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Management of non- infectious lower gastrointestinal bleeding in Emergency Department

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ABSTRACT

Background: Lower Gastrointestinal Bleeding is characterized refers to bleeding that originates from the lower part of the gastrointestinal tract, including the colon, rectum, and anus. It can present with various symptoms and can range from mild to severe.

Patients and methods: Across sectional study of 93 patients complaining of Lower Gastrointestinal Tract Bleeding (LGITB) were examined by Emergency Department (ED) doctors from 1st of February 2023 to 1st of October 2023 in ED of Al-Yarmouk teaching hospital. All Patients present with acute infectious bloody diarrhoea, Upper Gastrointestinal Tract Bleeding (UGITB) and age less than 16 years excluded from the study. General information taken from the patients by a questioner all parameters include (age, sex, Presentation to ED, past medical and surgical history, Clinical finding, laboratory investigation, Treatment, Time spent in ED). Diagnosis was aided by proctoscope, sigmoidoscopy, and colonoscopy, and the role of ED in management were assessed.

Results: A total 93 patients (62 males and 31 female) with mean age 51.5 years were treated. The most frequent diagnosis was haemorrhoid (40.9%) followed by polyp (11.8%) and diverticulosis (10. 8%).All patient stay in ED less than 24 hours with mean time stay was 11.6 hours. Most common presentation was fresh blood per rectum (60.2%), haematochezia (24.7%) and melena (15.1%).

Conclusion: Proctoscopy done in ED gives a fast diagnosis and treated patient in ED and discharge home (reduce admission rate). Over all ED have an important role of management of patients with LGITB if good protocol were applied.

INTRODUCTION

Lower GI bleeding is characterized by the expulsion of blood from the gastrointestinal system distal to the ligament of Treitz [1]. From 1950 to 1960, The mortality rate resulting from acute lower gastrointestinal bleeding remained significantly elevated, despite surgical interventions. This was mainly caused by difficulties in locating the bleeding source. Progress in medical technology, particularly in colonoscopy, angiography, technetium-labeled red cell imaging, and multi-detector CT, have reduced the fatality rate associated with lower gastrointestinal hemorrhage to 5-10% over the past two decades. This is mostly attributable to enhanced capabilities in identifying the source of hemorrhage, advancements in resuscitation techniques, and superior medical interventions [1], [2]. Similar to upper bleeding from the GI lower gastrointestinal bleeding is a prevalent issue in emergency medicine and must be regarded as potentially life-threatening. Lower gastrointestinal bleeding is more prevalent than upper gastrointestinal bleeding, with an annual incidence of roughly 109 per 100,000 individuals. Approximately 80% of lower gastrointestinal bleeding is expected to stop spontaneously [1], [3]. Lower GI bleeding is more common among males and increases significantly in the elderly [1]. Co-morbid diseases (cardiovascular disease, cirrhosis, renal disease, diabetes mellitus, and malignancy) are more common in the elderly which are associated with an increased incidence and severity of Lower Gastrointestinal Bleeding (LGIB). Polypharmacy is prevalent among the elderly, characterized by heightened consumption of anticoagulants, acetylsalicylic acid (ASA), and nonsteroidal anti-inflammatory medicines (NSAIDs), which elevate the risk of lower gastrointestinal bleeding (LGIB) [4], [5]. The clinical presentation is diverse, with severity contingent upon the volume of blood lost, ranging from minimal blood on toilet paper accompanying well-formed brown feces to severe, life-threatening hemorrhage [6]. LGIB may be acute, concealed, or obscure in nature. Acquiring a prior history of gastrointestinal bleeding is essential. The consumption of iron or bismuth may mimic melena, whereas certain foods like beets can resemble hematochezia. Nonetheless, stool guaiac testing in such instances will yield negative results [1]. The most common causes of LGITB in general are diverticular disease, ano-rectal diseases, colitis, colorectal polyps or neoplasms and Angioectasias [3]. Early colonoscopy (within 24 hours) had demonstrated a greater diagnostic and therapeutic value and is associated with shorter hospital stay [3].

Aim of the study: Determine the Role of ED in diagnosis and Treatment of patient with non- infectious LGITB.

PATIENT AND METHODS

A cross sectional study carried out at Emergency Department (ED), Al-Yarmouk teaching hospital from 1st of February 2023 to 1st of October 2023, in this period 137 patient, present to us with symptom of lower gastrointestinal bleeding and selected according to following inclusion and exclusion criteria:

- **Inclusion criteria:** Age greater than 16 years and patient present with LGITB as their chief complain.

- **Exclusion criteria: -** Age less than 16 years, patient present with fresh blood per rectum as a result of acute infectious bloody diarrhea and patient proved to have UGITB.

  Eight patients present with age less than 16 years and transfer to Al-Eskan pediatric hospital, 19 patients diagnose with cute infectious bloody diarrhea and give treatment and discharge home for follow up, 17 patients diagnosed with UGITB were they excluded from this study, the remaining 93 patients which present with LGITB take in this study. For all patients in this study, information's taken by questioner which includes:

1- **General information:**
   - **Age:** the range between (16-85) years was divided into groups for each group extends for 10 years.
   - **Gender**
2- **Chief complaint:** Fresh bleeding per rectum, melena, hematochezia
   - **Associated symptoms:** Chronic Diarrhea, abdominal pain, hematemesis, constipation, weight loss (significant) and anal pain
3- **Past medical and surgical history for patients:** Smoking, ASA/NSAIDs, previous gastrointestinal bleeding, anticoagulation, alcohol, history of Gastrointestinal tract (GIT) cancer, previous GIT surgery, foreign body ingestion, aortic graft, food type, drug and iron ingestion.
4- **Clinical finding**: Tachycardia, hypotension, anemia, Perrectum examination (PR) finding, abdominal examination.
5- **Time spent in ED**
6- **Diagnostic studies:** Proctoscopy, sigmoidoscopy and colonoscopy
7- **Laboratory investigation in ED:** Hemoglobin (Hb)% level + Packed Cell Volume, General Stool Examination (GSE), blood group+ cross match, Electrocardiography for old patients.
8- **Treatment:** Oxygen, Intravenous Fluid (IV Fluid) (1-2 pint of ringer), Packed Red Blood Cell (PRBC) (1-3 pint) and Antibiotic (AB) (3rd generation cephalosporin) in certain cases.

All patients send for Hb% and patients with diarrhea send for GSE in ED. For all patients vital signs assessed in ED including (blood pressure and pulse), and all patients need admission to the ward sent for blood group. PR and Proctoscopy done for all patients in this study in ED with exception of patients with fissure. According to these information, patients had different fate as some transferred to the surgical ward, other referred to surgical outpatient, the rest discharge to home with treatment. Hemoglobin (Hb%) done using KoKuSAN (H-1200f) device, while; GSE done using LOMO (micmed2) microscope. Sigmoidoscopy, Colonoscopy and OGD done using (Pentax EPK 1000 system) present in endoscopy unit of GIT center of AL- Yarmouk Teaching Hospital by specialist surgical or medical doctor.

RESULTS

This study includes 93 patients, 62 males (66.7 %) and 31 females (33.3 %), male to female ratio (2: 1) all with history of LGITB. The average of age was (51.5 years), highest incidence of LGITB occur between age 36-45 years (25.9 %) and between age 46-55 years (22.7 %), and this was true for both genders, as shown in table (1).

The reasons for consulting the Emergency Department (ED) are show in Table (2). After examination all patients in ED, the patients classified as following, 38 patients (40.9%) were admitted from ED to surgical ward, 3 patients (2.7%) of them were undergo to emergency haemorrhoidectomy surgery as they present with massive bleeding. 28 patients (30.1%) were referred from ED to surgical outpatient and arrange for outpatient endoscopy (colonoscopy, sigmoidoscopy). The remaining 27 patients (29%) were given treatment and discharge to home.

The haemoglobin was done for all patients; the mean haemoglobin of patients was11.8 g/dl (range 4.1-13.4 g/dl), table (3).

Table (4,5) show the management and outcome of patients. Mean time stay for all patients in ED is 11.6 hour, large number of patients 32 (34.4%) stay in ED from 5-8 hours, longest stay time in ED (21-24 hours) occurred in 7 patients (7.5%) because they need more care in ED as they need blood transfusion and stabilize the condition before admission to ward.

The main past medical and surgical history was: 40 patients (43 %) smoking, 33 patients (35.5 %) take ASA/NSAID, 24 patients (25.8 %) prior GIT bleeding, 18 patients (19.4 %) take anticoagulant, 7 patients (7.5 %) alcohol, 3 patients (3.2 %) with history GIT cancer and 2 patients (2.2%) have previous GIT surgery.

PR done for 85 patients (91.4%) with exclusion of 8 patients which present with fissure, 43 patients (46.2%) have no finding in PR, 25 patients (26.9%), present with blood in finger, 19 patients (20.4%) present with feeling of mass, 11 patients (11.8%) present with Haemorrhoid and 11 patients (11.8%) present with painful PR examination. Proctoscopy done for 85 patients (91.4%), Colonoscopy done for 44 patients (47.3%), sigmoidoscopy done for 15 patients (16.1%).

After full evaluation of all patients we found that the most common finding was haemorrhoid which was noted in 38 patients (40.9%) more commonly in male (29) and in age range from 36-45 year, followed by polyp which noted in 11 patients (11.8%) more commonly in male and age range from 36-45 years followed by Diverticulosis which founded in 10 patients (10.8%) more of them noted in male (9) and in age range from 56 – 65 years, Telangiectasia was found in 1 male patient (1.1%) , no finding noted in 22 patients (23.7%). There is some patients present with combined finding which are : 7 patients (7.5%) have Diverticulosis and haemorrhoid, 2 patients(2.2%) tumor and fissure., 2 patients(2.2%) proctitis and polyp, 1 patient (1.1%)haemorrhoid and proctitis, 2 patients (2.2%) proctitis and fissure, 2 patients (2.2%) haemorrhoid and polyp, 1 patient (1.1%) Diverticulosis and polyp, 1 patient (1.1%) haemorrhoid and fissure , 1 patient (1.1%) polyp and fissure , 1 patient (1.1 %) proctitis and Diverticulosis , 1 patient (1.1%) tumor and ulcerative colitis.

DISCUSSION

In our study we found that LGITB is more among males and increase significantly in elderly which is agreed with, Chuan-Guo Guo et al and Maha Hossam et al [7], [8]. The fate of patients in ED in our study were most of them (40.9%) admitted to surgical ward and (30.1%) discharged home which is disagreed with fernandez CA et al show (71.2%) discharge home and (9%) admitted to surgical department[9], this difference in fate of

patients because of the ED in another country contain short stay unit which patients can stay in this unit for 72 hours and patients can send for investigation and use diagnostic procedure in this unit so decrease need for admission to hospital and increase rate of discharge of patients from ED.

In this study the mean hemoglobin level was 11.8 g/dl which is somewhat similar to another studies, Fernandez CA et al (12.5 g/dl) and Nadeem et al, found (12.2 g/dl) [9], [10], this may be due to most patients (73.1%) in our study within normal range of Hb level (11-16 g/dl).

In our study, the most patients had their bleeding stopped spontaneously (80.1%) which is agreed with, Gayer et al (77.6%) and Zuccaro G et al (80%) [6], [11].

In our study, high percent of patients present with history of smoking (43%) similar to study of Nagata N et al [12] where found smoking among the risk factor of bleeding, also high percent of patients take ASA/NSAIDs (35.5%) and anticoagulant (19.4%) agreed with fernandez CA et al, which found ASA/NSAIDs (30.3%), anticoagulant (21.5%) [9], this may be explained by older age of patients and increase proportion of cardiovascular disease in our study.

In our study found high percent of patients with history of previous gastrointestinal bleeding (25.8%) like in fernandez CA et al (22.8%) [9], this due to large number of patient with history of ASA/NSAID intake which this treatment cause hemorrhage from diverticulum.

The use of proctoscope at the bedside in E.D can determine the source of bleeding such as hemorrhoid which is similar result found in Starte LL et al [13].

In our study, the most common cause of LGITB was hemorrhoid (40.9%), this agreed with Fernandez CA et al [9], found hemorrhoid (35%) as the most common cause of LGITB.

In this study (23.7%) of patients present with no finding and this finding agreed with Nadeem et al [10] found (19%) with no finding, and these patients need other diagnostic procedure to find source of bleeding.

CONCLUSION

ED has an important role as 1st step to assess and direct the patient to the right direction. Proctoscopy done in ED give a fast diagnosis, treated patient in ED and discharge home.

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TABLES

Table (1): Age Distribution in years for all patients.

age in years	No. of patient	%	Male	%	female	%
16 – 25	8	8.6	5	5.4	3	3.2
26 -35	6	6.4	3	3.2	3	3.2
36 – 45	24	25.9	15	16.2	9	9.7
46 -55	21	22.7	14	15.2	7	7.5
56 – 65	19	20.3	13	13.9	6	6.4

66 -75	13	13.9	10	10.7	3	3.2
76- 85	2	2.2	2	2.2	0	0
Total No.	93	100	62	66.8	31	33.2

Table (2): Presentation, clinical finding and associated symptoms of patients

Main Presentation		**No. of patient**		**Percentage %**	
LGITB	Fresh bleeding per rectum	56	93	60.2	100%
	Hematochezia	23		24.7	
	Melena	14		15.1	
associated symptoms and clinical finding					
Chronic Diarrhea		20		21.5	
Hypotension		16		17.1	
Abdominal Pain		15		16.1	
Tachycardia		13		13.9	
anemia		12		12.9	
Constipation		6		6.4	

Table (3): Haemoglobin level of patients

Level	**No. of patient**	**Percentage %**
Normal Hb% (11-16 g/dl)	68	73.1
Low Hb% (7-10 g/dl)	18	19.4
Very low Hb% (4-6 g/dl)	7	7.5
Total	93	100

Table (4): Management in ED

Management	**No. of patient**	**Percentage %**
IV Fluid (1-2 pint of ringer)	55	59.1
*** Outpatients treatment**	27	29
PRBC (1-3 pint)	12	12.9
AB(3rd generation cephalosporin)	3	3.2

* stool softeners, topical and systemic analgesics, patients advised to do warm sitz baths (twice or three daily), take high – fiber diet, adequate fluid intake and advise for proper anal hygiene.

Table (5): The outcome of patients

Management	**No. of patient**	**Percentage %**
Emergency surgery	3	3.2
Bleeding stop spontaneously	75	80.6
Elective surgery	23	24.7

Abbreviations

Abbreviations	Description
AB	Antibiotic
ASA	Acetyl salicylic Acid
ED	Emergency Department
G I	Gastrointestinal
GIT	Gastrointestinal tract
GSE	General Stool Examination
Hb %	Hemoglobin level
IV Fluid	Intravenous Fluid
LGIB	Lower Gastrointestinal Bleeding
LGITB	Lower Gastrointestinal Tract Bleeding
NSAIDS	Non-Steroidal Anti-Inflammatory Drugs
PR	Perrectum examination
PRBC	Packed Red Blood Cell
UGITB	Upper Gastrointestinal Tract Bleeding