Etiology, Diagnosis and Treatment Options in Chronic Hematochezia

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ABSTRACT

Background: Chronic hematochezia is recurrent, intermittent, small amount of blood loss per rectum, either bright red or mixed with the stool for more than 3 months duration. It is important symptom of lower gastrointestinal diseases, early endoscopic diagnosis and treatment is mandatory for those patients, even if there is no alarming sign like anemia or weight loss.

Objective: To determine the causes, treatment and the indication of colonoscope or sigmoidoscope for patient complaining of chronic hematochezia in all age group patient and in patient with (low and average risk group) of colorectal cancer (CRC).

Methods: A cross-sectional descriptive study for 400 patients (260 males, 140 females) with chronic hematochezia, their ages was from 20-80years were enrolled in this study from January 2011 to January 2014, patient with chronic hematochezia for more than 3 months duration referred to the GIT center of Al- Imamain Al-Kadhimain Medical City. All patients investigated and examined and divided to two group above 45 years (average risk), and below 45 years (low risk) for CRC, and detail history was taken for any family history of CRC, and for alarming signs than, patient examined either by sigmoidoscope or colonoscope according to the type of risk.

Results: Diagnosis confirmed in 93% (370) patients, while no cause was detected in (7.5%) 30 patients. Non-serious lesion was seen in 218 patients (54.5%), and the hemorrhoid was the commonest non-serious lesion and was seen in (192) patients. Other non- serious lesion was angiodysplasia, solitary rectal ulcer (SRU) and diverticulosis was seen in 26 patients (6.5%). While serious lesion was detected in 152 patients represent (38%) as follow (63) patients (15.7%) with colonic malignancy and FAP, polyp seen in (40) patients (10%) and (49) patients (12.3%) has IBD. Sixteen patients (4%) the lesion was in the proximal colon.

Conclusion: Any patient with chronic hematochezia at all age group advised for early medical consultation. Hemorrhoid is the commonest cause of chronic hematochezia in all age group, but because of increased risk of CRC in young patient, colonoscopy is strongly indicated for patient less than 45 years old patient with alarming signs and all patients above 45 years old, irrespective to the alarming signs (anemia, weight loss and anorexia) which may appear later.

Keywords: Chronic hematochezia, Colonoscopy, Polyp, Tumor, Hemorrhoids.

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Lower gastrointestinal bleeding occurs at a rate of 20 per 100,000 population[(1)], which is about one fifth as frequently as upper gastrointestinal bleeding, and the site of bleeding is distal to ligament of Treitz.

Rectal bleeding either is acute or chronic. Acute in which bleeding occurs within history of 7 days, and the type of bleeding is mild, moderate or massive.

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Moderate and massive lower gastrointestinal bleeding are serious symptom in which about 250-1000 ml of blood is lost either mixed with stool give the maroon color (hematochezia) e.g. in patient with peptic ulcer, Meckel's diverticulum in the terminal ileum or angiodysplasia in ascending colon. Or fresh blood seen in patient with diverticulosis which is the commonest cause of moderate or massive rectal bleeding in middle age patient, while the angiodysplasia and ischemic colitis seen

more in elderly patient, hemorrhoid represents 10% of massive bleeding, to less extent the colorectal cancer and inflammatory bowel are also frequent causes. The moderate or severe acute rectal bleeding associated with high mortality and morbidity and the patient need intensive care in hospital[2].

The prevalence of rectal bleeding was significantly higher in younger person and the term of chronic hematochezia. in which the duration more than 3 months recurrent, intermittent, small amount of blood can be variously described as bloody diarrhea, blood and clots per rectum, blood mixed in the stool (chronic hematochezia) or fresh bright red bleeding per-rectum (BRBPR). Chronic hematochezia result from bleeding any where in the gastrointestinal tract [3,4].

Although unawareness of any standardized definition the chronic hematochezia is characterized by small amount of blood seen more frequently during defecation and it is usually about 10-20 ml and it is indicate the lesion either in descending colon, sigmoid, rectum (rectorrhagia), or in the anal region e.g. hemorrhoid. The prevalence of chronic hematochezia is 10-20% and it is most frequent indication for colonoscopy reach to 20%, and only 15% of those patients seek medical advice[5,6].

Benign etiologies are common, and there are few recommendations for the appropriate evaluation of those patients, recommendations for evaluation based on age and other risk factors for more serious etiologies of chronic hematochezia[6,7].

Common causes and presentations of chronic hematochezia include: Non serious lesion such hemorrhoids, anal fissures, solitary rectal ulcer, diverticulosis and angiodysplasia. And serious lesion are polyps, inflammatory bowel diseases (IBD) and cancer, the majority of patients with symptomatic distal colorectal cancer (CRC) have chronic hematochezia[8]. Ano-rectal examination is essential in any patient presenting with hematochezia, inspection should determine the presence of anal fissure, strangulated hemorrhoids or anal canal cancer. During straining, looking for prolapsing hemorrhoids or rectal prolapse. Digital examination is used to feel a rectal polyp or cancer in the rectum.

Even careful clinical examination and assessment can be unreliable both for determining the site of bleeding and for ruling out significant pathology[8,9] since the serious diseases may be coincidently seen with benign disorder such hemorrhoid.

Chronic hematochezia considered important symptoms when associated with alarming signs such anemia, anorexia and weight loss or patient above 45 years or patient has family history of colorectal cancer[9].

Laboratory testing contributes little and is not routinely recommended. Little use of carcino-embryonic antigen (CEA) in detecting early (CRC) and used widely for surveillance of (CRC) postoperatively and its sensitivity less than 80%, and fecal occult blood test (FOBT) cant not localized the site and type of the lesion[9].

Colonoscopy is indicated in any patient above 45 years (average risk) as part of (CRC) screening for diagnosis the cause and site of bleeding while sigmoidoscope is generally recommended in patient below 45 years with (low risk) when additional evaluation beyond the history and physical examination is warranted, but new study advice for colonoscopy in patient with chronic hematochezia below 40 years in patient with high risk such patient with family history of (CRC), familial adenomatous polyposis coli (FAP) and (IBD) for more than 8-12 years[10,11].

Colonoscopy is invaluable in diagnosis and treatment of many diseases which were the causes of the chronic hematochezia such as polyp, hemorrhoid and also colorectal cancer in the stage 1 and can be treated endoscopically by mucosal and submucosal resection[7-9].

The lesions of chronic hematochezia can be treated by interventional endoscope

patient with polyp or angiodysplasia, bleeding from diverticulosis can be treated by polypectomy, cauterization of the bleeder, respectively[8.9].

Internal hemorrhoid either treated conservatively or by endoscopic banding especially grade 2, 3 and by surgery when it is grade 4 or complicated, while patient with neoplasm or (FAP) the curative partial or total colectomy is treatment of choice[9].

Methods

Between Jan 2011 and Jan 2014, there were 400 consecutive patients with chronic hematochezia who were referred for colonoscopy to the Al-Imamain Al-Kadhimain medical city GIT center. Patients excluded from this study are; patients had colonic tumor or inflammatory bowel diseases previously diagnosed by colonoscopy, any patient with acute bleeding either moderate or severe (massive) admitted to hospital, patient with chronic rectal bleeding less than 3 months duration, age under 13 years, or and patient had colonoscopy in the last two years with settled diagnosis.

While the other 400 patients present with chronic hematochezia selected for this study are: the patient with chronic hematochezia more than 3 months with low risk age less than 45. Patient with average risk family history of CRC or IBD, patient above 45-years. Patient with alarming signs such as weight loss, anorexia, abdominal mass and anemia and patient with positive (FOBT) or melena.

All patients not diagnosed before and lower endoscopy had been done for first time. All patients prepared to colonic cleansing for 3 days (e.g. polyethylene glycol or magnesium citrate).

Conscious sedation with pethidine 50-100 mg iv and 5-10 mg of midazolam iv sometime buscopan 4mg iv and xylocaine jell 2% used for lubrication. Japanese Olympus video system Excera 1 CLV-160 and Lucera – CLV-280. Olympus CF 160 and CFQ 180 colonoscopy, and Olympus CF 160 sigmoidoscopy. Boston scientific accessories (USA) used e.g. forceps biopsy, snare for polypectomy, needle injector, band ligature and hemclips.

Nothing by mouth for 6 hours before procedure. Biopsy had been taken for any polyp, colitis, ulcer and mass for histopathology. Discharge patient on the same day.

Patients with serious lesion were divided for two groups above 45 years old (average risk group) and below 45 years (low risk) according to American and European association society for gastroenterology[1,5,8].

Chi square test used for calculation of P value of malignancy in two groups.

Results

Male to female ratio was 1.8/1. Males was 260 (65%) range of age was (30-90 years) and (mean age 52 years). Females was 140 (35%), range of age was (20-80 years) and the (mean age 50.5 years).

Non-serious lesion was seen in 218 patients (54.5%) while serious lesion was seen in 152 (38%) and 30 patients and there was no lesion detected in (7.5%).

Total number of patient above 45 years was 230 and serious lesion was seen in 73 patients represent 31.7%, while 170 patients below 45 years, and the serious lesion was seen in in 79 patients represent (46.5%), (Figure 2).

Colonoscopy had been done for 380 (95%) patients this is because, 230 patients the age above 45 years as because of average risk for colorectal cancer, and in other 150 patients was below 45 years and colonoscopy had been done either patient with (IBD) to determine the extent of lesion, or patient without lesion was seen in left colon so looking for in whole colon, or seek for synchronized tumor in patient with left colonic tumor and in patient had polyp in left colon and to find if other polyp in the rest of colon, (Table 1).

Anemia was seen in 90 patients 22.5% (60 females and 30 males) and in most of the patient the anemia was mild, hemoglobin above 9 gm/dl, and was seen more in patient with colorectal cancer and (IBD).

Patient complaining from anorexia was 85 patients 21.25% (55 females and 30 males), weight loos seen in 65 patients 16.25% (55 females 10 males) more in patient of (CRC) and (IBD). Abdominal pain seen in 35 patients (8.75%) was colicky (25 females and 10 males) and abdominal mass was palpable in 9 patients in left iliac fossa and due to tumor, (Table 2).

The cause of bleeding was detected in 354 patients (88.75%) and it was in left colon. In 16 (4%) patients the cause of bleeding was proximal to the left colon, as follow; four patients had tumor, 8 patients had polyp size more than 8 mm, and two patients had angiodysplasia and two patients with Crohn's disease.

Hemorrhoid seen in 192 patients who represented 48% (140 males and 52 females) of all the patients with chronic hematochezia.

Because internal hemorrhoid is very common disease so may present with other serious pathology for example in 15 patients they found to have both polyp and internal hemorrhoid but the cause of the bleeding in 10 patients was hemorrhoid this approved by small and non-dysplastic polyp, and the bleeding persist after removal of the polyp.

There were 9 patients present with diverticulosis in addition to hemorrhoid. But it was found only 3 patients with bleeding the source of bleeding was diverticulosis, (Table 3).

Tumor seen in 63 patients represent 15.7%, (57) patients had (CRC) and 6 patients with FAP those patients considered to have colonic cancer, 15 patients the age below 45 years while the other 42 patients the age above 45 years, (Figures 1, 2, 3 and 4).

Chi squared test was run to determine if there a significant difference between the two age categories (Chi squared = 16.934), P value is less than 0.0001 which is considered to be extremely statistically significant, (Table 3).

Polyp seen in (40) patients and represent 10 %, and 90% of those patients they have adenomatous polyp in the left colon, ulcerated larger than 8mm in diameter with dysplasia by histopathological study and bleeding stopped after polypectomy, (Figure 5).

Inflammatory bowel diseases was seen in (49) patients represent (12.25%) 29 females and 20 males and only 7 patients their age above 45 years, (Figure 1, 2 and 6).

No cause of rectal bleeding was seen in 30 patients (7.5%).All those patient advised to do capsule endoscopy, push enteroscopy and abdominal computerized tomography (CT), only 3 patients agree to do push enteroscopy. and 10 patients agree to the abdominal CT scan with oral and I.V contrast but no lesion had been found.

Angiodysplasia, FAP, Nonspecific colitis and anal fissure each represent 1%, 1.5%, 1.5% and 1.5% respectively. Solitary rectal ulcer was seen in one patient, (Table 3).

Table 1: Demographic data of patients with chronic hematochezia.

Patient (n)	400
Males /females	260/ 140 (1.8/1)
Mean age (year)	50.5
Range of age	20-80
<45 years old	230
>45 years old	170
Colonoscopy /sigmoidoscopy	380 /20
Site of lesion distal / proximal	354/16

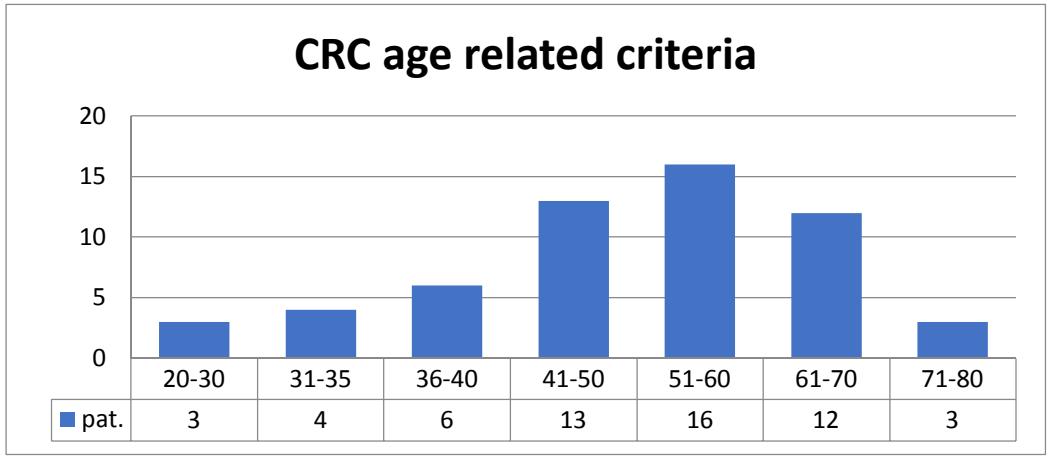

Figure 1: CRC age related criteria in the patients with chronic hematochezia. (FAP not included)

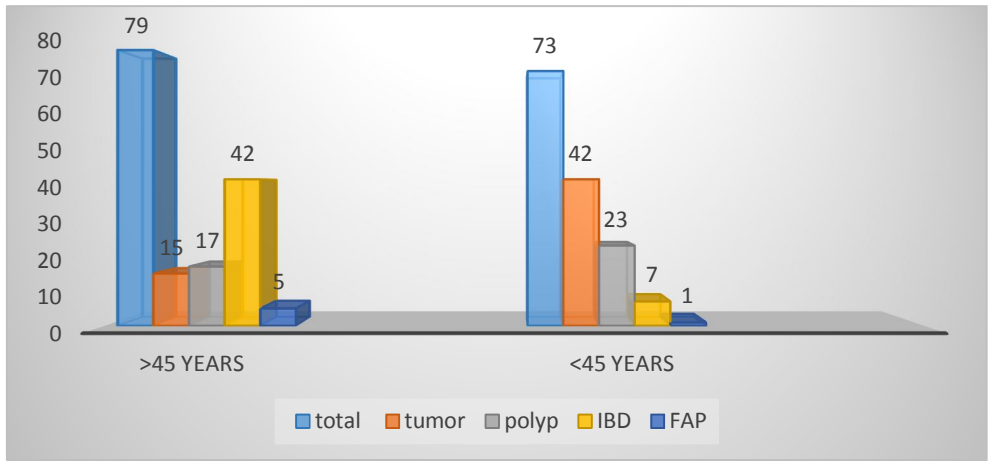

Figure 2: Serious lesion in two groups of patients below 45 years and above 45 years.

Table 2: Clinical features of patients with chronic hematochezia.

Diagnosis	Anemia	Anorexia	Weight loss	Abdominal pain	Abdominal mass
Non-serious lesion	10 (11%)	3 (3.5%)	0	5 (14.2%)	0
Internal hemorrhoid	6	0	0	0	0
Telangiectasia	3	0	0	0	0
Non-specific colitis	1	3	0	5	0
Serious lesion	80 (88.9%)	82 (96.5%)	65 (155)	30 (85.8%)	9 (100%)
Tumor	48	36	34	4	3
FAP	6	6	6	6	0
Polyp	2	0	0	0	0
IBD	24	40	25	20	0
Total (%) F/M	90 (22.5%) 60/30	85 (21.25%) 50/35	65 (16.25%) 55/10	35 (8.75%) 25/10	9 (2.25%) 3/6

Table 3: Causes of chronic hematochezia and gender distribution.

Diagnosis	Male	Female	Total No. (%)
Non- serious lesion	**142 (35.5%)**	**78 (19.5%)**	**218 (54.5)**
Internal hemorrhoid	125	67	192 (48)
SRU	0	1	1
Diverticulosis	6	3	9
Telangiectasia	3	1	4
Anal fissure	**4**	**2**	6
Non- specific colitis	**4**	**2**	6
Serious lesion	**80 (20%)**	**72 (18%)**	**152 (38)**
Tumor	**32**	**25**	57 (14.2)
FAP	**4**	**2**	6 (1.5)
Polyp	**24**	**16**	40 (10)
IBD	**20**	**29**	49 (12.3)
No. lesion found	**20**	**10**	**30 (7.5)**
Total	**260**	**140**	**400**

Figure 3: FAP.

Figure 5: Solitary polyp.

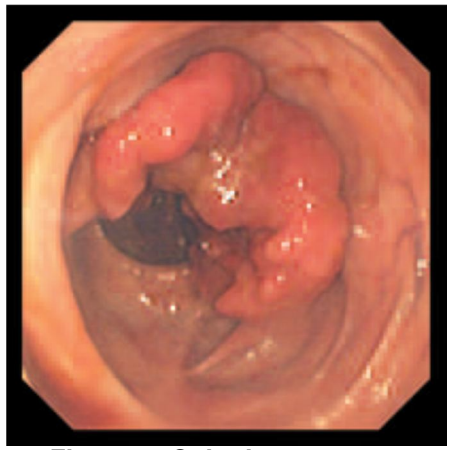

Figure 4: Colonic tumor.

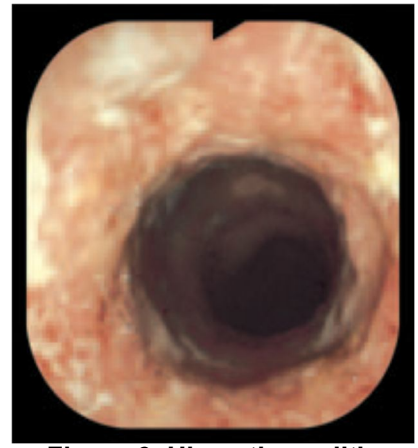

Figure 6: Ulcerative colitis.

Discussion

Chronic hematochezia is common symptoms in general population. Either due to serious lesion which was seen more in patient above 45 years who considered to (average risk group), or non- serious lesion observed in patient below 45 years (low risk group), patient require further diagnostic work up, and there is no general agreement between American and European panel whether colonoscopy is indicated or sigmoidoscopy may suffice in the diagnosis of patient to locate the site and type of lesion in patient below 45 years[1-7].

In this study the male to female ratio was 1.8/1. Males were 260 (65%) range of age between 30-90 years and females was 140 (35%), range of age (20-80 years) and the (mean age 50.5 years), this agree with study by Puglisi Carlo et al[12].

In this study 380 patients (95%) colonoscopy had been done, 150 patients below 45 years (low risk) and 230 patients over 45 years (average risk) close to study by Puglisi Carlo et al[12].

Patient's signs and symptoms considered to be alarming sign in this study, such as abdominal pain was seen in, weight loss in, anorexia and anemia, and it was agree with study by Nadeem Zia et al and the anemia and anorexia was the commonest signs and symptoms[13].

In this study, the patients with non-serious lesion was represent (54.5%), and hemorrhoid was the commonest cause and represent 48% of all age patients while the serious lesion was represent (38%) and the colorectal cancer was the commonest cause and was represent (15.7%), this agree with study by Alonso-Coello P, Wong RF, Kuwada SK[14,15].

The colorectal cancer was the commonest cause of hematochezia and was seen in (48%.4) of patients with Serious lesion and in patient's age below 45 years old, and reach to 53.1 % in patients over 45 years old and this agree with study by Helfand M, Marton KI et al[16] that consider the age above 45 years is important risk for colorectal cancer.

Second cause of chronic hematochezia was the (IBD), and represent (12.5)% and was seen in 49 patients, majority of the patient below 45 years (65-70%) and the ulcerative colitis was represent (90%) of (IBD), and this agree to study by Helfand M, Marton KI et al[16].

Polyp was the third cause of hematochezia and was seen in 40 patients (10 %), polyps are larger than 8 mm in diameter, most of the polyp located distally in the rectum and sigmoid, close to study, by Helfand M, Marton KI et al[16].

In this current study the (CRC) seen in 15 patients represent (3.75%) of total patients and the age was below 45 years with (low risk) so there is indication for colonoscopy in patient below 45 years with family history of (CRC) or the presence of alarming signs, this agree with study by Wong RF, Khosla R, Moore JH, Kuwada SK[15] and study by Du Toit J, Hamilton W, Barraclough K[17].

In this study, 13 patients with (CRC) in distal colon age below 40 years (low risk) and there was no family history of colorectal cancer, so sigmoidoscopy was enough for management this close to studies by Eckardt VF, Schmitt T, Kanzler G, et al the patient with ((low risk) and complaining from chronic rectal bleeding at age of 40 years or younger has four folds increase risk of colorectal cancer but this increase confined to distal colon so sigmoidoscopy suffices for diagnosis[18].

In this current study, only two patients (0.25%) had their age below 40 years old and they had family history of colorectal cancer or polyp, and the lesion was in proximal colon so there is indication for colonoscopy and this agree with study by Acosta JA et al, the results suggest that in patient at 40 years old or younger with scant rectal bleeding and with family history of (CRC) or large polyp or the presence of alarming signs so colonoscpy

may be justified because significant findings may be present in up to 21% of patients[19]. Agree with study by Wong RF, Khosla R, Moore JH, Kuwada SK[15].

In this current study no cause of bleeding in 30 patients (7.5%) close to this a study of Nadeem Zia et al[20], and Graham DJ, Pritchard TJ, Bloom AD colonoscopy was normal in (21%)[20].

In conclusion; Hemorrhoid is the commonest cause of the chronic hematochezia in all age group. Serious lesion (CRC) is more in patient above 45 years old (average risk) while the (IBD) is more in patient below 45 years old. Sigmoidoscopy suffices for patient below 40 years with chronic hematochezia and with low risk. Colonoscopy is strongly indicated and justified for all patients their age below 45 year complained from chronic hematochezia.

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