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EVALUATION OF LOWER GASTROINTESTINAL BLEEDING

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ABSTRACT

Background: Hospitalization is frequently caused by lower gastrointestinal bleeding, a disorder that is frequently described in clinical practice. In hospitals, lower gastrointestinal bleeding plays a crucial role in predicting mortality and morbidity, especially in older patients.

Aim: The objective is to evaluate the necessity for blood transfusions, clinical evaluation, and different causes of lower gastrointestinal bleeding in patients hospitalized to a tertiary healthcare facility in India.

Methods: Of the 494 patients evaluated in the study, 412 were retrospective and 82 were prospective. In retrospective circumstances, the necessary facts and information were gathered from the records. Data collection and administration were carried out in potential cases.

Results: Of the subjects, 56.07% (n=277) were over 40. Hemorrhoids were the most prevalent pathology on colonoscopy, occurring in 30.76% (n=152) of the participants. Anorectal and colonic growth were observed in 15.18% (n=75) and 9.71% (n=48) of the individuals, respectively. 13.96% (n=69), 4.85% (n=24), and 3.84% (n=19) of the participants had inflammatory lesions, colonic polyps, and rectal polyps, respectively. Males and females had mean hemoglobin levels of 10.62±3.77 and 10.81±3.67 g/dl, respectively.

Conclusions: The current study finds that hemorrhoids are the most frequent cause of lower gastrointestinal bleeding, followed by anorectal growth, with colonoscopy being the initial and most popular test for evaluation. Only a small number of patients with lower GI bleeding require blood transfusions.

Keywords: anorectal growth, blood transfusion, colonoscopy, hemorrhoids, lower GI bleeding.

INTRODUCTION

The bleeding spot that is farther away from the Treitz ligament is known as lower gastrointestinal bleeding (LGIB). It frequently results in hospitalization and has a significant role in determining hospital mortality and morbidity, particularly in older patients. There is a dearth of information in India regarding the diagnosis, clinical evaluation, and cause of lower gastrointestinal bleeding. Lower GI tract hemorrhage accounts for about 20% of cases of acute GI bleeding. Within three days, lower gastrointestinal bleeding is classified as acute bleeding, which may result in anemia, the need for a blood transfusion, and unstable vital signs. Intermittent or gradual blood loss, such as blood passing from the rectum over several days or more, is known as chronic lower gastrointestinal hemorrhage. Melena or hematochezia can also be overt signs of LGOB or occult with positive fecal occult testing results or unexplained iron deficiency anemia.[1]

The incidence of LGIB in Western adults is 20.5–27 cases per 100,000 individuals. Localization can be carried out with low rebleed and mortality cases in India, because the bulk of subjects are young. LGIB sufferers exhibit lower shock and greater hemoglobin levels than those with acute GI bleeding. Compared to colon bleeding, small intestinal bleeding is more frequent

and necessitates more transfusions. The mortality rate for LGIB is 2-4%. Drug use, smoking history, lifestyle, food habits, population longevity, and age all have an impact on the genesis of LGIB.[2]

Non-specific ulcers are the most frequent cause in the Indian context, followed by enteric ulcers, amebic ulcers, tubercular ulcers, angiodysplasia, neoplasm, and other conditions. In contrast, colonic diverticula and angiodysplasia are the most often documented etiologies in Western data.

Due to its convenience, a colonoscopy is the most efficient and preliminary examination. Acute bleeding episodes typically result in poor vision and further obscure the source of the bleeding. While some argue for an anticipatory strategy, others support an early colonoscopy in an unprepared bowel.3 Non-invasive techniques like CT (computed tomography) and MRI (magnetic resonance imaging), often known as virtual colonoscopy, show worse outcomes than colonoscopy. Other tests such as selective visceral angiography and radioisotope scanning can be used to locate the cause of bleeding prior to surgery.[3]

Additional methods include endoscopy with push enteroscopy utilizing a pediatric colonoscope, angiography, vasopressin infusion, embolization, double-ballon enteroscopy, and 99mTc-radiolabeled sulfur scintigraphy.4 Intraoperative enteroscopy is the gold standard for small intestinal bleeding, while wireless capsule endoscopy, or WCE, is a more recent technique.[4]

In the assessment of LGIB, barium studies of the colon and small intestine play a limited role. Only a small number of people require active therapy, such as surgery, angiography, and therapeutic colonoscopy; the majority of subjects stop bleeding on their own. Laser coagulation, heater probe, injection, and electrocautery are all part of colonoscopy. Subjects who continue to bleed or who rebleed after stopping are given intervention.[5]

The current study sought to evaluate clinical evaluation, blood transfusion requirements, and different causes in patients with lower gastrointestinal bleeding who were hospitalized to a tertiary medical facility in India.

MATERIALS AND METHODS

The goal of the current combined prospective and retrospective study was to evaluate the need for blood transfusions, clinical evaluation, and different causes in patients with lower gastrointestinal bleeding who were hospitalized to a tertiary healthcare facility in India.

The Institute's Outpatient Department provided the study participants. The study's prospective participants provided both written and verbal informed consent. The study evaluated 494 participants of both sexes, 82 of whom were prospective cases and 412 of whom were retrospective. Upper GI endoscopy, or UGIE, was performed on each participant who had gastrointestinal bleeding. Subjects with healed gastrointestinal ulcers, clean-based gastritis on UGIE, and no lesion accounting for ongoing bleeding met the study's inclusion criteria. A colonoscopy was used to evaluate each participant. CTE (CT enterography) was performed on subjects who were bleeding sporadically but not profusely. CTA (CT angiography) was done for persistent and significant bleeding. RBC scanning was performed on a patient whose colonoscopy results were not diagnostic.

Age, gender, coagulation profile, liver and kidney function tests, complete blood count, history of blood transfusions, bleeding diathesis, use of any medication interfering with platelet functions or causing coagulopathy, and use of NSAIDs (non-steroidal anti-inflammatory drugs) were all determined from the available data and records in 412 retrospectively evaluated subjects. Each patient received therapy while in the hospital, and data from CTA, CTE, colonoscopy, or upper GI endoscopy, if performed, were documented on a pre-made structured proforma.

A thorough history, coagulation profile, liver and kidney function tests, complete blood counts, and other pertinent investigations were obtained from 82 prospectively evaluated participants. When necessary, CTA was completed. Supportive interventions such blood transfusions for hemoglobin levels less than 7 gm/dl, correction of metabolic and electrolyte imbalances, intravenous fluids, and other symptomatic treatments were used to treat all participants with LGIB, including those whose origin was unknown. Medical management was used to treat subjects with infectious colitis and inflammatory bowel disease.

Sclerosantsetc and adrenaline injections were administered as part of endoscopic therapy. Individuals who did not respond to endoscopic therapy or who had non-amenable bleeding were treated surgically, and intraoperative results were recorded on a proforma.

The chi-square test and descriptive metrics were evaluated by statistical analysis of the data using SPSS software. The mean, standard deviation, frequency, and percentages were used to express the results. A p-value of less than 0.05 was regarded as statistically significant.

RESULTS

The goal of the current combined prospective and retrospective study was to evaluate the need for blood transfusions, clinical evaluation, and different causes in patients with lower gastrointestinal bleeding who were hospitalized to a tertiary healthcare facility in India. The study evaluated 494 participants, of which 82 were prospective cases and 412 were retrospective. 56.07% (n=277) of the study participants were over 40, whereas 43.92% (n=217) were under 40. In the current study, there were 29.55% (n=146) females and 70.44% (n=348) males. 83.40% (n=412) of the study's participants were evaluated retrospectively, while 16.59% (n=82) were evaluated prospectively. 67% (n=331) of the individuals had no comorbidity, while 7.08% (n=35) had both diabetes and hypertension in 8.50% (n=42) subjects, diabetes in 11.33% (n=56) subjects, and other comorbidities as CKD, CLD were seen in 6.07% (n=30) subjects respectively (Table 1).

According to the study's findings, hemorrhoids accounted for 30.76% (n=152) of the causes of lower gastrointestinal bleeding in study participants seen on colonoscopy, followed by anorectal growth in 15.38% (n-76), ulcerative colitis in 11.74% (n=58), colonic growth in 9.71% (n=48), nonspecific colitis in 9.10% (n=45), colonic polyp in 5.66% (n=28), rectal polyp in 3.84% (n=19), rectal ulcers in 3.64% (n=18), and diverticulosis in 3.44% (n=152).

Hematochezia was the most frequent clinical presentation in research participants with lower gastrointestinal bleeding, occurring in 59.51% (n=294) of the 494 participants, followed by bloody diarrhea in 23.88% (n=118), anorectal bleeding in 13.76% (n=68) subjects, and melena in 2.83% (n=14) study subjects respectively (Table 1).

Additionally, it was observed that 494 research participants had colonoscopic evaluation, which allowed for the localization of the LGIB in 95.9% (n=474) of the cases. Out of 13 participants, CTE showed positive results in 46.15% (n=6). Enteric formations were observed in two cases, while enteric polyps were observed in four. Of the eight patients that had CTA, 12.5% (n=1) had positive CTA. One patient had a right colon lesion with vascular dilatation, and another had a sigmoid diverticular bleed. An RBC scan revealed Meckel's diverticulitis in one participant.

DISCUSSION

The study evaluated 494 participants, of which 82 were prospective cases and 412 were retrospective. 56.07% (n=277) of the study participants were over 40, whereas 43.92% (n=217) were under 40. In the current study, there were 29.55% (n=146) females and 70.44% (n=348) males. 83.40% (n=412) of the study's participants were evaluated retrospectively, while 16.59% (n=82) were evaluated prospectively. 67% (n=331) of the participants had no comorbidity, 7.08% (n=35) had both hypertension and diabetes, 8.50% (n=42) had both conditions, 11.33% (n=56) had diabetes, and 6.07% (n=30) had other comorbidities such CKD and CLD. These records were comparable to those made by Onyekwere CA et al. (2013) and Okamoto T et al. (2012), whose authors evaluated participants using demographic information similar to that of the current investigation.

Hemorrhoids were found to be the most common cause of lower gastrointestinal bleeding in study participants seen on colonoscopy, accounting for 30.76% (n=152), followed by anorectal growth in 15.38% (n=76), ulcerative colitis in 11.74% (n=58), colonic growth in 9.71% (n=48), nonspecific colitis in 9.10% (n=45), colonic polyp in 5.66% (n=28), rectal ulcers in 3.84% (n=19), and diverticulosis in 3.44% (n=18).

These findings were in line with research by Al Qahtani AR et al.8 and Hara AK et al.9, who likewise found that the most frequent cause of lower gastrointestinal bleeding in their study participants was hemorrhoids, followed by anorectal growth.

Hematochezia, which was observed in 59.51% (n=294) of the 494 study subjects with lower gastrointestinal bleeding, was the most common presenting clinical picture. This was followed by bloody diarrhea in 23.88% (n=118), anorectal bleeding in 13.76% (n=68), and melena in 2.83% (n=14) of the study subjects. These results were consistent with those of Sodhi JS et al. (2010) and Wajeehuddin A et al. (2011), who found hematochezia followed by bloody diarrhea in their lower GI bleed study patients.

According to the study's findings, 494 participants had colonoscopic evaluation, which allowed for the localization of the LGIB in 95.9% (n=474) of the subjects. Out of 13 participants, CTE showed positive results in 46.15% (n=6). Enteric formations were observed in two cases, while enteric polyps were observed in four. Of the eight patients that had CTA, 12.5%

(n=1) had positive CTA. One patient had a right colon lesion with vascular dilatation, and another had a sigmoid diverticular bleed. An RBC scan revealed Meckel's diverticulitis in one participant.

These findings were consistent with those of Loffeld RJ et al. (2002) and Campbell WB et al. (2002), whose authors proposed comparable conclusions about the diagnostic modalities used in study participants as observed in the current investigation.

CONCLUSIONS

Taking into account its limitations, the current study comes to the conclusion that hemorrhoids are the most frequent cause of lower gastrointestinal bleeding, followed by anorectal growth, with colonoscopy being the first and most popular test for evaluation. Only a small number of patients with lower GI bleeding require blood transfusions. Prospective research with more participants and longer durations are required in the future.

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S. No	Characteristics	Number (n=494)	Percentage (%)
1.	**Age (years)**		
a)	<40	217	43.92
b)	>40	277	56.07
2.	**Cases**		
a)	Prospective	82	16.59
b)	Retrospective	412	83.40
3.	**Gender**		
a)	Males	348	70.44
b)	Females	146	29.55

4.	**Comorbidities**		
a)	No comorbidity	331	67
b)	Hypertension and diabetes	35	7.08
c)	Hypertension	42	8.50
d)	Diabetes	56	11.33
e)	Others (CKD, CLD)	30	6.07
5.	**Blood transfusion needs**		
a)	Yes	139	28.13
b)	No	355	71.86
6.	**Clinical presentation**		
a)	Melena	14	2.83
b)	Anorectal bleeding	68	13,76
c)	Bloody diarrhea	118	23.88
d)	Hematochezia	294	59.51

Table 1: demographic and disease data in study subjects at baseline

S. No	Colonoscopy findings	Number (n=494)	Percentage (%)
1.	**Angiodysplasia**	13	2.63
2.	**Diverticulosis**	17	3.44
3.	**Rectal ulcers**	18	3.64
4.	**Rectal polyp**	19	3.84
5.	**Colonic polyp**	28	5.66
6.	**Anal fissure**	37	7.48
7.	**Nonspecific colitis**	45	9.10
8.	**Colonic growth**	48	9.71
9.	**Ulcerative colitis**	58	11.74
10.	**Anorectal growth**	76	15.38
11.	**Hemorrhoids**	152	30.76

Table 2: Colonoscopy findings in study subjects