests, renal function tests, PT/INR, serum albumin, electrolytes, blood sugar, abdominal sonogram, CXR and ECG were done for all patients.

Child-Pugh class was calculated for all patient.(Table 1).

Table 1: Child-Pugh scoring system

Score	1	2	3
Ascites	None	Mild	Moderate/Severe
Encephalopathy	None	Mild	Marked
Bilirubin (umol/L)	<34	34 - 50	>50
Albumin (g/L)	>35	28 - 35	<28
Prothrombin time (second over normal)	<4	4 - 6	>6

Key:Child's Class A (score <7), Class B (Score 7-9), Class C (Score 10+)

Upper GI endoscopy was arranged for all patients within 12 hours of admission to hospital after haemodynamic stabilization. The Sarin and Kumar classification system was used to classify the gastric varices in to various groups, depending upon their location and relation with the oesophageal varices. According to this classification, the gastric varices are classified in to four types; 1)Oesophago-gastric varices type 1(OGV-1) which are gastric varices along the cardia and continuous with the esophageal varices, 2) Oesophago-gastric varices type 2 (OGV-2) which are gastric varices in the fundus in the presence of esophageal varices, 3) Isolated gastric varices type 1(IGV-1) which are gastric fundal

varices in the absence of esophageal varices and 4) Isolated gastric varices type 2 (IGV-2) which are gastric varices in any part of the stomach other than fundus and include duodenal varices as well. Patients with gastric varices(Isolated gastric varices type I and Oesophgo-Gastric Varices type II) with active bleeding or evidence of recent bleed were injected with absolute alcohol using 21 gauge variceal injector. The volume of alcohol used was 5-10 ml depending upon the size of varices. Both intravariceal and paravariceal injection techniques were used. All patients were retained in the ward for 24 hours after sclerotherapy and closely monitored for evidence of rebleed, with pulse and blood pressure monitoring, initially hourly and then 6 hourly, daily hemoglobin levels, development of fresh hematemesis or malena.

Two weeks follow up sessions were arranged for all patients who were discharged from hospital. Patients were followed up with upper GI endoscopy and assessed for variceal eradication, complications. Repeat injections were given in patients with large gastric varices. Patients were followed up for a mean period of one year.

Data thus collected was entered on a structured proforma and analyzed using SPSS version 11.

RESULTS

Of 27 patients 15 were males and 12 were females with a male to female of 1.25:1 and majority of the patients (44.4) were in the 4th and 5th decades of life with mean age of 47.52 years and a standard deviation of 15.09 (Table 2).

Table 2: Age and Sex Distribution

Age group	Male	Female	Number	Percentage
15-25	2	1	3	11.11%
26-35	1	2	3	11.11%
36-45	3	1	4	14.81%
46-55	4	3	7	25.92%
56-65	4	4	8	29.62%
66-75	1	1	2	7.40%

The most frequent cause of portal hypertension was cirrhosis due to chronic hepatitis C (77.78%) (Table 3).

Table 3: Etiology of portal hypertension

Etiology	Number of patients	Percentage
Hepatitis C	21	77.78%
Hepatitis B	4	14.82%
Alcoholic	2	7.40%

Around 70% of patients had Child's class C followed by Child's class B (18%) (Table 4).

Table 4: Child's classification

Child's Class	Number of patients	Percentage
Class A	3	11.11%
Class B	5	18.51%
Class C	19	70.73%

IVG-I were present in 17 (62.92%) patients while 10 (37.04%) patients had OGV-II (Table 5).

Table 5: Gastric Varices Classification

Type	Number of Patients	Percentage
IGV-I	17	62.96%
OGV-II	10	37.04%

The average number of sessions for eradication of varices was 3-4 (Table 6).

Table 6: Number of sessions required for variceal eradication

Number of sessions	Number of patients	Percentage
1-2	7	25.93%
3-4	13	74.07%

Variceal eradication was achieved in 19 patients (70.37%) while 3 patients were lost to follow up and 5 patients died due to uncontrolled bleeding (Table 7).

Table 7: Study outcomes

Outcome	Number of Patients	Percentage
Eradication of Varices	19	70.37%
Rebleed and Death	5	18.52%
Lost to follow up	3	11.11%

DISCUSSION

About 80% gastric varices bleed during life time. They bleed at relatively low portal pressure as compared to esophageal varices. In contrast to the esophageal varices, bleeding from gastric varices is more dramatic and severe in nature. Because of its anatomical location and large size, no standard therapy had been approved so far. However current guidelines recommend the use of cyanoacrylate as an effective and safe therapy, especially in situations where TIPSS are not readily available.

Little work has been done and published

regarding the use of absolute alcohol injections in the management of bleeding gastric varices. Most of the work has been done by Sarin and his colleagues.

Sarin reported a series of 71 patients with bleeding from gastric varices which were managed with injections sclerotherapy using absolute alcohol⁶. He reported variceal obliteration rate of 71.6% which is almost similar to our study (70.37%). The rate of rebleeding was almost similar to our study (19% VS 18.51%). Sarin reported a mortality rate of 24% while we observed a mortality rate of 18.52%. This is probably due to the less number of patients recruited in our study.

Subsequently, Sarin et al in another study compared absolute alcohol with cyanoacrylate in the treatment of bleeding fundal varices. They showed that cyanoacrylate was more effective and safe than absolute alcohol¹¹.

In another study done by Trudeau and Prindiville, using absolute alcohol injections for bleeding and gastric varices in comparison with esophageal varices, reported a higher rebleeding and mortality rates secondary to post sclerotherapy ulcerations (37%)¹².

We observed post sclero ulcerations in 64% of patients. The comparative lower rate of ulcerations reported by Trudeau and Prindiville may be due to the less number of patients (n = 9) recruited in their study.

They further concluded that absolute alcohol injections offer only temporary control of bleeding in gastric variceal hemorrhage and alternative therapies and modified sclerotherapy are required.

In a recent study conducted by Hitishi Maruyama et al used combined cyanoacrylate and alcohol injection in bleeding fundal varices and reported it be an effective approach to the treatment of fundal varices¹³.

CONCLUSION

We conclude that absolute alcohol injections may be effective in achieving initial hemostasis and variceal eradication in patients with gastric varices but with exceptionally high rate of complications including post sclerotherapy ulcerations and rebleeding. The rate of postsclerotherapy complications can be reduced if minimum sessions are carried out with optimum outcome. However it may be used as an alternative therapy when Cyanoacrylate or more definitive therapy like TIPSS and Surgery are not readily available.

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