

Frequency of Upper Gastrointestinal Bleeding in Elderly Patients with Iron Deficiency Anaemia Presented at Liaquat University Hospital Jamshoro

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Abstract

Objective: To determine the frequency of upper gastrointestinal bleeding in elderly patients with iron deficiency anemia present at Liaquat University Hospital Jamshoro.

Subject and methods: Total 100 subjects of conformed upper gastrointestinal bleeding aged 60 years and above, with iron deficiency anemia were enrolled in the study. All other patients who were not meet to inclusive criteria were excluded from study, all patients were subjected to thorough checking of blood CP, ferritin. All patients were than undergone, upper GI endoscopy in which presence/absence of bleeding site determined, data were analyzed on SPSS version 16.

Results: A total of 100 subjects with iron deficiency anemia were examined in this study. Overall 91% had upper gastrointestinal findings at endoscopy. Out of 100 subjects, 62 (62%) were males and 38 (38%) were females. Out of these 42 (42%) had got bleeding source in the stomach, 36 (36%) patients had bleeding source in the duodenum, 13 patients had got bleeding source in the esophagus the remaining 9 patients had got no source of bleeding after thorough upper GI endoscopy. Out of 62 males, 26 (41.93%) had bleeding source in the stomach, 22 males (35.48%) had Bleeding source in the duodenum, 8 (12.90%) had bleeding source in the esophagus and 6 (9.67%) males had no lesion identified. While in total 38 females, 16 (42.1%) had bleeding source in the stomach, 14 (36.84%) had bleeding source in the duodenum, 5 (13.15%) had Bleeding source in the esophagus and 3 (7.89%) had no bleeding source identified. The mean age of the patients recruited in this study was 66.9 with standard deviation of 6.47 with minimum 60 and maximum 80 years. Males are affected more than females. Maximum number of the patients with UGIB fall in 60-65 years age groups. Males and females between 60-65 years were found to have UGIB in stomach.

Conclusion: In this study, it was conducted that frequency of blood loss in elderly is from stomach followed by duodenum and esophagus. Upper GI endoscopy is investigation of choice in evaluation of patients suspected as bleeding from Upper gastro intestinal tract.

Keywords: Upper gastrointestinal bleeding; Iron deficiency; Anemia; Elderly

Introduction

A rise in the ageing population has been predicted, and, thus, it is expected that the incidence of age-related health conditions will also increase. Although common in the elderly, however, untreated anemia can be detrimental, because it is associated with increased mortality, poor health, fatigue, and functional dependence and can lead to cardiovascular and neurological complications several factors have been suggested to cause anemia in this population, for example, blood loss or chronic disease. Anemia is commonly found in the elderly, and its prevalence's expected to rise sharply in this population in the future. According to World Health Organization (WHO) criteria, anemia is defined as a hemoglobin level of less than 13 g/dL in men and less than 12 g/dL in women [1]. Anemia is defined as a clinical abnormality characterized by reduction in hemoglobin concentration below the normal for age, sex, physiological condition and altitude from the sea level of a person in patients suspected to have iron deficiency anemia, serum iron studies (i.e. serum iron, Total iron binding capacity (TIBC) and serum ferritin) were done to confirm the diagnosis p [2]. Iron deficiency anemia, mostly due to chronic occult bleeding from gastrointestinal tract, is a common problem in the elderly. Upper gastrointestinal endoscopy and colonoscopy were performed in 96 patients with iron deficiency anemia. Fifty eight upper gastrointestinal system lesions (55 patients, 57.3%) and 27 colonic lesions (26 patients, 27.1%) were detected [3]. Upper gastrointestinal bleeding (UGIB) is a

common problem associate with significant morbidity and mortality [4]. Chronic occult blood loss from the gastrointestinal tract is widely accepted as a major cause of iron deficiency anaemia [5]. Upper gastrointestinal tract lesions are more commonly associate with iron deficiency anemia than lower gastrointestinal tract lesions. Overall 60% of the patients with iron deficiency anemia had lesion on endoscopy [6]. A cause is found in approximately 80% of elderly patients, the most common causes of anemia in the elderly are chronic disease and iron deficiency. Iron deficiency anemia in the elderly almost always leads to an evaluation of the gastrointestinal tract as a possible source of bleeding. In 20 to 40% of patients, the source is in the upper gastrointestinal tract from peptic ulcer disease, gastritis, esophagitis or gastric cancer [7]. The commonest clinical presentation of patients with upper gastrointestinal tract bleeding is malaena (53.3%), the commonest endoscopic finding was multiple sources of bleeding (67.7%) while the commonest risk

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factor for upper gastrointestinal tract bleeding was NSAID use (36.7%) [8]. Endoscopy is the right and repeatable diagnostic and therapeutic tool for treating the bleeding from the upper part of gastrointestinal tract which allow us to avoid the unnecessary laparotomy. Bleeding is found in 15% to 20% gastric and duodenal ulcer [9]. Duodenal ulcer was detected as a source of bleeding in 33.4% patients and was significantly associated with male gender in 71.8% erosive gastropathy and duodenal ulcer represent a significant cause of upper gastrointestinal bleeding accounting for up to 60% of all cases that required emergency endoscopy during the 5 years prior [10]. Iron deficiency anemia due to occult gastrointestinal blood loss usually remains unnoticed until patient become symptomatic, possible cause of anemia was found in 71% and bleeding related lesion were found in 53% of patients. Upper gastrointestinal tract lesions were found in 41% of patients with bleeding related lesions [11]. Upper gastrointestinal bleeding (UGIB) in the elderly is associated with high morbidity and mortality, elders more frequently took drugs causing UGIB: 65% versus 32% for younger patients. Peptic ulcers, erosive gastritis, and esophagitis accounted for 63.6% of UGIB causes in elders versus 39.7% in younger patients [12]. The following lesions were considered upper gastrointestinal causes of iron deficiency anemia: severe erosive esophagitis (grade 3 or 4 of Savary-Miller), hiatal hernias with Cameron's erosions, severe erosive gastritis (at least 50 erosions >1 mm in diameter), gastric or duodenal ulcers greater than 10 mm in diameter, multiple (>5) angiodysplasias, esophageal varices with red spot cancers, adenomatous polyps of at least 2 cm, and celiac disease [13]. A retrospectively study reviewed the record of all patient referred for endoscopic evaluation of anemia, at Department of Gastroenterology, VA Medical Center, White River Junction, Vermont. They must have anemia and documented iron deficiency anemia, total of 375 patients with a mean age of 69 years. An upper gastrointestinal source of iron deficiency was identified in 70 patients (41%) Peptic ulcer disease (15%), erosive esophagitis (8%) or gastritis (7%), previous partial gastrectomy (6%) were found most often [14]. Iron deficiency anemia is most common cause of anemia worldwide and result from inadequate iron supply for erythropoiesis [15]. Peptic ulcer bleeding is a frequent and dramatic event with both a high mortality rate and a substantial cost for healthcare systems worldwide. It has been found that age is an independent predisposing factor for gastrointestinal bleeding, with the risk increasing significantly in individuals aged >65 years and increasing further in those aged >75 years. Indeed, bleeding incidence and mortality are distinctly higher in elderly patients [16]. Chronic gastrointestinal bleeding is the most common cause of iron deficiency anemia (IDA) in the general population. A prospectively studied 80 patients older than 80 years with IDA, using upper gastrointestinal tract (GI) endoscopy and colonoscopy, upper GI endoscopy found at least one lesion in 50 patients (72%). The most common upper GI lesions were of peptic origin (esophagitis in 10, gastroduodenal erosion in 10 and peptic ulcer in 10) lesions that causes chronic bleeding were more frequently located in upper digestive tract than in the colon [17]. Iron deficiency anemia in the elderly almost always leads to an evaluation of the gastrointestinal tract as a possible source of bleeding [18].

The objective of study was to determine the frequency of upper gastrointestinal bleeding in elderly patients with iron deficiency anemia present at Liaquat University Hospital Jamshoro.

Material and Methods

Setting

Ward of Medical Unit-II Liaquat University Hospital, Jamshoro.

Study design

Descriptive study (case series).

Duration of study

Six months from 01-08-2008 to 31-01-2009.

Sample size

Considering the proportion of upper gastrointestinal bleeding in iron deficiency anemia as 60% with 95% confidence level taking 10% bond of error the total sample would be required 100 for this study.

Sample technique

Non probability purposive sampling.

Inclusion criteria:

- Male and female
- Age 60 years and above
- Hemoglobin level less than 13 g/dl in male
- Hemoglobin level less than 12 g/dl in female
- MCV level less than 76 fl
- Ferritin level less than 100 ng/ml

Exclusion criteria:

- Anemia of chronic disease
- Vit B12 and folate deficiency anemia
- Patient with renal, hepatic and neoplastic disorder

Data collection procedure

Total 100 subjects of confirmed upper gastrointestinal bleeding aged 60 years and above, with iron deficiency anemia were enrolled in the study. All other patients who have renal, hepatic, and neoplastic disorders were excluded from study. Those who have Hb less than 13 g/dl in males and Hb less than 12 g/dl in females, ferritin less than 100 ng/ml and MCV less than 76 fl after assessing eligibility criteria were included in this study after taking informed consent, all patients were than undergone, upper GI endoscopy the endoscopy were performed in our unit by endoscopist and it were free for poor patients. Our medical unit II bore the expenses of the endoscopy from its zakat fund. All the above data was collected by me and filled in proforma in which presence/absence of bleeding site determined and attached as annex.

Data analysis procedure

Data analyzed on SPSS version 16. Frequency, proportion and percentage computed for qualitative variables e.g. sex, presence of bleeding. Mean and standard deviation computed for quantitative variables like age, stratification was on Hb levels and gender to control for the effect of change variable on the outcome of interest.

Results

A total of 100 subjects with iron deficiency anemia were examined in this study. Overall 91% had Upper gastrointestinal findings at endoscopy. Out of 100 subjects, 62 (62%) were males and 38 (38%) were females (Figure 1). out of these 42 (42%) had got bleeding source identified gastroscopically in the stomach, 36 (36%) patients had appeared as a source of bleeding on duodenoscopy, 13% patients had got bleeding source in the esophagus and remaining 9 patients

had got no source of bleeding after thorough upper GI endoscopy (Esophagogastroduodenoscopy) (Figure 2). Out of 62 males, 26 (41.93%) had bleeding source in the stomach, 22 males (35.48%) had bleeding source in the duodenum, 8 (12.90%) had bleeding source in the esophagus and 6 (9.67%) males had no lesion identified (Figure 3). While out of 38 females, 16 (42.1%) had bleeding source in the stomach, 14 (36.84%) had bleeding source in the duodenum, 5 (13.15%) had bleeding source in the esophagus and 3 (7.89%) had no bleeding source identified (Figure 4). The mean age of the patients recruited in this study was 66.9 with standard deviation of 6.47 with minimum 60 and maximum 80 years. Table 1 in our study 62 patients between 60-65 years of age groups with UGIB. Out of those, the source of bleeding was in the stomach (n-24) and duodenum (n-23). Patients between 66-70 years of age having UGIB were found to have source of bleeding most frequently in the stomach (n-10) followed by duodenum (n-7). Patients from 71-80 years of UGIB were found to have bleeding most frequently from stomach (n-8) followed by duodenum (n-6). Over all, in all age groups (60-80 years) the most common sites were stomach (n-42) and duodenum(n-36) in our study (Figure 5). Among patients between 60-65 years ages with UGIB, Male were commonly affected (n-40) as compared to females (n-22). Stomach and duodenum were more frequent site of UGIB in either sex, stomach (n-16) in male and (n-8) in females whereas duodenum was involved (n-14) in male and (n-9) females. Among patients between 66-70 years of age, again males had predomination (n-12) over females (n-10) and most frequent site



Figure 1: Ratio of Upper gastrointestinal findings at endoscopy.



Figure 2: Esophagogastroduodenoscopy.



Figure 3: Males had no lesion identified.



Figure 4: Bleeding source in the duodenum, 5 (13.15%) had bleeding source in the esophagus and 3 (7.89%) had no bleeding source identified.

found in males of this age group were stomach (n-7) and duodenum (n-3), and in female's duodenum (n-4) and stomach (n-3). Over all esophagus in both gender was less frequently affected. (Figure 6).

Discussion

According to local study conducted at CMH Peshawar cantt on upper gastrointestinal (UGI) bleeding in 2002-2004 shows that frequency of bleeding is more common in males than females, ratio is 3:219 Referring to study done in 1994 during the period of 1986 to 1990 by Gorden et al. [14] showed that iron deficiency anemia due to UGIB is more common in men (119/70) than women (51/170) 14 According to our research work out of 100 patients of iron deficiency anemia undergone endoscopy 62 were male 38 were female the ratio is 2:1. The mean age in elderly individual undergone endoscopy for evaluation of iron deficiency anemia was 69 years. Our study shows that mean age of elder patient with iron deficiency anemia (IDA) was 66.86 years with standard deviation 6.47, with minimum 60 years and maximum age 80 years.

A research work done at Brazilian Hospital for upper GI bleeding showed that the bleeding source from stomach was 43% comprising gastric ulcer, erosive/ hemorrhagic gastritis etc. [19,20]. A study done by Palmar [21] shows that the bleeding source from stomach is 40%. Our study shows on endoscopy that bleeding occurring in the stomach,

	N	Minimum	Maximum	Mean	Std. Deviation
AGE Valid N (List wise)	100 100	60.00	80.00	66.8600	6.4730

Table 1: Descriptive statistics.



Figure 5: The most common sites, stomach (n-42) and duodenum (n-36) in the study.



Figure 6: Over all esophagus in both gender was less frequently affected.

42 (42%) out of 100 patients. They comprise peptic ulcer disease, erosive gastritis etc. A study done by Zaltman and Souza [20] and others research workers in 2002 showed bleeding source in the duodenum is 36% containing duodenal ulcer [20]. A study done by Palmer [21] who identified source of bleeding in the duodenum 32%. Our study done at L.U.M.H.S Jamshoro observed as bleeding source in the duodenum in 36% patients mostly duodenal ulcers. A study done by foreign research workers at Brazil by Zaltmen [20] and other showed that bleeding source in the esophagus in 11% patients including esophageal erosions, Mallory Weiss syndrome etc., excluding varices [21].

A research work done by Palmer showed bleeding source form esophagus in 20%. Our study shows bleeding source in the esophagus 13% out of 100 patients.

A local research worker major Dr Javed Iqbal [19] done work at Pano Aqil CMH Cantt states that lesion on upper GI endoscopy in 91% of patients while remaining 9% of patients revealed undetermined source of bleeding. Another study done at Prince Rashed Hospital

Jordan in 2007 by Ahmed Banisalamah and Zakria Mriat observed that out of 120 patients who undergone endoscopy for evaluation of upper GI bleeding, 10 patients remained in undetermined group. A local study published in 2004 from PIMS Islamabad by Tahsfeen Adam and others also observed normal upper GI examination on endoscopy in 10.9% of patients who were evaluated for Upper GI bleeding. While in our work, out of 100 patients 9 patients remained in undetermined as a source of bleeding despite thorough Upper GI endoscopy. A study was conducted in department of hepatogastroenterology and Pancreatology University of Brussels in 233 patients (124 men and 109 women mean age 63 years), in this study, the lesion for UGIB was most frequently located in fundus. While in our study 62 patients (male and female) between 60-65 years age groups were found to have UGIB mostly in stomach (n-24). A local study was done in department of gastroenterology Faisalabad. This study was conducted on 100 patients with UGIB of either sex in which male were more affected than females (2:1). In our study, which was conducted on 100 patients at LUMHS Jamshoro in which male (n-40) were affected more than female (n-22). A local study published in 2004 from PIMS Islamabad by Tahsen Adam and others observed the age variations, a maximum number of patients fall in 50-59 years closely followed by 60-69 years were evaluated for UGIB [22].

While in my study maximum number of patients falls in 60-65 years age group. In the light of above discussion my study results are like that of international and national data [14,19-25].

Conclusion

In this study, it was conducted that frequency of blood loss in elderly is from stomach followed by duodenum and esophagus. Upper GI endoscopy is investigation of choice in evaluation of patients suspected as bleeding from Upper gastro intestinal tract.

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