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Colonoscopic Findings in Patients with Lower Gastrointestinal Bleeding-A prospective Clinical Study

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Original Article

ABSTRACT

***Background**: Lower gastrointestinal bleeding which means bleeding from site distal to ligament of Treitz, the colonoscopy both diagnostic and therapeutic purpose in patient with lower GIT bleeding.*

***Objective**: to assess the causes of lower GIT bleeding among group of Iraqi patients.*

***Patients and methods**: A prospective study done on (141) patients who presented to KCGH with rectal bleeding during the period from first of June to 31st of December 2008, all the patients were examined by video-colonoscopy. Biopsies taken from suspicious lesion. The final diagnosis based on colonoscopy and histopathological finding.*

***Results**: Among the 141 patients age range (1-82) years, mean (40.01) years, the most common Colonoscopic finding; colorectal polyp (19.8%), hemorrhoid (17.7%), Colorectal cancer (9.9%), Ulcerative colitis (9.2%), Typhoid Ileo-caecal ulcer (9.2%), infrequent findings are ; diverticular disease (1.4%), crohns disease (1.4%). Colonoscopic intervention was done in 14 patients (9.9%); either by polypectomy or argon plasma coagulation.*

***Conclusion**: The Colonoscopy has both diagnostic and therapeutic benefits in lower GIT bleeding yield in lower GIT bleeding, there is a high regional variations in the causes of lower GIT bleeding all over the world.*

Keywords: Colonoscopy, lower gastrointestinal bleeding, epidemiology, causes, findings

1.INTRODUCTION

Lower gastro-intestinal tract bleeding is a bleeding distal to duodeno-jujenal junction (ligament of Trietz) and revealed as rectal bleeding (1). Lower gastro-intestinal bleeding occurs in about (20%) of population annually (2). Mortality rate for lower GIT bleeding is about 11% and up to 21% from the acute massive bleeding group (1, 3). While in other study bleeding occur in about 14% to 19% of adults (1) Most of bleeding are due to benign lesion such as hemorrhoids but a serious disease like colon cancer, adenomatous polyps may be the etiology (4). Haematochezia; is passage of maroon or bright red blood or clots per-rectum, but he upper GIT bleeding also may be presented as bleeding per rectum and / or malena however, about 11% of upper GIT bleeding may present as haematochezia (5). In general , the causes of lower GIT bleeding, classified into different groups: Anatomical like diverticulosis; vascular like angiodysplasia, ischemic colitis; inflammatory like inflammatory bowel diseases, infection, idiopathic, radiation induced; and neoplastic (6). When the bleeding suspected to be coming from lower GIT sources it is, an indication for examination of lower GIT in all cases by sigmoidoscopy if not fully informative the colonoscopy is indicated which may diagnostic as well as therapeutic (1 The Colonoscopy is the most appropriate method of visualizing of the lower GIT (7). In the west the most common causes of lower GIT bleeding are; diverticulosis and polyp, followed by neoplasia and inflammatory bowel diseases (5,8). The frequencies are different in other countries like India, the most common cause is the ulcerative colitis followed by neoplasm and infectious colitis (9). In the past Sigmoidoscopy with double contrast barium enema were used for screening the patients with lower GIT symptoms, nowadays the colonoscopy is the best method for screening those patients because of the relative safety and the low complication rate associated with Colonoscopy (9) Because Colonoscopy has both diagnostic and therapeutic benefits so that many suggest restricting Colonoscopy to those patients who will most likely get more benefits from it (10) All colons should be visualize if possible in all patients in order not to miss any significant lesion (10) The use of colonoscopy as a diagnostic tool increased dramatically in the last years especially for the younger patient while uses of sigmoidoscopy had reduced (11).

2. PATIENTS and METHODS

The total number of the patients was 141 who presented with lower gastrointestinal bleeding to Kurdistan Center of Gastroenterology and Herpetology (KCHG), in Sulaimaneya Teaching hospital, during the period from First of June 2008 to 31st of December 2008 were examined by Colonoscopy. The patients were prepared for examination with fluid diet for 2 days before procedure and the day before with Polyethylene glycol (6sachet) one every 4 hour. Midazolam 5-10mg used as a sedative and Pethidine 50-100mg used as analgesic with cardiovascular and respiratory monitoring during procedure. All the pediatric age group patients were examined under general anesthesia. The Colonoscopy instrument used was OLYMBUS, Lucera Video-station-system (CF-H260AZL) Colonoscopy. The Colonoscopic examination done by well-trained Gastroenterologist. When abnormalities detected biopsies taken for histopathological examination. The final diagnosis made after histopathological confirmation. Data analysis done by using a SPSS (Statistical Package for the Social Sciences, SPSS, v. 18) database program.

3. RESULTS

A total 141 patients, the age ranges between one to 82 years mean age (40.01 years), males were 95 (67.4%) and females were 46 patients (32.6%) with a male to female ratio of almost 2: 1.

Patients below 50 years represented (67.4%) and 46 patient above 50 years (32.6%), the most common age groups between 31-40 years (21%) followed by 21-30 years (19%), (**Figures 1 & 2**).

The most common associated symptoms with rectal bleeding are abdominal pain (27.7%) followed by constipation (22.7%), (**Table 1**).

The most common Colonoscopic findings as following; colorectal polyp (20.6%), normal finding (22.0%), Typhoid fever (7.1%) patients, ulcerative colitis (7.8%) of patients (**Table 2)**.

Regarding histopathological findings, (**Table 3**) summarizes these findings.

The compares of Colonoscopic vs. histopathological results, is shown in (**Table 4**).

Mjority of patients with anemia, bloody diarrhea and weight loss (22.2%, 54.6%, 23.7%) consequently reported among patients with ulcerative colitis and the association between these findings statistically significant (p value <0.001), also association between colorectal cancer and weight loss, change in bowel habit and constipation (28.9%, 32.4%, 33.3%) consequently is highly significant (p value <0.001) , (**Table 5**).

High percentage of patients with family history of colorectal cancer (40%) reported among those patients with colorectal cancer and the association between these findings is highly significant (P

value = 0.00). The association between hemorrhoid with family history of irritable bowel syndrome (36.4%) was not significant (P value = 0.321), (**Table 6**)

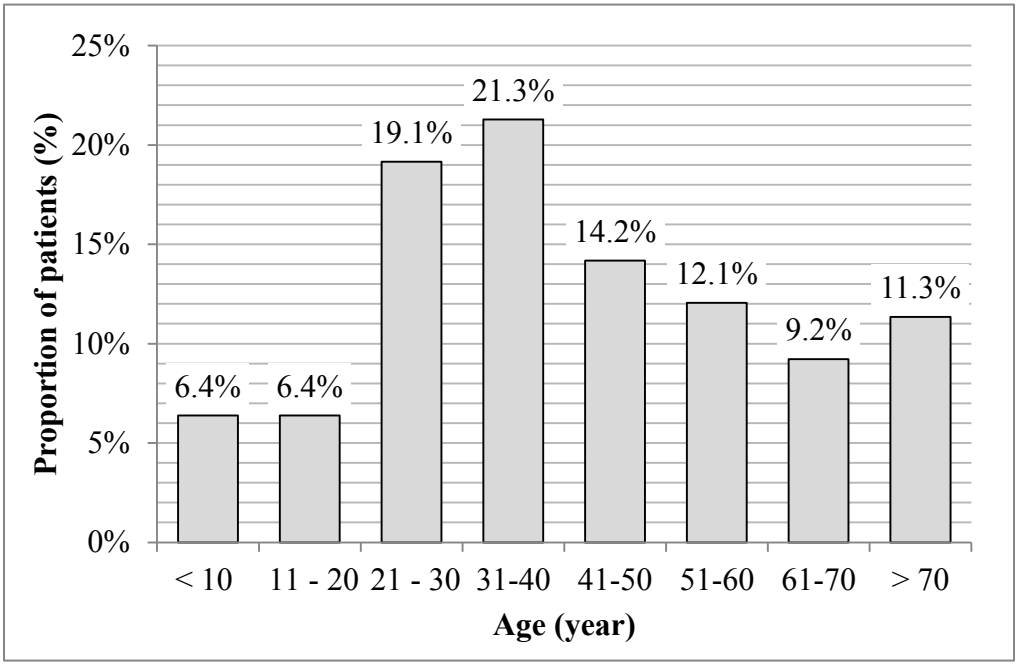

Figure 1. Age distribution of the studied group

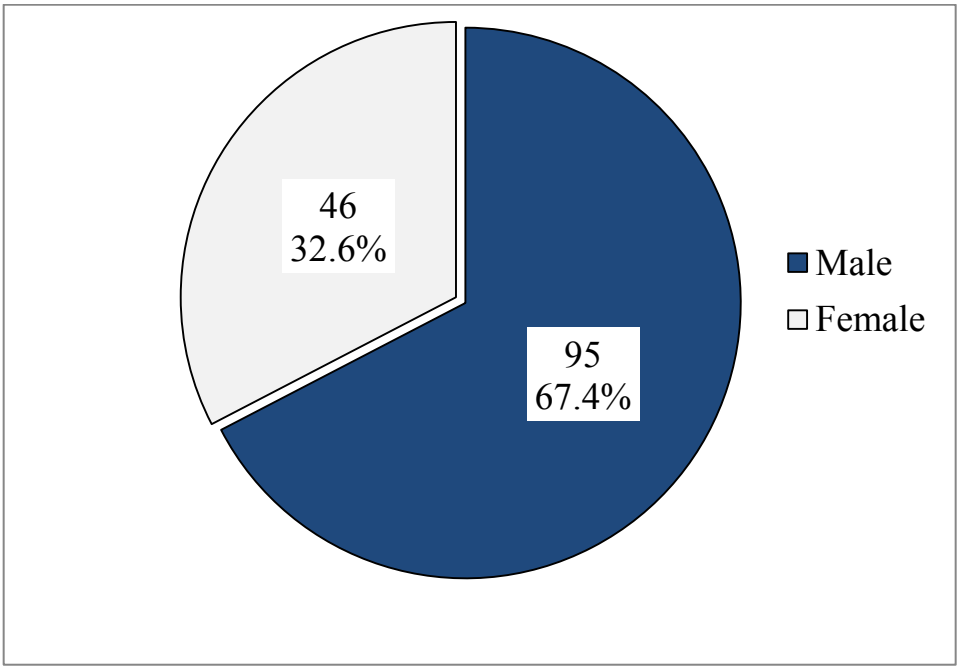

Figure 2. Gender distribution of the studied group

Table 1. Associated symptom

Associated symptoms	No.	%
Abdominal pain	39	27.7
Constipation	32	22.7
Anemia	20	14.2
Weight loss	17	12.1
Change in bowel habit	16	11.3
Fever	7	5.0
Others	10	7.1
Total	141	100.0

Table 2. Colonoscopic findings

Colonoscopic findings	No.	%
Normal	31	22.0
Hemorrhoid	25	17.8
Colonic polyps	16	11.4
Rectal polyp	13	9.2
Ulcerative colitis	11	7.8
Typhoid ulcer	10	7.1
Rectal cancer	10	7.1
Solitary rectal ulcer	5	3.5
Anal fissure	4	2.8
Colonic cancer	4	2.8
Infectious colitis	4	2.8
Crohns disease	3	2.2
Ileo-cecal ulcer	2	1.4
Diverticulosis	2	1.4
Vascular ectasia	1	0.7
Total	141	100.0

Table 3. Histopathological Findings

Histopathological findings	No.	%
Colonic polyps	16	11.3
Normal	13	9.2
Ulcerative colitis	13	9.2
Typhoid fever	13	9.2
Rectal polyp	12	8.5
Rectal cancer	11	7.8
SRUS	4	2.8
Colonic cancer	3	2.1
Infectious colitis	4	2.8
Crohn's disease	2	1.4

Table 4. Comparison of Colonoscopic and histopathological findings

Findings	Colonoscopic findings		Histopathological findings	
	No.	%	No.	%
Normal	31	22.0	13	9.2
Colonic polyps	16	11.3	16	11.3
Ulcerative colitis	11	7.8	13	9.2
Typhoid fever	10	7.1	13	9.2
Rectal polyp	13	9.2	12	8.5
Rectal cancer	10	7.1	11	7.8
SRUS	5	3.5	4	2.8
Colonic cancer	4	2.8	3	2.1
Infectious colitis	4	2.8	4	2.8
Crohns disease	3	2.1	2	1.4

Table 5. Cross-tabulation for the associated symptoms in relation to the Colonoscopic findings

	Anemia	Bloody diarrhea	Melena	Weight loss	Change in bowel habit	Constipation
Colonoscopic Findings	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Colonic polyp	1 (2.2)	0 (0.0)	0 (0.0)	2 (5.3)	5 (14.7)	7 (9.7)
Normal	5 (11.1)	1 (9.1)	3 (33.3)	3 (7.9)	0 (0.0)	16 (22.2)
Colorectal cancer	7 (15.6)	0 (0.0)	0 (0.0)	11 (28.9)	11 (32.4)	9 (12.5)
Pile	6 (13.3)	0 (0.0)	1 (11.1)	2 (5.3)	2 (5.9)	24 (33.3)
Typhoid	9 (20.0)	1 (9.1)	1 (11.1)	5 (13.2)	1 (2.9)	0 (0.0)
Rectal polyp	2 (4.4)	0 (0.0)	1 (11.1)	2 (5.3)	2 (5.9)	6 (8.3)
SRUS	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	3 (8.8)	2 (2.8)
Ulcerative colitis	10 (22.2)	6 (54.6)	0 (0.0)	9 (23.7)	5 (14.7)	0 (0.0)
Fissure	1 (2.2)	0 (0.0)	0 (0.0)	1 (2.6)	0 (0.0)	5 (6.9)
Ileal polyp	0 (0.0)	0 (0.0)	1 (11.1)	0 (0.0)	1 (2.9)	0 (0.0)
Diverticular disease	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.4)
Crohn's disease	2 (4.4)	1 (9.1)	0 (0.0)	2 (5.3)	2 (5.9)	1 (1.4)
Ileal ulcer	1 (2.2)	1 (9.1)	1 (11.1)	1 (2.6)	1 (2.9)	0 (0.0)
Vascular ectasia	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Infectious colitis	1 (2.2)	1 (9.1)	1 (11.1)	0 (0.0)	0 (0.0)	0 (0.0)
P. value	< 0.001	< 0.001	0.041	< 0.001	< 0.001	< 0.001

Table 6. Relationship of family history of colorectal cancer and IBS with Colonoscopic findings

	Family history of Colorectal carcinoma		**Family history of IBS**	
Colonoscopic Findings*	**No.**	**%**	**No.**	**%**
Colonic polyp	2	13.3	4	18.2
Normal	0	0.0	2	9.1
Colorectal cancer	6	40.0	1	4.5
Pile	2	13.3	8	36.4
Rectal polyp	0	0.0	3	13.6
Ulcerative colitis	3	20.0	1	4.5
Fissure	0	0.0	2	9.1
Diverticular disease	1	6.7	0	0.0
Crohns disease	1	6.7	1	4.5
P. value	<0.001		0.321	

*No family history was reported with other findings, Ileal ulcer, Vascular ectasia, Infectious colitis, Ileal polyp, SRUS or Typhoid

DISCUSSION

Lower GIT bleeding though less common than upper GIT bleeding but it is frequently encountered problem in general practice. (6) Although rectal bleeding is mostly due to benign local anorectal conditions, it may also be the only sign of colorectal tumors. (10) Most of the studies are done in the western countries and they found diverticulosis being the most common in USA (33%) followed by neoplasia (19%). (7) Few studies done in our region they find a difference etiological pattern as compared to western population, one study conducted in Kuwait shows the most frequent findings; inflammatory bowel diseases (18.6%), hemorrhoid (9.5%), neoplasia (7.9%). (7) Study done in Singapore found different incidence in their country neoplasia (25.1%) followed by diverticular disease (24%). (5) In our study the most frequent findings was colorectal polyp (19.8%), hemorrhoid (17.7%) ulcerative colitis (9.2%) and typhoid fever in (9.2%) . The prevalence of rectal bleeding is high in younger patients (20-40 years). (11) Certainly, the concern of missing a potentially early and curable colorectal cancer substantiated the argument favoring colonoscopy. (10) One large study done retrospectively in USA reported the Colonoscopic finding for lower gastrointestinal tract bleeding in patients younger than 40 years, they found a significant lesion including colorectal cancer, polyp, colitis and angiodysplasia in (21%) of patients and they advised that full colonoscopy, should be seriously considered even in younger person. (10) Ileal incubation were possible in (90.8%) of patients which indicate a good performance of operator, the US Multi-Society Task Force on Colorectal Cancer, recommending for quality improvement in the performance of colonoscopy, target goals of ileal incubation rates of (90%) or greater. (15)

Normal findings

In (22%) of the cases in our study the exact cause of lower GIT, bleeding remained unidentified even after complete colonoscopy and ileal incubation.

Clinical evidence of obscure lower GIT bleeding (define as gastrointestinal bleeding with no identified source at upper and lower Endoscopy). (4) Obscure lower GIT bleeding range from (5-20%) in different studies. (10) A lesion higher up in the small intestine or stomach may have caused it and other specialized technique like CT scan with oral and intravenous contrast, Capsule Endoscopy and Angiography may be required for definitive diagnosis. (4) In this study (7.1%) patients were examined by upper Endoscopy 4 of them had bleeding duodenal ulceration one of them bleeding esophageal varices (those patients with bleeding duodenal ulcer and bleeding esophageal varices had normal colonoscopy which means that the bleeding was coming from upper

GIT sources). The normal finding a well-documented in younger patients with rectal bleeding, and reported in a USA study to be about (21%) (10).

Hemorrhoids and anal fissure

In our study, Colonoscopic examination shows (17.7%) patients with hemorrhoid. A study done in UK reveals incidence of (28.2%) in their population. (14) We find hemorrhoid coincidentally with more other significant lesions in (5.6%) of patients (1 colonic cancer, 4 rectal polyps, 2 SRUS), these arguing that a discovery of hemorrhoids on a limited examination of anorectum should not discourage practitioner from doing more detailed examination such as colonoscopy(10). Anal fissure found in (2.8%) of our patients one of them with Crohns disease.

Polyps

The polyps are common, bleed infrequently and seen to be identified by chance during the investigation of lower GIT bleeding. (10) The relation of small polyp to lower GIT bleeding is unclear as some of those patients had hemorrhoids. (10) Colorectal polyp were found in (19.8%) patients and mostly occurs in distal colon, 2 multiple polyposis coli are found which is an indication for regular screening and follow up. (10) Moroccan study reveals that the occurrence of polyps about (16.4%) in there population. (14) In UK study, they find incidence of (25.2%) (16)

Ulcerative Colitis

Was found in (9.2%) patients in our study as compared to another study conducted in Kuwait the incidence was (10.2%). (9) In other UK study the incidence was (10.5%). (14) which means that the incidence of ulcerative colitis as a cause of lower GIT bleeding is remarkable all over the world.

Colorectal cancer

In our study, there was a (9.9%) patient with colorectal cancer 3 of them with colonic cancer and 11 of them have rectal cancer. Several studies have been evaluated the prevalence of colorectal cancer among patients with rectal bleeding an overall incidence of (4% - 19%) is reported in some series that include patients older than 50 years. (10, 17) Pakistani study reveals incidence of (10%) in their population (5) as compared to UK study were it was (8%). (14)

Typhoid fever

In our study, we found (9.2%) patients with typhoid ileocaecal ulcer. The most common complication of Typhoid fever are gastrointestinal bleeding and perforation. (18) The bleeding usually occurs from the ulcers in the terminal ileum or right side colon, and the most frequent Colonoscopic findings are multiple variable-sized punched-out ulcerations. (19 The widespread use

of fluoroquinolones in treatment of Typhoid fever resulted in emergence of new strains of Salmonella typhi, with reduced susceptibility to Fluoroquinolones drugs, also
may be due to; delay in initiating appropriate antibiotic therapy, inappropriate dosage, inadequate treatment duration and poor drugs quality. (20) The Typhoid fever mostly occurs in summer season. (18) Were our study done at that season?

Solitary rectal ulcer syndrome

Constipation and rectal bleeding were the most common symptom of the syndrome. (21) Colonoscopic findings are variable and may be in form of ulcer, polyp, or only erythematous mucosa. (21) So that SRUS can be greatly mistaken for other serious disorder such as carcinoma and inflammatory bowel disease. (21) We found (2.8%) of patients with SRUS were as a study in Kuwait which shows incidence of (5.4%) in their population. (9)

Infectious colitis

Most of these infectious colitis were due to parasitic infection like amaebiasis; bacterial like salmonella, shighelle, E.coli; viral like Cytomegalovirus and antibiotic associated Pseudo membranous colitis. (22) There was (2.8%) patients who had infectious colitis as compare study done in Spain were they find incidence of (1. 1%). (5) In Pakistan the incidence was (8.5%). (5)

Crohns disease

Abdominal pain, diarrhea and weight loss were the most common symptoms, rectal bleeding usually not a common feature of the disease. (23) Crohns disease diagnosed in (1.4%) of our patients as compare to UK (1%), Iranian study they found incidence of (2.5%). (24)

Diverticular disease

Diagnosed in (1.4%) of our patients as compare to European studies it account for about (33%) of their population. (7) Different explanations made for this high incidence in the west among which are; the western lifestyle, variation in dietary intake including low fiber, refined sugar and chocolate as well as environmental factors. (9) In Kuwait, they found incidence of (4.1%). (9)

CONCLUSIONS

Colonoscopy has a high diagnostic and therapeutic yield and considered as the investigation of choice in patients presenting with bleeding per rectum even in younger age groups and it is a safe procedure in experienced hands. Common colorectal pathologies prevalent in our population include; colorectal polyps, colorectal carcinoma and ulcerative colitis, while diverticulosis, Crohn's disease are infrequent findings. There is high variation in incidence of etiology of lower GIT bleeding worldwide. There is significant number of typhoid Ileo-caecal ulcer, which presented as lower GIT bleeding.

Ethical Clearance : Approved by authors, all patients signed informed consents before been enrolled in the study, the data were collected according to the World Medical Association (WMA) Declaration of Helsinki, Assembly 2013.

Conflict of interest: None

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