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Original Article

Clinical Utility of Colonoscopy in Young Patients with Rectal Bleeding in Bangladesh

Mostafa Noor Mohsin[1*]
Nitin Jagtap[2]
Md. Mahbubur Rahman[3]
Md. Naushad Ali[4]
Md. Abdullah Al Mamoon[5]
Ershad Uddin Ahmed[1]
Tareq Mahmud Bhuiyan[5]

[1]Department of Gastroenterology
Chittagong Medical College
Chattogram, Bangladesh.

[2]Department of Gastroenterology
Asian Institute Of Gastroenterology
Hyderabad, India.

[3]Department of Gastroenterology
Uttara Adhunik Medical College Hospital
Dhaka, Bangladesh.

[4]Department of Gastroenterology
Rangpur Medical College Hospital
Rangpur, Bangladesh.

[5]Department of Gastrointestinal, Hepatobiliary and Pancreatic Disorder (GHPD)
BIRDEM, Dhaka, Bangladesh.

*Correspondence to:
Dr. Mostafa Noor Mohsin
Assistant Professor
Department of Gastroenterology
Chittagong Medical College
Chattogram, Bangladesh.
Mobile : +88 01819 38 21 62
Email : mostafamohsin14@gmail.com

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Abstract

Background: *Rectal bleeding is a very common symptom. Intermittent passage of small amount of bright red blood from rectum is a clinical problem frequently found in patients of all ages. It's often attributed by the patients to 'piles' and indeed haemorrhoids or piles are a common cause of this symptom. However, there are other causes and it is important to know what the possible causes are and how to investigate the symptom further. The type and amount of bleeding as well as the age of the patient are important in the initial assessment of the bleeding. Colonoscopy is the investigation of choice for establishing a diagnosis and treatment. In the current study, we aimed to study clinical utility of colonoscopy in young patients with chronic LGI bleeding.*

Material and methods: *This prospective observational study was conducted between May 2010 to December 2010 at Department of Gastrointestinal, Hepatobiliary and Pancreatic Disorder (GHPD) of BIRDEM General Hospital, Dhaka, Bangladesh including all consecutive patients with age less than 40 years, presenting with per rectal bleeding of duration more than 4 weeks.*

Results: *A total of 396 colonoscopies were performed in patients with age less that 40 years, of them 103 were enrolled in this study as per inclusion and exclusion criteria. The mean age of study population was 28.19 (SD 10.01, range 3 -40) years with 34 (33%) females. In majority of patients chronic LGI bleed was present for more than 6 months. Of them, 29 (28.2%), 16 (15.5%) and 9 (8.7%) had history of LGI bleed for 7 – 12 months, 13 – 24 months and more than 25 months respectively. Remaining 44 (42.7%) had LGI bleed for 6 months. Intermittent per rectal bleeding was present in 97 (94.2%), remaining 6 patients (5.8%) complained of daily rectal bleeding. Colonoscopy was attempted in 103 patients, with cecal intubation rate of 98.1% (101/103). The diagnostic yield was 91.26% (94/103). Anorectal region was most common site for the lesion (50/94, 53.19%). Six patients (6.38%) had proximal colonic lesions and pan colonic lesions each. Hemorrhoids in isolation (29/94, 30.85%) or in combination of other lesions (16/94, 17.02%) was most common colonoscopic finding.*

Conclusion: *Rectal bleeding is a symptom to be considered carefully, since it can be associated with malignancy. Since neoplastic and non-neoplastic disease may coexist, it is controversial as to whether chronic rectal bleeding in the young patients requires colonoscopy as a first line investigation. The optimal approach to young patients is not known. Colonoscopy is a valuable diagnostic tool and can help to establish the source of rectal bleeding in young patients.*

Key words: Rectal bleeding; Colonoscopy; Haemorrhoids; Melena.

INTRODUCTION

Lower Gastrointestinal (LGI) bleeding is a common clinical problem. LGI bleeding generally occurs from the colon or anorectum. There is increased risk of LGI bleed in elderly populations, with annual incidence of 20 cases/100.000 population[1]. In

majority of cases, it ceases spontaneously. Patients with major bleed or ongoing bleeding require early diagnosis and prompt interventional therapy either colonoscopic, radiological or surgical for hemostasis[2]. Colonoscopy is the investigation of choice for establishing a diagnosis and treatment[1-3].

LGI bleeding can be acute or chronic. Acute colonic bleeding defined as that occurring from the colon, rectum, or anus and presenting as either hematochezia or melena[4]. Severe painless hematochezia can results from upper gastrointestinal tract in approximately 15% of non-cirrhotic patients[2,5-8]. Chronic colonic bleeding is defined as bleeding per rectum that occurs over weeks or months. It is common presentation associated with anorectal, neoplastic, vascular and inflammatory diseases[5,9-11]. Majority of studies on lower GI bleeding are in elderly population or acute bleeding and showed clinical utility of colonoscopy in them[12,13]. The causes and management of LGI bleed varies according to age of the patient[10]. However, there is scarcity of literature about chronic LGI bleeding in young adults.

In the current study, we aimed to study clinical utility of colonoscopy in young patients with chronic LGI bleeding.

MATERIALS AND METHODS

This study was conducted between May 2010 to December 2010 at Department of Gastrointestinal, Hepatobiliary and Pancreatic Disorder (GHPD) of BIRDEM general hospital, Dhaka; Bangladesh. This is a single center, prospective observational study. This study included all consecutive patients with age less than 40 years, presenting with per rectal bleeding of duration more than 4 weeks. Informed consent was taken from all enrolled patients. Patients with age more than 40 years, suspected or confirmed upper GI bleeding, family history of colorectal carcinoma, previous colonic surgery were excluded. Patients requiring intensive care due to massive bleed were also excluded.

Demographic data, history of smoking or alcohol intake and relevant clinical history was noted. Laboratory, colonoscopy and histopathology findings whenever applicable were collected. All colonoscopies were performed by senior gastroenterologist after single dose of 2 liters preparation with polyethylene glycol. In case of inadequate bowel preparation, colonoscopy was rescheduled for next day after repeat preparation. Upper esophagogastroduodenoscopy was used in children according to clinical judgement of endoscopists. Cecal intubation rate and colon withdrawal time was noted. Diagnostic yield was defined as detection of lesion during colonoscopy which can explain clinical scenario. Categorical variables were expressed as percentages while continuous variables were expressed as mean and standard deviation. Chi square test was used for comparison of qualitative data. Statistical analysis was performed using SPSS version 25.

RESULTS

A total of 396 colonoscopies were performed in patients with age less that 40 years, of them 103 were enrolled in this study as per inclusion and exclusion criteria. The mean age of study population was 28.19 (SD 10.01, range 3 -40) years with 34 (33%) females. There are 13 (12.6%),46 (44.7%) and 44(42.7%) patients in age < 15, 16 to 30 and 30 to 40 years groups respectively. Thirty one (30.1%) were smokers while 15 (14.6%) were having diabetes mellitus. None of the patient had history of alcohol consumption.

Presence of constipation (45.6%), abdominal pain (32%) and weight loss (24.3%) were most common symptoms. In majority of patients chronic LGI bleed was present for more than 6 months. Of them, 29 (28.2%), 16 (15.5%) and 9 (8.7%) had history of LGI bleed for 7 – 12 months, 13 – 24 months and more than 25 months respectively. Remaining 44 (42.7%) had LGI bleed for 6 months. Intermittent per rectal bleeding was present in 97 (94.2%), remaining 6 patients (5.8%) complained of daily rectal bleeding. Anemia was not present in 40 (38.8%), while mild and moderate anemia was present in 58 (56.3%) and 5 (4.9%) respectively. Mean hemoglobin concentration (SD) was 11.77 (1.89) gm/dl ranging from 7 to 15 gm/dl.

Table I : Baseline Characteristics of study population (n : 103).

Parameter	
Age in years, mean (SD)	28.19 (10.01)
Gender female, n(%)	34 (33%)
Smoking, n(%)	31 (30%)
Diabetes Mellitus, n (%)	15 (14.6%)
Other Symptoms, n (%)	
Constipation	47 (45.3%)
Pain Abdomen	33 (32%)
Weight loss	25 (24.3%)
Duration of symptoms < 6 months	44 (42.7%)
Anemia	
No	40 (38.8%)
Mild	58 (56.3%)
Moderate	5 (4.9%)

Colonoscopy was attempted in 103 patients, with cecal intubation rate of 98.1% (101/103). Full length colonoscopy was not feasible in two patients due to luminal narrowing by obstructive growth. The diagnostic yield was 91.26% (94/103). Mean colon withdrawal time was 5.48 (2.06) minutes, ranging from 4 to 10 minutes. Anorectal region was most common site for the lesion (50/94, 53.19%). Six patients (6.38%) had proximal colonic lesions and pan colonic lesions each.

Hemorrhoids in isolation (29/94, 30.85%) or in combination of other lesions (16/94, 17.02%) was most common colonoscopic finding. Colorectal polyps were seen in the 16 (17.02%; 6 hamartomatous, 6 adenomas, 4 inflammatory and hyperplastic polyps) patients and colorectal growth (Adenocarcinoma on histology) was found in the 12 (12.77%). Of colorectal polyps, 10 patients had polyp were in rectum and sigmoid while 2 patients had proximal colonic polyp. Four patients had polyps at multiple colonic segments. Of colorectal adenocarcinomas, eight were in rectum while sigmoid colon and cecum had three

and one respectively. Ulcerative colitis and colonic ulcers were present in 10 (10.64%) and 8 (8.51%) patients respectively. Of these 8 patients with colonic ulcers, 3 were colonic tuberculosis. Nonspecific colitis, non-specific proctitis, solitary rectal ulcer, rectal varix, angioectasias and worm infestation seen in 8(8.51%), 3(3.19%), 3(3.19%), 1(1.06%), 2(2.13%) and 2(2.13%) patients respectively.

Table II : Characteristics of colonoscopy (n=103).

Parameter	
Cecum intubation rate, n (%)	101 (98.1%)
Colonoscopy withdrawal time in minutes, mean (SD)	5.48 (2.06), Range 4 – 10
Diagnostic yield, n (%)	94 (91.26%)
Colonoscopy Findings (n=94)	
Hemorrhoids	45 (47.87%)
Polyp	16 (17.02%)
Adenoma	6 (6.38%)
Non Adenoma	10 (10.64%)
Adenocarcinoma	12 (12.77%)
Ulcerative colitis	10 (10.64%)
Tuberculosis	3 (3.19%)
Nonspecific colitis/proctitis	11 (11.7%)
SRUS	3 (3.19%)
Vascular (Rectal varix/angioectasias)	3 (3.19%)
Worm infestation	2 (2.13%)

DISCUSSION

Colonoscopy is a gold standard investigation for evaluation of large intestine, particularly in patients presenting with per rectal bleeding and suspected colorectal adenocarcinoma[5,10]. In current study, we have shown clinical utility of colonoscopy in young patients presenting as per rectal bleeding. In majority of young patients per rectal bleeding is chronic (> 6 months) and intermittent. Mild or moderate anemia at presentation was seen in 61.2%. The diagnostic yield of colonoscopy for rectal bleeding in young adult is 91.26% with 98.1% cecal intubation rate. Hemorrhoids either in isolation or in combination with other lesion is most common cause of rectal bleeding in young patients. Colorectal polyps and adenocarcinoma was second most common cause. Ulcerative colitis and colonic ulcers including tuberculosis were other common causes of rectal bleeding.

In the clinical practice, physicians are often uncertain about the extent of investigation in the young patients presenting with frank rectal bleeding. The clinical decision about performing colonoscopy in young adult depends on presence of alarming features such as anemia, weight loss, color and amount of blood passed. Most of the available literature regarding the evaluation of rectal bleeding has not addressed young population and directly either toward elderly or acute lower GI bleeding[1,3-5,8,11].

In the retrospective study of 280 young patients, 59 (21%) had significant finding on colonoscopy which included polyps, colitis, diverticulosis and angiodysplasias and adenocarcinoma[12-14]. This study highlighted need to consider use of colonoscopy in diagnostic algorithm of per rectal bleeding in young patients. In our study, due to stringent inclusion criteria diagnostic yield is above 90% with 98% cecal intubation rate.

Hemorrhoids are most common cause of per rectal bleeding in patients aged less than 40 years, flexible sigmoidoscopy may be sufficient in these patients. Several recent studies shown usefulness of colonoscopy in patients with age < 50 years[15-17]. However, there are few studies which addressed usefulness of colonoscopy in patients with per rectal bleeding in patients with age < 40 years[18]. In the study from Singapore, there was 6.5% overall prevalence of colonic adenoma or carcinoma[18]. With increasing rates of sporadic colorectal carcinomas in young patients need for colonoscopy in these patients is justified. In study from India, 155 adenomas (6.73%) were detected in 2303 colonoscopy or sigmoidoscopy in all population.In the same study, in patients with age less than 40 years, there were only 6 adenoma[19]. In current study, 18 (19.15%) young adults had either colorectal adenomas (6 patients) or carcinoma (12 patients). Not only, colorectal adenoma and carcinoma other colonic diseases such as ulcerative colitis and colonic tuberculosis can be diagnosed and monitored using colonoscopy. In current study, we found that ulcerative colitis in 10.64% young patients and three patients had colonic tuberculosis.

There are certain limitation in our study apart from being single center study. We could not analyzed predictive factors of colorectal adenoma or carcinoma because this study was planned to analyze utility of colonoscopy in young adults. Also, we have not studied types of adenomas, grade of dysplasia and differentiation of adenocarcinoma.

CONCLUSION

Colonoscopy in young patients with age < 40 years should be considered in diagnostic algorithm for per rectal bleeding. Though benign anorectal disease is most common cause, colorectal neoplasm and colonic ulcers including ulcerative colitis and tuberculosis are important causes of per rectal bleeding in young patients.

DISCLOSURE

All the authors declared no competing interest.

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