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ROLE OF HISTOACRYL GLUE INJECTION IN PREVENTING UPPER GIT BLEED AND PREVALENCE OF POST SCLEROTHERAPY BLEEDING.

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ABSTRACT… Objectives: To determine role of histoacryl injection in preventing upper acute upper gastrointestinal bleeding. **Study Design:** Prospective Study. **Setting:** Gastroenterology ward of DHQ Teaching Hospital Gujranwala. **Period:** One year from 1st September 2017 to 31st August 2018. **Material & Methods:** Patients presented to the study hospital having upper gastrointestinal bleeding of acute onset due to gastric varices bleeding were included in this study. All other cases having upper GIT bleeding due to other causes like peptic ulcer disease, Mallory weise syndrome, gastritis or esophageal varices were not included in this study. Both male and female patients were included irrespective of their age. Hemostasis in these cases was achieved by endoscopic sclerotherapy using histoacryl glue (N-butyl-2-cyanoacrylate) injection without lipoidal dilution. After first session of injection patients were called on follow up after 5 days and they were assessed for recurrent GIT bleeding and treatment failure. All data was documented on a predesigned performa. Frequencies and percentage were calculated and results were expressed in tabular form and graphs. **Results:** Total 80 cases were studied including 56% male and 44% female cases. Endoscopic sclerotherapy using histoacryl injection proved successful in 87.5% cases and recurrent bleeding occurred in 12.5% cases. Minimum age of patients was 25 years and maximum age 70 years with mean age of 45 years. Total 450 cases presented in study institution with Upper GIT bleeding during study period and causes among them were liver cirrhosis in 92% cases, peptic ulcer disease in 4% cases, Malloryweise Syndrome in 2.5% and gastritis in 1.5% cases. In our study group cause of gastric varices was liver cirrhosis due to viral hepatitis in 73% cases and alcoholic hepatitis in 27% cases. After single session of endoscopic histoacryl glue injection to 80 cases, no bleeding occurred after 5 days in 71(88.7%) cases, recurrent bleeding occurred within 5 days in 9(11.2%) cases. Two cases died due to massive recurrent bleeding and mortality rate was 2.5%. **Conclusion:** Endoscopic sclerotherapy using Histoacryl injection is very successful treatment for acute upper gastrointestinal bleeding with very low recurrence rate of bleeding and low mortality rate.

Key words: Endoscopic Sclerotherapy, History Injection, Liver Cirrhosis, Portal Hypertension, Upper GIT Bleeding.

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INTRODUCTION

Upper GIT bleeding is a very common medical emergency condition in Pakistan. According to a report incidence of upper gastrointestinal bleeding in Pakistan is about 10% each year.[1] Hepatitis is very common cause of liver cirrhosis in our country. Other causes of cirrhosis include alcoholic hepatitis, metabolic disorders, and chronic biliary obstruction. Portal hypertension leads to variceal bleeding and causes 30% deaths in cirrhotic patients.[2] Varices are formed in esophagus and stomach but gastric varices are not as much threatening as esophageal varices. It requires immediate blood transfusion to maintain hypovolemic shock otherwise death may occur in few hours depending on severity of bleeding.[2] According to another study most common causes of upper GIT bleeding are esophageal variceal bleeding in 57% cases, peptic ulcer in 18%, hypertensive gastropathy, Mallory weise and reflux esophagitis in 9%, 3% and 3% respectively.[3] Few studies reported 3% incidence of upper GIT bleeding due to gastric varices in patients with liver cirrhosis. Upper GIT bleeding

should be managed on emergency basis first giving intravenous fluids to prevent hypovolemia followed by definite management by surgery or radiological intervention of when patient is stable. Endoscopic management of variceal bleeding is very effective and advance mode of treatment in which various drugs are used for sclerotherapy of varices. These sclerotherapy agents include N butyl cyanoacrylate, octyl cyanoacrylate, ethanolamine oleate, thrombin and band ligation technique of varices. Purpose of all these sclerotic agents is to stop the bleeding immediately but their efficacy and rate of recurrence of bleeding is variable for these agents. Among them cyanoacrylate has been proved more effective as compared to others as it causes immediately effect and low rate of recurrence of bleeding from varices. These all managements plan are aimed to give temporary management as definite management includes treatme of portal hypertension which is main cause of bleeding. Our study is based on the action of histoacryl injection without lipoidal dilution in management of upper GIT bleeding from esophageal or gastric varices.

MATERIAL & METHODS

In this study total 80 cases were included who presented to the study institution with upper gastrointestinal bleeding. These cases were admitted in gastroenterology ward through emergency unit. Initial management to them given in COD when stabilized they admitted in the ward for proper management by endoscopic method. Inclusion and exclusion criteria were formed. According to inclusion criteria those patients were included in the study having gastric variceal bleeding, presented to the institution in study period of time. All other cases in which upper GIT bleeding was due to other causes such as esophageal varices, peptic ulcer disease and gastritis were not included in this study. Proper consent was taken from ethical committee of the institution before conducting this study. Informed consent was taken from all patients in study group for including their data in study and they were well informed about the procedure of treatment and its advantages and complications as well. First brief history taken and examination completed, then initial resuscitation given and necessary investigations were done for all patients such as CBC, RFTs, LFTs, BSR, serum electrolytes, abdominal ultrasound, anti HBsAg and anti HCV by ELISA if not done previously, then patients were admitted in the gastroenterology ward for further management. They were planned for endoscopic sclerotherapy with histoacryl injection without lipoidal dilution. BAVENO V guidelines were followed according to which if bleeding does not occue after 5 days then hemostasis is achieved and if bleeding after this period is called rebleeding. According to these guidelines unsuccessful hemostasis is defined if bleeding does not stop and hematemesis of more than 100 ml fresh blood occurs after 2 hours of injection sclerotherapy or development of hypovolemic shock or decrease of 3g/dl hemoglobin in 24 hours without blood transfusion. All data was documented and analyzed on Microsoft office and SPSS software (version 26). Frequencies, percentages, mean values and P-value were calculated and results expressed in tabular and graphical form.

RESULTS

There were total 80 cases in this study comprising on 45(56.3%) male and 35(43.7%) female cases. Male to female ratio was 1.2:1. Age range of cases in study group was 25-70 years with mean age of 45 years. There were 3(3.7%) cases between age 25-35 years, 10(12.5%) cases with 36-45 years, 25(31.2%) cases with age 36-45 years, 30(37.5) cases having age between 56-65 years and 12(15%) were above 65 years of age. In 71(88.7%) cases bleeding stopped after one session of histoacryl injection while recurrent bleeding occurred in 9(11.25%) cases. Two cases died due to heavy recurrent bleeding with mortality rate of 2.5%. Out of 9 cases with recurrent bleeding 5(6.2%) cases were admitted in ICU. Blood transfusion was done in 38(47.5%) cases out of total 80 cases due to severe anemia developed due to variceal bleeding.

Age of Patients (Years)	Number of Patients	Frequency (%)	P-Value
25-35	3	3.7	0.04
36-45	10	12.5	
46-55	25	31.2	
56-65	30	37.5	
Above 65	12	15	

Table-I. Age distribution among patients in study group (n=80.

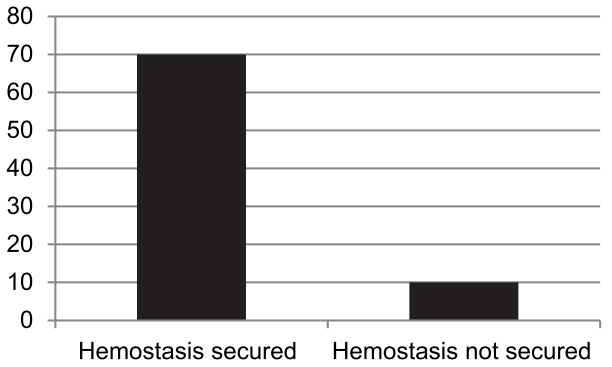
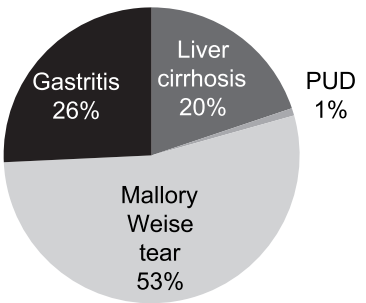


Figure-1. Hemostasis after single session of Histoacryl injection without lipoidal dilution (n=80).

Common causes of upper GIT bleeding



DISCUSSION

In Pakistan hepatitis is a very common cause of liver cirrhosis. Other causes include alcoholic hepatitis, metabolic disorders and Malloryweis syndrome. Hepatitis B, C are much prevalent in our country and if untreated it leads to decompensated liver failure and liver cirrhosis which causes portal hypertension. Portal hypertension is a very common cause of esophageal and gastric varices formation and upper gastrointestinal bleeding due to variceal bleeding. Gastric variceal bleeding is less common having frequency of 20%.[1-3] Upper GIT bleeding may cause hypovolemic shock and death if bleeding is severe and not treated promptly. Upper GIT bleeding can be successfully treated by endoscopic sclerotherapy using Histoacryl injection. Many studies reported that only one session of Histoacryl injection is sufficient to stop bleeding from gastric varices.

A study was conducted in Karachi in which 83 cases out of 97 cases were successfully treated with single session of cyanoacrylate injection and these results are comparable to international studies.[4] Without lipoidal dilution of histoacryl injection results are much better with high success rate but few studies mention increased complications without dilution method. In our study complications were very few with good success rate by using Histoacryl (Cyanoacrylate) injection without dilution. Mortality rate was also very low in this study. The reason of better results than previous studies are advancing techniques and improved skills in health professional which are main cause of decreased complications with the passage of time.

Few previous studies have mentioned increased complications when histoacryl injection is used without dilution as compared to diluted one but in our study results were satisfactory. Cyanoacrylate injection is more effective than propranolol in gastric varices. Initially tissue adhesives are used in controlling bleeding from gastric varices and if this treatment is failed then transjugular intra hepatic portosystemic shunt (TIPS) is the treatment of choice. According to a study repeated injections of Cyanoacrylate with propranolol proved superior to TIPS.[5] Endoscopic thrombin injection in gastric varices bleeding is also very effective.[6] Cyanoacrylate injection is effective in gastric and duodenal varices bleeding as reported by a study in which 1cc injection given to varices and results were found much satisfactory with least complications and long survival.[7] Duodenal Dieulafoy's lesion (DL) is a rare disease of upper GIT leading to lethal hemorrhage that can be successfully treated with cyanoacrylate injection.[8] A study conducted in China on complications of endoscopic cyanoacrylate injection with and without lipiodol

dilution including blockage of needle seen in 1.4% and sticking of needle to the varix happened in 2.7% cases, difficult withdrawn of endoscope in 0.16% and sticking of ligation device to the varix seen in 0.32% cases. Sticking of needle was seen more in undiluted cyanoacrylate injection than diluted one. Causes of gastric varix in their study included liver cirrhosis in 91% and causes other than cirrhosis noted in 9% cases.[9] Approximately 80% of upper GIT bleeding is stopped without any intervention spontaneously and in 20% cases any intervention is needed. Endoscopy in first 24 hours is mainstay of treatment. There are various endoscopic methods to stop bleeding such as thermal coagulation, sclerotherapy, laser excision and clip placement.[10,11] Gastric varices are present in 20% cases having portal hypertension and 35%-90% cases have recurrence of bleeding after spontaneous hemostasis. Cyanoacrylate glue injection is a treatment of choice in cases with acute upper GIT bleeding or for secondary prophylaxis. Cyanoacrylate causes hemostatsis in 80-90% cases.[12] This is comparable to our study in which hemostasis secured in 88.7% cases after first session of injection. Another study reported success rate more than 99% using cyanoacrylate injection.[13] A new modality of hemoststic powder spray is being studied now a days in patients with upper GIT bleeding and it has been proved more effective than cyanoacrylate injection according to a study.[14] Histoacryl injection has been proved very successful in patients having non-variceal upper GIT bleeding.[15,16]

CONCLUSION

Histoacryl injection without lipoidal dilution is very successful in achieving hemostasis in most of the patients presenting with gastric variceal bleeding with low recurrence of bleeding and less complications and low mortality rate. Common complication with histoacryl glue injection without dilution is sticking of endoscopic needle to the varix. It is effective in non-variceal gastric bleeding as well. Management of upper GIT bleeding in first 24 hours is related to high success rate in achieving hemostasis.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Muhammad Ayub	Topic selection and data collection.	
2	Sagheer Hussain	Data collection and data composing.	
3	Salman Ahmed	Found additional resources of information.	