EVALUATION OF LOWER GASTROINTESTINAL BLEEDING WITH SPECIAL REFERENCE TO COLONOSCOPY

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ABSTRACT

BACKGROUND
We wanted to evaluate the aetiology, age incidence, histopathology, site of occurrence of lower gastrointestinal bleeding using colonoscope. We also wanted to study the clinical presentations of different types of lower gastrointestinal bleeding along with effect of diet on it.

MATERIALS AND METHODS
134 patients were selected for the study who had complained of per rectal bleeding. After bowel preparation using colonoscope Olympus CV-170, both macroscopic & histopathological diagnosis, most common site involved and age of incidence were determined.

RESULTS
This study of 134 cases shows that the mean age of diagnosis was 44.40 years. For all types of lower gastrointestinal bleeding, the age range was (2-83) years. The most common aetiology of lower gastrointestinal bleeding is internal haemorrhoids- 45 (33.58%), followed by normal mucosa in 33 (24.62%) cases and the least common is lax anal canal with posterior anal fissure 1 case (0.74%). Colorectal masses, inflammatory and/or ulcerative colonic lesions & polyps were found in 15 (11.19%), 18 (13.43%) and 13 (9.70%) cases respectively. 15 (11.19%) cases had colorectal cancer. Male 8 (5.97%) cases have higher percentage of cancer than female 7 (5.22%) cases. Mean age of diagnosis of colorectal cancer in this series is 45.13±18.05 years. Rectum (58.20%) is the most common site involved followed by whole colon (24.62%). The study carried out had bleeding per rectum (100%) & constipation (100%) in all patients. Dehydration (11.19%) and anorexia (11.19%) were the least common clinical presentations. Biopsy was done in 27 (20.14%) cases, which revealed adenocarcinoma in 14 (10.44%) cases followed by mucinous adenocarcinoma in 1 (0.74%) case. Rectal polyps were found in 12 (8.95%) cases. Dietary habit has definitive role as shown by non-vegetarian/vegetarian ratio 5.06. Only 54 (40.44%) cases had definite family history. Rectal polyps in this set up were more commonly seen in younger age (22.23 ± 20.63 years) group, in whom histopathological evaluation was done to rule out future possibility of malignancy. In many cases of colonoscopy, no abnormality was detected. The most common aetiology of lower gastrointestinal bleeding in these cases was irritable bowel syndrome which was further evaluated by esophago-duodenoscopy and enteroscopy.

CONCLUSION
Colonoscopy is one of the best modalities to diagnose causes of lower gastrointestinal bleeding. It will be better to have screening colonoscopy after age of 50.

KEYWORDS
Lower Gastrointestinal Bleeding, Colonoscopy, Colorectal Mass.

Lower gastrointestinal bleeding is diagnosed in 20% to 30% of all patients presenting with major gastrointestinal bleeding. The annual incidence of lower gastrointestinal bleeding is 0.03% and it increases 200-fold from the second to eighth decades of life. The mean age at presentation ranges from 63 to 77 years. Lower gastrointestinal bleeding occurs more often in men than in women.

Acute lower gastrointestinal bleeding is defined as bleeding of recent duration (<3 days) that may result in hemodynamic instability, anemia or need for blood transfusion, whereas chronic lower gastrointestinal bleeding is the passage of blood per rectum over a period of several days or longer and usually implies intermittent or slow loss of blood. Patient with chronic lower gastrointestinal bleeding present with occult faecal blood, intermittent melena or maroon stools or scant amounts of bright red blood per rectum.

The severity of acute lower gastrointestinal bleeding is variable, but overall mortality is low. In most cases bleeding will stop spontaneously (80-85%). Mortality is higher (2 to 4%) in older adult and in those with intestinal ischemia and other comorbidities.

In this medical college there has been no study regarding aetiology, epidemiology of lower gastrointestinal bleeding in southern part of Odisha. Hence this study has been carried out to get the exact picture of lower gastrointestinal bleeding with respect to aetiology, age, sex, diet etc. parameters using colonoscopy and histopathology.

Aims and Objectives
To find out the incidence of lower gastrointestinal bleeding according to age, diet and to evaluate the causes, clinical presentations, distribution of lower gastrointestinal bleeding using colonoscopy. Apart from this to study the histopathological findings of the different lesions diagnosed by colonoscopy.

Study Design
This is a prospective study. Study population will be selected after applying following inclusion and exclusion criteria.

Study Population
This study was conducted in Department of Surgery M.K.C.G. Medical College Hospital, Berhampur. All consecutive patients for both sex and all age groups presenting with clinical features of lower gastrointestinal bleeding were studied and admitted to the general surgery, department of M.K.C.G. Medical College Hospital, Berhampur during the period from July 2016 to June 2018.

Inclusion Criteria
- All patients with history of per rectal bleeding.

Exclusion Criteria
- All patients with features suggestive of upper gastrointestinal bleeding.
- Patient with anticoagulant therapy.
- Patient with bleeding diathesis.

MATERIALS AND METHODS
Using colonoscope Olympus CV-170, gastrointestinal tract from caecum to rectum analysed and whenever required biopsy were taken.

After taking through history, general and systemic examinations were done. Then patient had to undergo digital rectal examination and proctoscopic examination. The elective patients were evaluated by using colonoscope.

During a colonoscopy, small amounts of tissue was removed for histopathological examination and polyps were identified and entirely removed.

RESULTS
Following observation were made in 134 cases of lower gastrointestinal bleeding. The data obtained was coded and entered into the Microsoft Excel. The categorical data was expressed in terms of rates, ratios and percentages and continuous data was expressed as mean ± standard deviation.

From the study of 134 cases of lower gastrointestinal bleeding, it was found that the most common cases were internal haemorrhoids found in older age group in 45 (50.22 ± 16.89 years) cases. In younger age group polyps were found in 13 (22.23 ± 20.63 years) cases. In this study the age range is 2 to 83 years. The mean of all age group is 44.40 years and standard deviation is 44.40 ± 18.34.
The most common aetiology of lower gastrointestinal bleeding was internal haemorrhoids 45 (33.58%), followed by normal mucosa in 33(24.62%) cases and the least common was lax anal canal with posterior anal fissure in 1(0.74%) case.

<table>
<thead>
<tr>
<th>The Site of Lesions</th>
<th>No. of Patients</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anal Canal</td>
<td>9</td>
<td>6.71</td>
</tr>
<tr>
<td>Ano-Rectum</td>
<td>1</td>
<td>0.74</td>
</tr>
<tr>
<td>Rectum</td>
<td>78</td>
<td>58.20</td>
</tr>
<tr>
<td>Recto-Sigmoid</td>
<td>10</td>
<td>7.46</td>
</tr>
<tr>
<td>Sigmoid Colon</td>
<td>1</td>
<td>0.74</td>
</tr>
<tr>
<td>Descending Colon</td>
<td>1</td>
<td>0.74</td>
</tr>
<tr>
<td>Splenic Flexure</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Transverse Colon</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hepatic Flexure</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ascending Colon</td>
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<td>0.74</td>
</tr>
<tr>
<td>Caecum</td>
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<td>0</td>
</tr>
<tr>
<td>No Lesions</td>
<td>33</td>
<td>24.62</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>134</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 1. Distribution of Lower Gastrointestinal Bleeding Diagnosed by Colonoscopy

In this study rectum is the most common site in 78(58.20%) cases, followed by Recto-sigmoid, Anal canal, Sigmoid colon, Descending colon, Ascending colon in 10(7.46%), 9(6.71%), 1(0.74%), 1(0.74%), 1(0.74%) cases respectively. Splenic flexures, Transverse colon, Hepatic flexure, Caecum were totally not involved. In 33 cases (24.62%) colon and rectum were totally not involved and the colonoscopy findings were normal.

The most common mode of presentation of LGIB was, bleeding per rectum and constipation. The least common presentation was dehydration.

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In this study non-vegetarian 112(83.58%) cases were found. This establishes that non-vegetarian were more prone to develop gastrointestinal bleeding. The ratio of non-vegetarian to vegetarian is 5.06:1. Hence non-vegetarian are 5 times more susceptible to develop lower gastrointestinal pathology.

Out of 134 colonoscopy cases 15(11.19%) have colorectal cancer. Rectum (60%) was the most common site having both Ulcerative and Proliferative growth. 1(6.66%), 1(6.66%), 3(20%), 9(60%), 1(6.66%) cases were detected in Ascending colon, Sigmoid colon, Recto sigmoid junction, Ano-rectum respectively. Ascending colon, Sigmoid colon had proliferative growth. Recto-sigmoid junction, anorectum
had ulcero-proliferative growth and constrictive growth respectively.

**DISCUSSION**

Colonscopy is a commonly performed procedure and it has both diagnostic as well as therapeutic utility. It is first line investigation to exclude lower gastrointestinal pathology like polyp, mass, diverticulosis, angiodysplasia, colitis, internal haemorrhoids etc. It has also role in therapeutic polypectomy and diagnostic biopsy collection for histopathological study.\(^1\)\(^,\)\(^2\) Proper patient selection should be made while doing both diagnostic and therapeutic colonoscopy as colonoscopy is an invasive procedure and complication is also there.

**Age Incidence**

From the study carried out in 134 cases of lower gastrointestinal bleeding, it was found that the most common cases were internal haemorrhoids which were found in older age group (50.22 ± 16.89 years) but in younger age group polyps were found (22.23 ± 20.63 years). In this study the age range is 2 to 83 years. The mean of all age group is 44.40 years and standard deviation is 18.34.

This can be compared to a study by Dar IA et al, in which age of patients ranged from 1 to 85 years with mean age of 40.8 years. LGIB was seen to affect individuals of all ages. However most commonly affected were elderly population (>60 years), constituting 40\% (120/300) of studied population. Least commonly affected were young adults (16-60 years) comprising 26.6\% (80/300) of the studied population while children comprised a significant proportion of LGIB (33.3\%, 100/300).\(^3\)

In the study by Alruzug IM et al. the mean age of diagnosis was 50 years (IQR 38 – 65) and 51.8 (SD 18.4) years, respectively (range 18 to 113 years) for male and females. 32 34\% of the patients presented with age between 18 to 30 years. The mean age was 43.82±17.96 years.\(^4\)

In the study by Badiger RH et al, the mean age was 43.82±17.96 years.\(^5\) In a study by Fernandez et al the mean age was 59 ± 16.9 years.\(^6\)

**Aetiology Of LGIB**

In this study of 134 cases the most common aetiology of lower gastrointestinal bleeding was internal haemorrhoids 45 (33.58\%), followed by normal mucosa in 33(24.62\%) cases and the least common was lax anal canal in 1(0.74\%) case. Colorectal masses, Inflammatory and/or ulcerative colonic lesions & Polyps were found in 15(11.19\%), 18(13.43\%) and 13(9.70\%) cases respectively.

This can be compared to a study conducted by a study by Dar IA et al, in which the most common cause of LGIB was colorectal polyps, which constituted 23.3\% while as 17.7\% cases could be attributed to IBD.\(^3\) In west the leading causes of significant LGIB are diverticulosis and angiodysplasia.\(^7\)\(^,\)\(^8\)

In the study by Alruzug et al, Haemorrhoids found in 369(38.5\%) patients, diverticulosis in 108(12.3\%) cases, mass or tumour in 88(10\%) cases confirmed by histopathology to be malignant, rectal ulcer in 79(8.2\%) cases, colitis including inflammatory bowel disease, ischemic colitis, drug-induced or infectious colitis in 78(8.1\%) cases, were the most common colonoscopy findings of LGIB. Other findings were polyps in 40 patients (4.6\%) including benign or malignant polyps (post polypectomy bleeding was added in this category), angiodysplasia in 28(3.2\%) cases and other causes in 3 patients (0.3\%), including Dieulafoy’s lesion and rectal varices. Normal colonoscopy findings were observed in 140 patients (14.6\%).\(^4\)

In a study by Gralnek IM et al, Colonoscopy findings were haemorrhoids (64.4\%), diverticulosis (38.6\%), and polyp or multiple polyps (38.8\%).\(^9\)

In a study by Badiger RH et al, the most common diagnosis was internal haemorrhoids noted in 48\% cases followed by ulcerative colitis in 10\% cases.\(^5\)

**Anatomical Distribution of Lesions**

In this study rectum is the most common site in 78(58.20\%) cases, followed by, Recto-sigmoid, Anal canal, Sigmoid colon, Descending colon, Ascending colon in 10(7.46\%), 9 (6.71\%), 1 (0.74\%), 1 (0.74\%), 1 (0.74\%) cases respectively. In 33 (24.62\%) cases colon and rectum not affected by any pathology. Splenic flexures, Transverse colon, Hepatic flexure, Caecum were totally not involved.

This can be compared to the study by Thakreb et al & Mahamoud et al; who found that the recto-sigmoid region was the most common segment involved (79.2\% &85.2\% respectively).\(^10\)\(^,\)\(^11\)

**Clinical Presentations**

In this study Bleeding per rectum, Constipation, Stool +Blood /Mucus, Abdominal pain, Alteration in bowel habit, Tenesmus, Chronic diarrhoea, Fever, Loss of Weight, Anorexia, Dehydration detected in 134(100\%), 134(100\%), 118(88.05\%), 46(34.32\%), 33(24.62\%), 32(23.88\%), 20(14.92\%), 18(13.43\%), 16(11.94\%), 15(11.19\%), 15(11.19\%) cases respectively. The most common mode of presentation of LGIB was, bleeding per rectum and constipation. The least common presentation was dehydration.

This can be compared to a study conducted by Dar IA et al, from Jammu and Kashmir in which that most common mode of presentation of LGIB was haematochezia in 63.3\% patients followed by bloody diarrhoea in 17\%, anorectal bleed in 12.33\%, and melena in 7\% cases.\(^3\)

In Badiger RH et al, study, the most common clinical symptoms were bleeding per rectum in 40\% followed by constipation in 76\%, loss of weight in 56\%, blood mixed with stools in 50\% cases.\(^3\)

**Histopathological Diagnosis**

In this study the most common histology is Adenocarcinoma in 14(10.44\%) cases followed by, Mucinous carcinoma in 1(0.74\%) case. Hyperplastic rectal polyp was found in 4 (2.98\%) cases. Adenomas were found in 9(6.71\%) cases.
which include Tubular adenoma in 5(3.73%), Tubulo-villus adenoma in 3(2.23%), and Villous adenoma in 1(0.74) cases.

This can be compared to a study by Thakeb et al, who found adenomatous polyps in 6.7% of all cases among his study. In a study by Mahamoud et al, found a much higher incidence of adenomatous polyps in their work (98 adenomas with low grade dysplasia 50.5% and 25(12.9%) cases of adenoma with high grade of dysplasia).11

In study by Fernandez et al, reported frequency of acute LGIB resulting from colonic neoplasms ranges from 2% to 26%. In a study by Kantilal MN et al, Adenocarcinoma (52.55%) was the most common microscopic type.12

In the series of Mahamoud et al., 99 patients (8.5%) presented with colorectal masses, these tumours were benign in 10 cases including 7 inflammatory pseudo-tumours and 3 lipomas while 89 cases proved histopathologically to be malignant (adenocarcinoma in 76 patients (76.7%), 2 cases of malignant melanoma, one case of squamous cell carcinoma of rectum and other malignancies in 10 cases).11

Thakeb et al. group presented with change in bowel habits (75.7%), bleeding per rectum (33.3%), partial or complete intestinal obstruction (16.6%) and/or abdominal mass (13.6%). In a study by Alruzug IM et al, frequency of acute LGIB resulting from colonic neoplasms ranges from 2% to 26%.4

Dietary Incidence of Lower Gastrointestinal Bleeding

In this study non-vegetarian 112(83.58%) cases were found. This establishes that non-vegetarians were more prone to develop gastrointestinal bleeding. The ratio of non-vegetarian to vegetarian is 5.06:1. Hence non-vegetarian is 5 times more prone to develop lower gastrointestinal pathology.

This can be compared to the study by Badiger RH et al, in which 90% of the patients reported history of mixed diet. In patients with mixed diet the clinical presentations significantly associated with internal haemorrhoids are haematochezia, loss of appetite, tenesmus and passage of mucus in stools, constipation, abdominal pain and vomiting.5

Coloscopy Finding of Carcinoma Cases

Out of 134 coloscopy cases 15(11.19%) have colorectal cancer. Rectum 9(60%) was the most common site having both Ulcerative and Proliferative growth. 1(6.66%), 1(6.66%), 3(20%), 1(6.66%) cases were detected in Ascending colon, Sigmoid colon, Recto-sigmoid junction, Ano-rectum respectively. Ascending colon, Sigmoid colon and Right colon have proliferative growth. Recto-sigmoid junction, Ano-rectum had Ulcero-proliferative growth and Constrictive growth respectively. 14(93.33%) cases had been found in the left side of colon and rectum.

This can be compared to a study by Alruzug IM et al, where colorectal neoplasm constituted approximately 10% of findings in patients with LGIB. More than 90% of these tumours were located in the left colon and confirmed by pathology to be malignant.4

Thakeb et al. found cancer colon in less than 10% of cases and mainly in the recto-sigmoid region. Similarly, Mahamoud et al, found cancer colon in 76 cases (6.6%), 55% of whom were located in the recto-sigmoid region. On the other hand, they found a significant number of cases either in the ascending colon in 17.9% cases, or in the caecum in 15.7% cases.11

CONCLUSION

Lower gastrointestinal bleeding is not a rare entity in MKCG Medical College Hospital. Colonoscopy is the most important investigation done initially to evaluate the lower gastrointestinal bleeding. In this study, the age range was (2-83) years. The most common aetiology of lower gastrointestinal bleeding is internal haemorrhoids (34%). Around 12% cases had colorectal cancer and rectum (58%) is the most common site. Non-vegetarians are more susceptible to develop lower gastrointestinal bleeding pathology. Rectal polyps were found mostly in younger age group. It is better to have screening colonoscopy after age of 50 years to rule out any malignant causes of lower gastrointestinal bleeding.

REFERENCES


