ISSN: 1813-1638

The Medical Journal of Tikrit University

Available online at: www.mjotu.com

Gastrointestinal bleeding in pediatric age group

Wafaa Abdulqader Wli [1]

Abbas Abd Al-Qader Al-rabaty [2]

(1) Department of pediatrics, Medical college, Hawler Medical University. Iraq

(2) Department of pediatrics, Medical college, Hawler Medical University.. Iraq

***Keywords*:**

upper gastrointestinal bleeding, lower gastrointestinal bleeding, hematemesis, Malena, hematochezia.

ARTICLE INFO

Article history:

Received	12 Sep	2018
Accepted	01 Oct	2018
Available online	01 Dec	2021

ABSTRACT

Gastrointestinal hemorrhage during infancy and childhood is common and accounts for up to 20% of referrals to pediatric gastroenterologists. Most causes are self-limited and benign, 75% to 85% of gastrointestinal tract bleeding (GITB) arrest spontaneously.

This is a descriptive single center retrospective study done on 200 patients less than19 years old whom attend the gastrointestinal center / Rzgari hospital in Hawler from the first of January 2015 till first of December 2017; 110 (55%) were females and 90 (45%) were males. 137 patients were adolescence (68.5%), 47 patients were school age (23.5%), 9 patients were preschool age (4.5%) and 7 patients were in toddler age group (3.5%) . it was found that 89 (44.5%) patients had upper GIT bleeding, 111(55.5%) patients had lower GIT bleeding. Esophagogastroduodenoscopy (EGD) results of 34(38.20 %) patients with upper GIT bleeding were normal while 17(19.10 %) had duodenal ulcer, 11(12.36 %) had gastric ulcer , and 6(6.74 %) had antral gastropathy. lower GIT bleeding found in 111(55.5%) patients; from these, finding of colonoscopy in 41patients (36.94 %) were normal, 16(14.41 %) were have internal pile, 15(13.51 %) were have colonic polyp, 11(9.90%) for solitary rectal ulcer and 10 (9.00%) ulcerative colitis, and 7(6.31%) patients were have Crohns disease.

DOI: http://dx.doi.org/10.25130/mjotu.27.2021.02

*Corresponding author E mail : Wafaaw86@gmail.com

Introduction:

Gastrointestinal bleeding also known as gastrointestinal hemorrhage, is all kinds of bleeding in the gastrointestinal tract, from the mouth to the rectum. GIT bleeding is a symptom of a disease or condition, rather than a disease or condition by itself. Acute GIT bleeding is sudden and can sometimes be severe, chronic GIT bleeding is slight bleeding that last a long period or may come and go .[1]

Gastrointestinal bleeding may be a dangerous problem in children because the total blood volume of a child is relatively small and blood losses from gastrointestinal tract can easily deteriorate the child. It is an uncommon but not a rare situation, and differential diagnosis is established on the age of the patient, the localization and characteristics of bleeding with accompanying symptoms.[2]

Gastrointestinal hemorrhage during infancy and childhood is common and accounts for up to 20% of referrals to pediatric gastroenterologists .[3] GIT bleeding in infants and children is one of the most awesome conditions encountered in pediatrics. It is nevertheless an anxiety-provoking complaint. Most causes are self-limited and benign, 75% to 85% of GI bleeding arrest spontaneously.[4]

Aim of study:

Determination of the main causes of upper and lower gastrointestinal bleeding in the patients less than 19 years old at the gastrointestinal center / Rzgari hospital in Hawler.

Methods:

A descriptive study carried out within the period from the first of January 2015 till first of December 2017, Studying sample include all patients less than 19 years old who presented with upper and /or lower gastrointestinal bleeding and attended to gastrointestinal center / Rzgari hospital in Hawler.

Data collection will be through Information retrieved from patient's history by the research questionnaire.

All patients should be examined

thoroughly for any signs of shock (tachycardia, hypotension, cold extremities, diminished or absent pulses, delayed capillary refilling (> 2-3 sec), and decreased urine output), or any signs of chronic liver disease (spider nevi, splenomegaly , ascites , palmer erythema , and xanthomas).

Laboratory Studies in Initial Evaluation of gastrointestinal bleeding (Blood grouping and cross matching ,Complete blood count with platelets count ,Prothrombin time PT , partial thromboplastin time PTT, Bleeding time, TSB with fractionation , liver enzyme , alkaline phosphatase, Serum albumin, Blood urea nitrogen, serum creatinine, serum electrolytes and Hepatitis screen).

EGD required informed consent should be obtained from parent or guardian, and assent should be obtained when appropriate in older children. As a preparation for EGD patient should be fasting from breast milk, nonhuman milk formula for 4 hours and solids for 6 hours and Colon cleans powder in form of sachets each one dissolve in four glasses of water should be taken in the previous 24 hours before the procedure (four sachets should be taken) accompanied by ingestion of clear fluid with bisacodyl tab (2 tablet / 8 hourly in the 24 hours before colonoscopy)[5] before elective sedation by Midazolam intravenously in a dose according to age.[5]

Results:

From this 200 patients whom attend the gastrointestinal center / Rzgari hospital in Hawler less than19 years old; 110 (55%) were females and 90 (45%) were males as shown in Figure (1).

Regarding age distribution for the patients with gastrointestinal bleeding in gastrointestinal center / Rzgari hospital in Hawler less than19 years old. It was found that 137 patients were adolescence (68.5%), 47 patients were school age (23.5%), 9 patients were preschool age (4.5%) and 7 patients were in toddler age group (3.5%) as shown in figure (2)

Regarding the site of bleeding it was found that 89 (44.5%) were have upper GIT bleeding, while 111(55.5%) patient

were had lower GIT bleeding as shown in figure (3)

Concerning the result of EGD for those patients with upper GIT bleeding it revealed that; 34(38.20 %) were normal 17 (19.10 %) were have duodenal ulcer, 11(12.36 %) were have gastric ulcer , 6(6.74 %) were have antral gastropathy , 6(6.74 %) were have gastroesophageal reflux(GERD), 5(5.62 %) were have duodenal erosion , 4(4.50 %) were have esophageal varices ,3(3.37 %) were have gastric erosion , 2(2.5%) have hiatus hernia ,1(1.12 %) were have duodenitis , esophageal web/ esophageal ulcer , lower esophagitis and Mallory Weiss as revealed in figure(3).

Regarding the colonoscopy findings for those 111(55.5 %) patients with lower GIT bleeding it was found that; 41(36.94 %) were normal, 16(14.41 %) were have internal pile, 15(13.51%) were have colonic polyp, 11(9.90 %) for solitary rectal ulcer and 10(9.00 %) for ulcerative colitis, 7(6.31%) were have crohns disease , 5(4.50 %) were have anal fissure , 3(2.70%) eosinophilic colitis , 2 (1.80 %) nonspecific colitis and 1(0.90 %) has colonic telangiectasia as presented in figure (4)

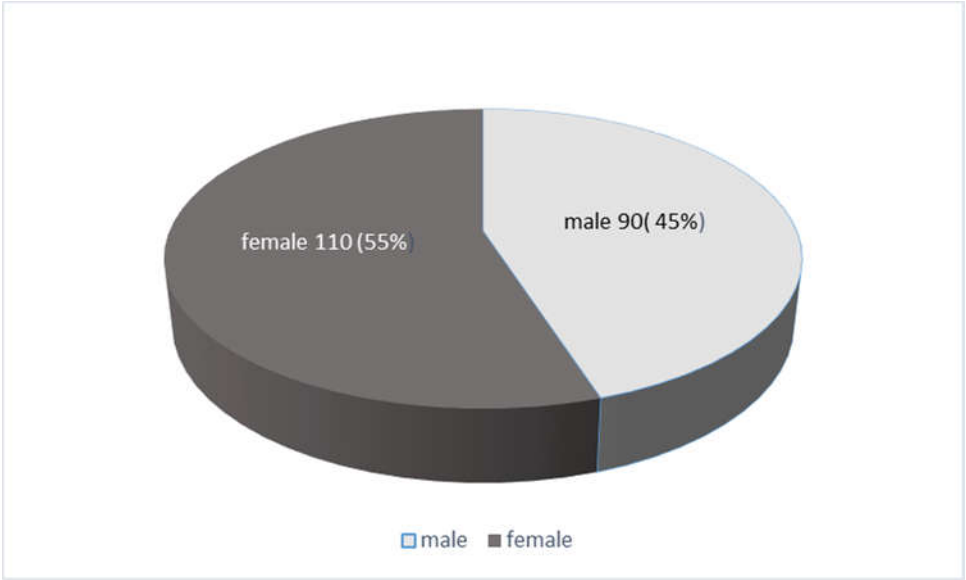

Figure (1): female to male ratio in children with gastrointestinal bleeding in gastrointestinal center / Rzgari hospital in Hawler.

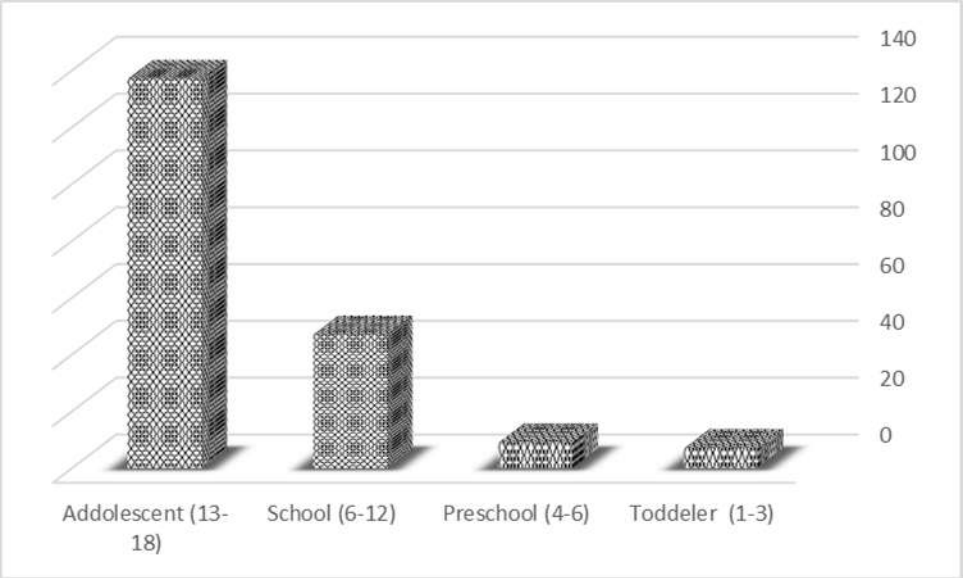

Figure (2): Age distribution in gastrointestinal bleeding in gastrointestinal center / Rzgari hospital in Hawler.

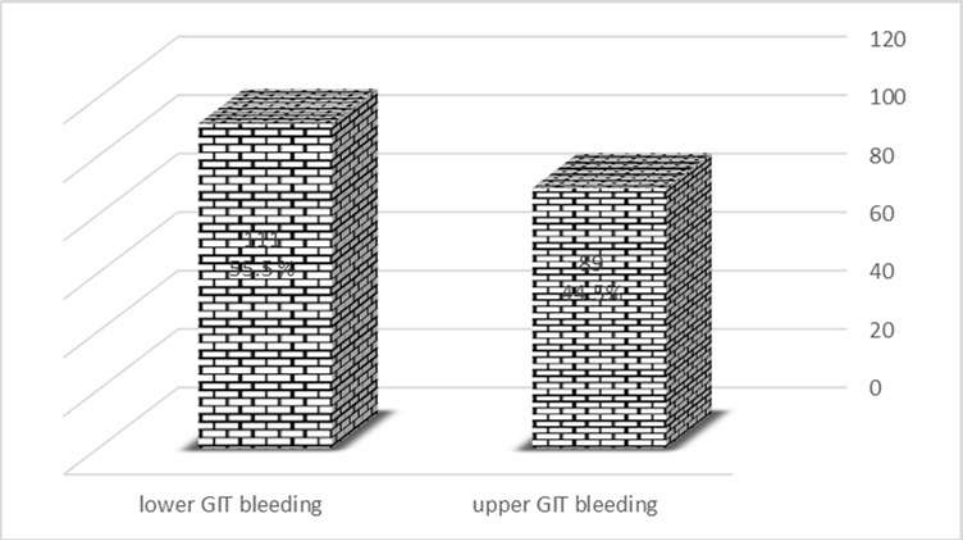

Figure number (3): Distribution in gastrointestinal bleeding according to site.

Table (1): Shows the different sites of GIT and the age group

Age group	**Upper GIT bleeding (%)**	**Lower GIT bleeding (%)**
Toddler (1-3)	3(3.38)	4 (3.60)
Preschool (4-6)	11(12.36)	6 (5.41)

School (6-12)	15 (16.85)	24 (21.62)
Adolescent (13-18)	60 (67.41)	77 (69.37)
Total	**89 (100)**	**111 (100)**

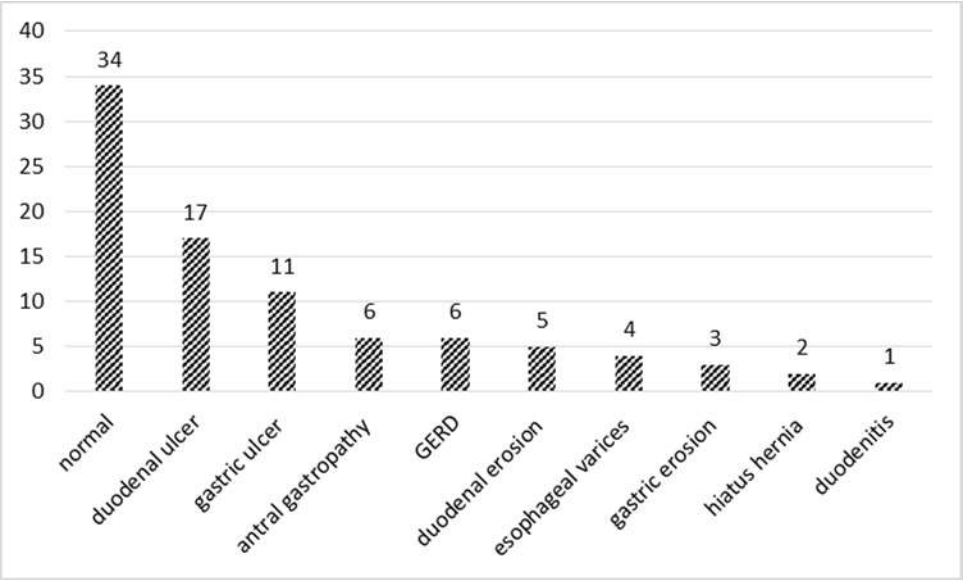

Figure (3): Results of esophagogastroduodenoscopy (EGD) for patients with upper GIT bleeding.

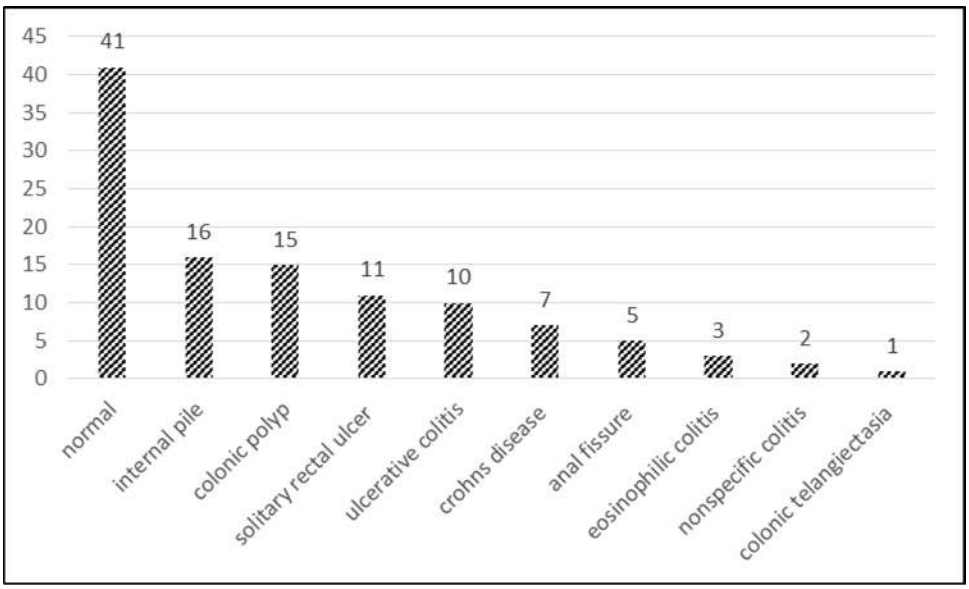

Figure (4) Colonoscopy results for those with lower GIT bleeding patients.

Discussion

Gastrointestinal bleeding may be a dangerous problem in children because the total blood volume of a child is relatively small and blood losses from gastrointestinal tract can easily deteriorate the child. It is an uncommon but not a rare situation [4].

A total of 200 pediatric patients (less than19 years old) attend the gastrointestinal center / Rzgari hospital in Hawler complaining from GIT bleeding; 110 (55%) were females and 90 (45%) were males, in a similar study done in Iran by Moravej H et. al [6] on 309 pediatric patients whom complain from gastrointestinal bleeding, it was found that 185(60%) were male and 124 (40%) female.

Regarding age distribution, it was found that 137 patients were adolescence (68.5%), 47 patients were school age (23.5%), 9 patients were preschool age (4.5%) and 7 patients were in toddler age group (3.5%). Neoborns were not included in our study due to lack of general anesthesia and anasathalogist in gastrointestinal center / Rzgari hospital in Hawler. In a similar study done by Gimiga N et .al [7] in Romania, GIT bleeding according to age distribution was 15 patients (12.7%) in age group 0-2 years, 65 (55.1%) in the 3-10 year group, 38 (32.2%) in the 11-18 year group.

Concerning the result of esophagogastroduodenoscopy (EGD) patients with upper GIT bleeding it revealed that; 34(38.20 %) were normal which comparable with a study done in Uganda approximately 51% of the upper GIT bleeding cases EGD finding was negative [8]. The ability of endoscopy to reveal the cause of bleeding depends on many factors the timing of the procedure has been shown to affect the yield. In one report, the yield of endoscopy was highest (82%) when the procedure was performed in the first 24 hours, and dropped to 68% and 48% when the procedure was performed between 24 and 72 hours and after 72 hours, respectively.[9] In gastrointestinal center / Rzgari hospital in Hawler, endoscopy is usually performed in bleeders within 72 hours

of admission or later. Other important factors include the experience of the endoscopist who should be able to perform a complete EGD inspection, including blind areas. The selection of patients for endoscopy can affect the yield of the procedure. The vomiting of ingested colored drinks in the form of bright red or coffee-ground vomitus may simulate hematemesis. Similarly, the vomiting of swallowed blood of maternal origin (i.e. during delivery or breast-feeding) or of nasopharyngeal origin may also simulate hematemesis. The ability to exclude these cases before endoscopy will reduce the number of negative procedures and improve the yield.

In this study esophagogastroduodenoscopy revealed peptic ulcer disease in 28 (31.46) patients,17 (19.10%) were have duodenal ulcer and 11(12.36 %) were have gastric ulcer. Bleeding from gastric and duodenal ulcer as reported by Hassoon et al [10] in a study done in Baghdad was accounted for (9.7%) and (7.4%) of upper GIT bleeding respectively. in a similar study done in Iran, Dehghani et al[11] found that duodenal and gastric ulcer found in (8.5%, 6.8% respectively).In contrast; peptic ulcer disease were very rare in kingdom of Saudi Arabia in a study done by El Mouzan et al. Differences in the frequency of peptic ulcer in the mentioned studies may explained by the fact that most of the studied patients were adolescence (68.5%) and peptic ulcer disease is an uncommon disorder in childhood [12]

Regarding the colonoscopy findings for those 111(55.5 %) patients with lower GIT bleeding it was found that 41(36.93 %) were normal. A similar study done in Iran by Moravej H et. al [6] they found that (30.7%)of cases with lower GIT bleeding were normal , and another study done in UK by Clarke, et al [13] no obvious cause of lower GIT bleeding could be identified in (35%) of cases . Colonoscopy, even in the best centers of the world cannot find any abnormality in 10%–30% of patients with lower gastrointestinal bleeding that might be attributed to several causes

such as hidden positions of lesions between intestinal folds, incomplete colonoscopy since poor bowel preparation and presence of lesions are not examined segments, auto-amputation of polyps and repaired ulcer or other lesions before performing the procedure.[14]

In our research 16(14.41 %) were have internal pile while in the study of Moravej H et. al [6] ; hemorrhoids accounted for 5% this explained by that the majority of our sample study is adolescent.

In this study 15 (13.51 %) were have colonic polyp while in El Mouzan et al [12] in kingdom of Saudi Arabia colonic polyp account for 27% of lower gastrointestinal bleeding .

It seems that these patterns reflect the general pattern of diseases in different communities. The accuracy of colonoscopy in identifying polyps depends largely on the ability to examine a well-prepared colon to the cecum.

Conclusion:

Most of the causes of upper GIT bleeding is normal. The finding of esophagogastroduodenoscopy in children presented with upper GIT bleeding is influenced by the timing of the procedure, experience of the endoscopist, and the prevalent pattern of the disease in the country. Also the colonoscopy finding in the majority of cases of lower GIT bleeding is normal.

Recommendations:

Regarding esophagogastroduodenoscopy in cases with GIT bleeding the procedure should be performed in the first 24 hours from the bleeding.

In respect of colonoscopy the accuracy of colonoscopy in identifying the cause depends largely on:

1. The ability to examine a well-prepared colon to the cecum.
2. The recommendation that pancolonoscopy should be the procedure of choice especially in children with lower GIT bleeding.
3. Patients should be well selected for colonoscopy in order to increase the accuracy of the procedure.

Referances:

1. Kupfer Y, Cappell MS, Tessler S. Acute gastrointestinal bleeding in the intensive care unit. The intensivist's perspective. Gastroenterol Clin North Am. 2000 Jun; 29(2):275-307.

2. Hizal G, Ozen H. Gastrointestinal bleeding in children. Journal of Pediatric Sciences 2011 Mar; 3(4):100.

3. Pant C, Olyaee M, Sferra TJ. Emergency department visits for gastrointestinal bleeding in children: results from the Nationwide Emergency Department Sample. Current Med Res Opin 2015 Feb; 31(2):347-51.

4. Fleisher G, Ludwig S, ed. gastrointestinal bleeding. Pediatric Emergency Medicine, 4th ed. Philadelphia: Lippincott Williams & Wilkins; 2000; 30:275-282.

5. Basturk A, Artan R, Yılmaz A. Investigation of Efficacy of Lidocaine Spray forSedated Esophagogastroduodenoscopy in Children. Pediatr Gastroenterol HepatolNutr. 2017 Jun;20(2):87-93. doi: 10.5223/pghn.2017.20.2.87.

6. Hossein Moravej, Seyed Mohsen Dehghani, Hamideh Nikzadeh et.al , Lower Gastrointestinal Bleeding in Children: Experiences From Referral Center in Southern Iran , J Compr Ped. 2013 May; 4(2).

7. Gimiga N, Olaru C, Diaconescu S, Miron I, Burlea M. Upper gastrointestinalbleeding in children from a hospital center of Northeast Romania. MinervaPediatr. 2016 Jun;68(3):189-95. PubMed PMID: 27125439.

8. OkelloT.R.Upper gastrointestinal endoscopic findings in adolescents at Lacor hospital, UgandaAfr Health Sci .2006,6(1):39-42

9. Huang IF, Department of Pediatrics, Kaohsiung Yeterans General Hospital, Taiwan, 2000. PUBMED: 12908568

10. Abdullah J.Hassoon , Afrah A.AlMaeeni , Huda Y. Matloub , Upper Gastrointestinal Bleeding In Children , J Fac Med Baghdad 2012 july; 54 (3).

11. Dehghani SM, Haghighat M, Imanieh MH, Tabebordbar MR Upper Gastrointestinal Bleeding in Children in Southern Iran Indian J Pediatr2009 Jun;76(6):635-8. PUBMED:19390793

12. EL Mouzan MI, Abdullah AM, AI-Mofleh IA. Yield of endoscopy in children with hematemesis. Trop Gastroenterol 2004; 25: 44-46.

13. Clarke G, Robb A, Sugarman I, McCallion WA. Investigating painless rectal bleeding--is there scope for improvement? J Pediatr Surg. 2005;40 (12):1920-2

14. Motamed F, Najafi M, Khodadad A, Fallahi GH, Farahmand F, Sobhani M. Colonoscopic findings in children with lower gastrointestinal bleeding. Govaresh. 2008;13(1):54-722.