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FREQUENCY OF IN-HOSPITAL RE-BLEEDING, MORTALITY AND CAUSES OF MORTALITY AMONG PATIENTS WITH ACUTE UPPER GASTROINTESTINAL BLEEDING

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Abstract

OBJECTIVE: To determine the Frequency of in-hospital re-bleeding, mortality and causes of mortality among patients with acute upper gastrointestinal bleeding

MATERIAL AND METHODS: This cross sectional study was conducted from 27th March 2017 to 26th January 2018 in Medical Unit of Shaikh Zayed Medical College/ Hospital, Rahimyarkhan. One hundred and fifty patients who had endoscopy for upper gastrointestinal bleeding (UGIB) were included. All the patients were observed for re-bleeding, in hospital mortality and causes of mortality which were documented as frequency distribution table.

RESULTS: Re-bleeding was seen among 11% patients while mortality in 7% patients. There were 20% patients who died of bleeding cause, while 80% patients died of non bleeding causes.

CONCLUSION: Re-bleeding is not uncommon after initial endoscopy. The mortality rate is acceptable. Most common causes of mortality are non-bleeding causes; cardiac cause is most prominent followed by pulmonary or malignancy.

Key words: *Upper gastrointestinal bleeding; Re-bleeding; Mortality*

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INTRODUCTION:

Upper gastrointestinal (GI) bleeding is defined by a bleeding from proximal to the ligament of Treitz. There are some authors who believe that bleeding source is also from the proximal jejunum [1,2]. The most important causes of upper GI bleeding are peptic ulcer disease (35–62%), gastroesophageal varices (4–31%) due to chronic liver disease, Mallory Weis tear (4-13%), gastroduodenal erosions, erosive esophagitis (2–8%), gastric neoplasm (1-4%) and others as angiodysplasia, Dieulafoy's lesions, aortoentric fistula, hemobilia, hereditary hemorrhagic telangiectasia, uremia and coagulation disorders [3].
Upper GI bleeding emergencies are characterized by hematemesis, melena, hematochezia and evidence of hemodynamic compromise such as dizziness, syncope episodes and shock [4,5].

The incidence of upper GI bleeding may be perceived higher; that is approximately 100 cases per 100,000 populations per year [6]. Bleeding from the upper GI tract is like a bleeding from lower GI which is approximately 4 times more as compare to lower GI tract. It is a major cause of morbidity and mortality. Mortality rates from upper GI bleeding are 6-10% overall [6]. In the United States, the annual rate of hospitalization for upper GI bleeding is estimated to be 165 per 100,000 more than 300,000 hospitalizations per year, at a cost of $2.5 billion [7]. The mortality rate of UGIB is 5%-14% [5].

The diagnosis and therapy for UGIB has been attributed to esophagogastroduodenoscopy with medical therapy until surgical intervention is needed. Endoscopic techniques followed by angiographic and surgical approaches can also be used if endoscopic therapy fails [8]. Although endoscopic therapy and adjuvant use of proton pump inhibitors (PPIs) have been shown to reduce the need for repeated endoscopic therapy and surgery, and have improved mortality [9,10]. The re-bleeding among patients with UGIB is associated with high mortality rate of approximately 50% [11]. The studies conducted in this regard are lacking in our setup. So this study has been conducted to update the knowledge and determine the causes of rebleeding seen among patients. By knowing the rate of rebleeding, mortality and causes, we will be in a position to make necessary recommendations to address those causes, which in turn will reduce the mortality among our patients.

MATERIAL AND METHODS:

This study was conducted from 27th March 2017 to 26th January 2018 in Medical Unit of Shaikh Zayed Medical College/ Hospital, Rahimyarkhan. Total 150 samples were recruited by Non-probability consecutive sampling technique. The inclusion criteria were all the patients in whom the diagnosis of upper GI bleeding has been established. Patients of either sex with age > 18–60 years. The exclusion criteria were the patients having history of hemetemesis after trauma or any surgery, patients with history of previous surgery on stomach or esophagus, patients who refused from colonoscopy, patients in whom the initial resuscitation fails, patients in whom the initial homeostasis could not be controlled during endoscopy. One hundred and fifty patients with diagnosis of UGIB fulfilling the inclusion criteria presenting to medical Emergency Department were admitted in general medical wards of the hospital were included in the study. Demographic history, medical history and examination were done. The patients were explained about the procedure and a written informed consent was taken. The patients under went through upper GI endoscopy in the endoscopy suit. Endoscopy was performed by OLYMPUS-X230 video endoscope in GI endoscopy suite. The endoscopy was performed by a fellow physician who has at least 5 years experience of performing endoscopy. The endoscopy was accomplished with noting the findings or securing hemostasis. The patients were admitted in the hospital for next 48 hours and were observed for re-bleeding or mortality. The patients having no repeat episodes of hemetemesis and otherwise hemodynamically stable were discharged from the hospital. Among the patients who died, the cause of the death was labeled by the two fellows of medicine having at least 5 years experience of medicine after fellowship. I collected all the data on a specially designed proforma. Statistical analysis was based using SPSS10. Quantitative data like age (in years) were described as means and standard deviation. The qualitative data included sex and re-bleeding, mortality and cause of the mortality were described as frequency and percentage. Stratification with respect to age was done to see the effect of these on outcome variable. Post stratification chi-square test was applied. $P < 0.05$ was taken as significant.

RESULTS:

One hundred and fifty patients with diagnosis of upper GI bleeding were included in the study. The mean age of the patients was 42.57 ± 8.03 years.

The males and females patients were 60.7% and 39.3% respectively. The female to male ratio was 1:1.54. (Figure 1)

Re-bleeding was seen in 11% patients while it was not present in 89% patients. (Figure 2)

Mortality was observed in 7% patients while the rest of patients were alive. (Figure 3)

There were 20% patients who died of bleeding cause, while 80% patients died of non bleeding causes. Among the non-bleeding causes, 30% patients died of cardiac cause, 20% patients died of pulmonary cause, 10% patients died of multi-organ failure, and 20% patients died of advanced malignancy. (Table 1)

Among the patients of age group 18–40 years, mortality was present 5% patients, while in patients with age group 41–60 years; mortality was seen among 8% patients. Chi-square test was applied. P-value was not significant. Among the patients of age group 18–40 years, re-bleeding was present in 10% patients, while in patients with age group 41-60 years, mortality was seen among 12.2% patients. Chi-square test was applied. P-value was not significant. (Table 2)

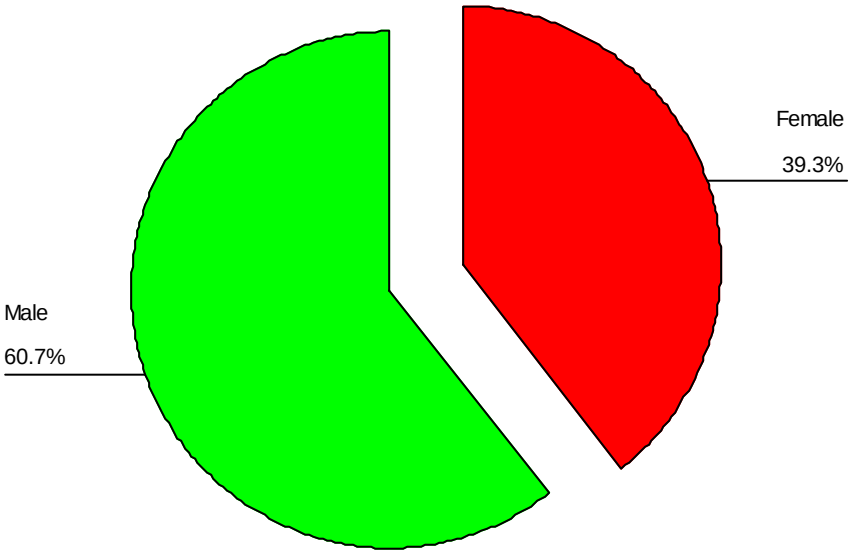

Figure 1: Distribution of patients by sex (n=150)

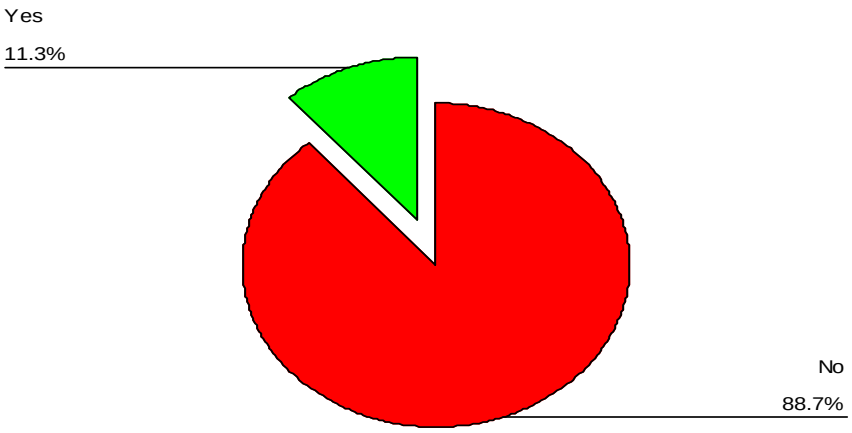

Figure 2: Distribution of patients by presence of Re-bleeding (n=150)

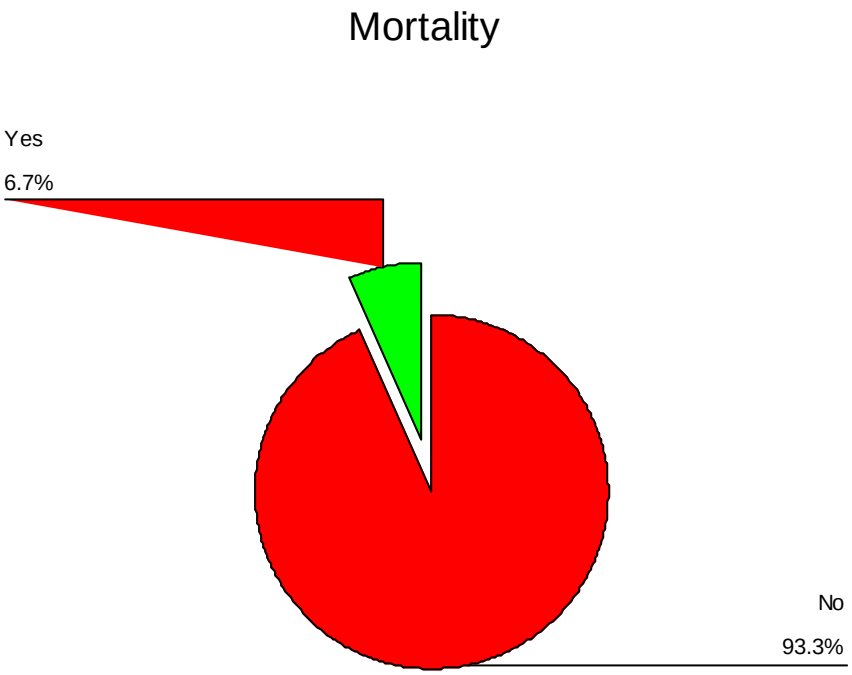

Figure 3: Distribution of patients by Mortality (n=150)

Table 1: Distribution of patients by causes of mortality (n=150)

Causes of mortality		No. of patients	Percentage
Bleeding cause		2	20
Non bleeding cause	Cardiac cause	3	30
	Pulmonary	2	20
	Multiorgan failure	1	10
	Advance malignancy	2	20

Table 2: Cross tabulation of age groups with mortality and re-bleeding (n=150)

		Mortality		Rebleed	
		Yes	No	Yes	No
		No. (%)	No. (%)	No. (%)	No. (%)
Age	18 – 40 (n = 60)	3 (5)	57 (97)	6 (10)	54 (90)
	41 – 60 (n = 90)	7 (7.7)	83 (92.2)	11 (12.2)	79 (87.8)
p-value *		0.758 **		0.863 **	

* Chi-square test
** Not significant

DISCUSSION:

This study was carried out in an effort to detect that how common was the esophageal varices among patients with upper GI bleeding. In literature, the authors have described various frequencies of the esophageal variceal bleed among the patients with UGI bleeding.

The mean age of the patients was 42.57 ± 8.03 year. This was almost similar to that of study conducted by Atif MA, [12] i.e. 42.45 ± 16.52 years and Khan SA, et al [13]. i.e. 41.64±13.56 years. However, Qari FA, et al [14]. showed a higher mean age of the patients i.e. 51 years.

There were 61% male patients and 39% patients were female with a female to male ratio of 1:1.56. Similarly, in study by Khan SA, et al [13]. male constituted 55.7 % population and female 44.3%. In study by Qari FA, et al [14]. male patients dominated with a male to female ratio of male to female ratio of 1.59:1.

In our study, the frequency of re-bleeding was 11.3%. Various studies have described various frequencies of re-bleeding in their setups. Manguso F, et al,[15] conducted a study among 140 patients with upper GI bleeding and found that re-bleeding was present among 12% patients. They did all the endoscopies within 6 hours of the episode of bleeding. Sarwar S, et al, [16] mentioned re-bleeding among 5.5% patients. In a multi-centered trial conducted by Nahon S, et al, [17] observed that frequency of re-bleeding was 12.7%. However, some studied observed a higher rate of re-bleeding. In a study by Ginn JL, et al, [18] the rate of re-bleeding was 46% and in study by Sung JJ, et al, [19] conducted a study to highlight the frequency of re-bleeding, causes and

mortality associated with UGIB. They found that re-bleeding occurred in 25.5% cases.

The frequency of mortality in our study was 6.7%. Nahon S, et al. [17] observed a frequency of 5.8%. Sarwar S, et al. [16] observed mortality among 6.7% patients. The frequency of mortality as observe by Manguso F, et al, [15] was 5.6%. Sung JJ, et al. [19] documented a lower rate of mortality i.e. 3.9%. So, this can be observed from the different studies that frequency of mortality was in an acceptable range in all the studies.

We also evaluated for the causes of mortality and observed that bleeding causes were not culprit in majority of cases as is misconception that re-bleeding may be a cause of fatality. There were 20% patients who died of bleeding cause. Among the non-bleeding causes, cardiac cause was the most prominent (30%), followed by pulmonary cause and advanced malignancy. Multiorgan failure contributed in 10% patients. Sung JJ, et al, [19] also documented the causes of mortality. They found that mortality was related to non-bleeding causes in 80% patients while than bleeding causes in 18.4% patients. Among those who died of non-bleeding-related causes, multiorgan failure (23.9%), pulmonary conditions (23.5%), and terminal malignancy (33.7%) were most common. Manguso F, et al, [15] documented mortality in 5.6% patients [onsequence of bleeding (2.1%) and 5 of non-surgical complications (3.5%). In study by Nahon S, et al, [17] death was related to a bleeding cause in 28.3% of cases (including uncontrolled hemorrhage (23.2%), death within 48h after endoscopy (1.8%), death during surgery for uncontrolled bleeding (1.8)), to a non-bleeding cause in 60% of cases (cardiopulmonary causes (20%), cerebrovascular disease (5.4%), multiorgan failure (1.8%), terminal malignancy (3.8%), uncontrolled sepsis (14.3), cirrhosis (16.1%), and was of undetermined cause in 10.7% of cases. This study has certain limitations. This was a single centered study conducted in only a limited population size. More studies in a larger population size and in multiple centers are required in order to document the true frequency of re-bleeding or mortality and causes of mortality.

CONCLUSION:

Upper gastrointestinal endoscopies may lead to re-bleeding in a high frequency. However, mortality rates are in acceptable range. The major bulk of re-bleeding contributes to the non-bleeding causes, which include the cardiac causes, pulmonary causes, and malignancy. So, it is recommended that meticulous hemostasis should be achieved during first endoscopy and the patients should be kept under observation to see if there is any re-bleeding.

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