Original Article

Clinical and etiological profile of upper gastro intestinal bleed in children with endoscopic correlation

Dhakshayani R V[1*], Balamma Sujatha[2], Nirmala D[3], Sumathi B[4], Bhaskar Raju[5]

[1]Assistant Professor, [3,4]Professor, [5]Retired Professor, Department of Paediatrics, Institute of Child Health and Hospital for Children, Egmore, Chennai- 600008, Tamil Nadu INDIA.
[2]Assistant Professor, Department of Paediatrics, Saveetha Medical College, Saveetha University, Thandalam, Chennai- 602105, Tamil Nadu, INDIA.
Email: suja1973@gmail.com

Abstract

Background: About 10-15% of paediatric gastroenterology referrals are for gastrointestinal bleeding. Worldwide mortality rate due to UGIB ranges from 5 to 21%. This study was conducted to determine the correlation of Upper Gastrointestinal endoscopy (UGIE) findings with etiological causes of UGIB. **Materials and Method:** A prospective study was conducted in the Department of Paediatric Gastroenterology. Consecutive children of age ranging from 3months to 12 years of either sex presenting with hematemesis or melena were included in the study. All the children were subjected to UGIE within 24 hours of bleeding or after stabilisation of the child. **Results:** A total of 155 children were enrolled in the study. Etiological break up of UGIB are: Variceal bleed was 41.9% (65), Gastritis 27.7% (43), Esophagitis 14.8% (23), Gastric ulcer 3.2% (5), Duodenal ulcer 4 (2.6%), Hiatus hernia 2.6% (4), Unknown etiology 2.6% (4), Mallory- Weiss tear 1.9%, Spurious hematemesis 1.3% (2), Duodenal polyp and AV malformation 0.6% (1) each. A total of 74 (47.7%) children had taken ulcerogenic drugs, of which 46 (62.1%) had UGIB due to non variceal causes and in another 28 (18.7%) cases, the drugs been a trigger factor for bleed. **Conclusion:** The single most common cause for UGIB in our study was variceal bleeding 41.9 %, but when collectively considered mucosal lesions (52.8%) in the form of gastritis, esophagitis, gastric ulcers, duodenal ulcers and Mallory- Wiess tear was the leading cause. In Mucosal lesions the important contributing factor is the usage of ulcerogenic drugs, which is also a triggering agent in variceal bleed. So paediatricians should be cautious while prescribing NSAIDs.

Keywords: NSAIDs, Hematemesis, Melena, Upper Gastrointestinal Bleed, Upper Gastrointestinal Endoscopy and Variceal Bleed.

*Address for Correspondence:
Dr. Balamma Sujatha, Assistant Professor, Department of Paediatrics, Saveetha Medical College, Saveetha University, Thandalam, Chennai- 602105, Tamil Nadu, INDIA.
Email: suja1973@gmail.com

Received Date: 08/11/2015 Revised Date: 12/12/2015 Accepted Date: 02/01/2016

Access this article online	
Quick Response Code:	Website: www.statperson.com
	DOI: 04 January 2016

INTRODUCTION

Upper Gastro-Intestinal Bleeding (UGIB) in children even though is not common, is a serious matter of concern as it provokes anxiety in the children and parents. About 10-15% of paediatric gastroenterology referrals are for gastrointestinal bleeding. Worldwide mortality rate due to UGIB ranges from 5 to 21%[1]. The commonest clinical presentation is hematemesis and melena, at times may present as hematochezia[2]. Mainly UGI Bin children are because of mucosal lesions and Oesophageal varices. Mucosal lesions include esophagitis, gastritis, Mallory Weiss tears, gastric and peptic ulcers. UGIB can be categorized into major or minor bleed based on the presentation. Fresh hematemesis alone, melanemesis with melena or fresh hematemesis with melena predicts major bleeding and requires hospitalisation, compared to a minor bleed, as evidenced by melanemesis or melena alone[3,4]. The presence of hemodynamic instability in

How to site this article: Dhakshayani R V, Balamma Sujatha, Nirmala D, Sumathi B, Bhaskar Raju. Clinical and etiological profile of upper gastro intestinal bleed in children with endoscopic correlation. *International Journal of Recent Trends in Science and Technology.* January 2016; 17(3): 185-188. http://www.statperson.com (accessed 06 January 2016).

children with upper gastrointestinal bleeding indicates massive bleeding. Erosive damage to the gastrointestinal mucosa is the most common cause of bleeding in the western world[5], although, variceal bleed secondary to portal hypertension also occurs very frequently to warrant consideration in most cases with massive bleeding. Vascular malformations are rare causes in children and more difficult to identify[6]. In India, as reported in a few studies, varices secondary to extra hepatic portal hypertension is the most common cause of upper gastrointestinal bleeding[7,8]. Increased practice of self-medication and availability of medicaments over the counter all contribute for the mucosal lesions. A detailed clinical history, physical examination and timely upper gastrointestinal endoscopy (UGIE) is mandatory for accurate diagnosis, treatment and for reduction of the mortality rate. Very limited data's are available from India in this domain. Hence this study was conducted to determine the correlation of UGIE findings with etiological causes of UGIB.

MATERIALS AND METHODS

A prospective descriptive study was conducted between September 2008 and September 2010, after obtaining institutional ethical clearance in the Department of Paediatric Gastroenterology, Institute of Child health, Egmore, Chennai. Consecutive children of age ranging from 3months to 12 years of either sex presenting with hematemesis or melena were included in the study. Children with bleeding secondary to systemic infections, systemic diseases or diagnosed bleeding diathesis are excluded from the study. A detailed history, physical examination and necessary laboratory investigations were done and recorded in a pre-structured proforma. The UGIB was categorised into major and minor based on the presenting symptoms. All the children were subjected to UGIE within 24 hours of bleeding or after stabilisation of the child. Olympus N30 Upper gastrointestinal fibre optic scope fitted with video adapter was used. All the endoscopies were done by paediatric gastroenterologist after obtaining consent from the parents or guardians. The endoscopic findings were recorded in detail and variceal lesions were graded and other predictors of variceal bleeding were recorded. In all cases of variceal bleeding the sclerosant, 3% sodium tetra decyl sulphate was used Fig 1. A volume of 1-2 cc per site was injected per site. The sclerotherapy sessions were repeated with a 3-4 weeks interval till the varices were downgraded to Grade I. In addition they were advised to continue tablet propranolol 1mg/kg/day in 2 divided doses. Children who had non variceal lesions like esophagitis, gastritis and Mallory-Weiss tear were treated with H_2 receptor antagonists and proton pump inhibitors. If the endoscopy turned out to be normal, with the probability of spurious hemat emesis, expert opinion for the source of bleeding in ENT, dental region and haematological disorders was obtained from the specialists concerned. The results were analysed for clinical significance using SPSS software version 15.0.

RESULTS

A total of 155 children were enrolled in the study. Male female ratio was 1.1:1. Age wise distribution of UGIB due to variceal and non- variceal bleed presented in Table 1.Etiological break up of UGIB are: Variceal bleed was 41.9 % (65), Gastritis 27.7% (43), Esophagitis 14.8% (23), Gastric ulcer 3.2% (5), Duodenal ulcer 4 (2.6%), Hiatus hernia 2.6% (4), Unknown etiology 2.6% (4), Mallory- Weiss tear 1.9%, Spurious hematemesis 1.3% (2), Duodenal polyp and AV malformation 0.6% (1) each. Presentation of UGIB is shown in Table 2. Bleeding was major in 52.9 % (82) and minor in 47.1 % (73). Among the 82 of major bleed children the cause was due to Variceal in 65.8% (54) followed by gastritis 14.6 % (12), Esophagitis 8.5 % (7) and others were significantly low. In the73 minor bleed children the commonest cause was gastritis 42.4 % (31) followed by Esophagitis 21.9 % (16), Variceal 15.1 % (11) and the other causes had significantly low percentile. Clinical presentation of UGIB based on etiology is shown in Table 3.A total of 74 (47.7%) children had taken ulcerogenic drugs, of which 46 (62.1%) had UGI bleed due to non variceal causes and in another 28 (18.7%) cases, the drugs were a trigger factor for bleed in previously diagnosed cases of EHPVO. In non- variceal group, in both the major and minor categories gastritis was the predominant lesion involved. The ulcerogenic drug was predominantly paracetamol in most of the cases. 2 of these children had taken steroids in addition to antipyretics. However no significant differences in clinical and endoscopic finding were noticed in those two children.The endoscopic findings of UGIB are shown in Table 4.

Table 1: Age wise distribution of UGIB

Age	Variceal	Non variceal
0-3yrs	7	20
4-6yrs	13	23
7-9yrs	15	19
10-12yrs	30	28
Total	**65**	**90**

Table 2: Presentation of UGIB

Presentation of UGIB	Total	Percentage
Fresh Hematemesis	53	34.2
Dark Hematemesis	55	35.5
Melena	17	11.0
Fresh Hematemesis & Melena	9	5.8
Dark Hematemesis & Melena	20	12.9
Fresh Hematemesis, Dark Hematemesis & Melena	1	0.6
Total	**155**	**100**

Table 3

Sr. No.	Symptom	Variceal	Non variceal	Total No.	Percentage (%)
1	Abdominal distension	40	2	42	27.1
2	Lt. quadrant mass	33	1	34	21.9
3	Abdominal pain	5	56	61	39.3
4	Fever	28	46	74	47.7
5	Pallor	53	36	89	57.4
6	Jaundice	4	0	4	2.6
7	Vomiting	24	34	58	37.4
8	Diarrhoea	2	0	2	1.2
9	Dysphagia	0	2	2	1.2
	Clinical signs				
1	Anaemia	56	42	98	63.2
2	Icterus	4	0	4	2.6
3	Prominent abdominal veins	6	0	6	3.8
4	Splenomegaly	61	2	63	40.6
5	Hepatomegaly	0	4	4	2.6
6	Free fluid	8	0	8	5.2

Table 4: Endoscopic findings of UGIB

Sr. No.	UGI Scopy findings	Total No. (N)	Percentage (%)
I	Variceal	65	41.9
	Grade I Varices	4	2.6
	Grade II/III Varices	43	27.7
	Grade IV Varices	7	4.5
	Congestive gastropathy	6	3.8
	Sclerosed varix	5	3.2
II	Non variceal	90	58.1
	Gastritis	43	27.7
	Oesophagitis	23	14.8
	Mallory- Weiss tear	3	1.9
	Lax LES	4	2.6
	Gastric ulcer	5	3.2
	Duodenal ulcer	4	2.6
	Duodenal polyp	1	0.6
	A. V. Malformation	1	0.6
	Spurious hematemesis	2	1.3
	Normal study	4	2.6
	Total	**155**	**100**

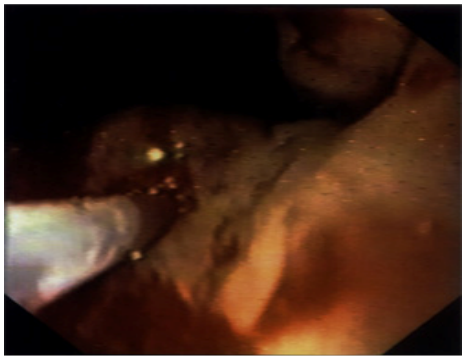

Figure 1: Endoscopic sclerotherapy

DISCUSSION

Most of the study recommends the early UGIE within 24 hours of UGIB. However the Roman Society of Gastroenterologist recommends the same within 16 hrs[9]. In our study UGIE was done within 24 hours of bleeding or after stabilisation of the child as the condition warranted. UGIE at the early with proper clinical examination and detailed history helps the paediatric physician to clinch the diagnosis at ease. The most common indication for the UGIE in developing countries is recurrent abdominal pain[10]. In our study 39.3 % (61) of them had abdominal pain as the presenting symptom. The risk of UGIB with usage of Non-Steroidal Anti-inflammatory Drugs (NSAID) was stated as 7.2 per 100, 00 by Lesko S M[11]. Whereas Kalyoncu D[12] has reported 56% of drug induced UGIB in his study. In our study 46.4 % (74) of children had history of intake of NSAID. UGIE findings in this 74 study subjects were predominately mucosal lesions in 62.2 % (46 n=74) and in the remaining 37.8% (26 n=74) the use of these drugs have triggered the bleeding in the varices individuals. Endoscopy as a screening procedure in varices patients may help in preventing haemorrhage [(1)]. In our study major bleed was predominately due to variceal 65.8% and minor due to gastritis 42.4 % (31) followed by Esophagitis 21.9 %. An Iranian 10 year retrospective study by Rafeey M[13] had 7.15 % of varices, in contrast our study had 41.9%. Similarly Pakistanian study by Khan M R [(10)] and Turkey study by Kalyoncu D[12] has reported 5% and 5.8% of variceal bleeding. Mittal S K[14] observed that varices were the commonest lesions 39.41%), followed by esophagitis (23.73%). Gastritis, gastric ulcer, duodenal ulcer and esophageal ulcers were identified in 7.2%, 12.7%, 0.42% and 0.42% cases respectively. Hassoon A J [2] reported 39% of variceal bleed in his study and was found to be more common in 6-12 years of age. Analysis based on age related UGIB etiology variceal bleeding was most commonly seen in 10-12 years of age and less frequently in 0- 3years of age. Whereas non variceal lesions like esophagitis, gastritis etc. was almost the same in all the age groups.

CONCLUSION

UGIB even though uncommon has to be in detail investigated for the understanding of the etiology. UGIE is an important tool in evaluating UGIB. The single most common cause for UGIB in our study was variceal bleeding 41.9 %, but when collectively considered mucosal lesions (52.8%) in the form of gastritis, esophagitis, gastric ulcers, duodenal ulcers and Mallory-Wiess tear was the leading cause. In Mucosal lesions the important contributing factor is the usage of ulcerogenic

drugs, which is also a triggering agent in variceal bleed. So paediatricians should be cautious while prescribing NSAIDs. Early endoscopy and intervention in the variceal cases is useful in avoiding a massive bleeding episode.

REFERENCES

1. Owensby S, Taylor K, Wilkins T. "Diagnosis and Management of Upper Gastrointestinal Bleeding in Children".JABFM. Jan-Feb 2015; 28(1): 134-45.
2. Hassoon A J, AlMaeeni A A, Matloub H Y. "Upper Gastrointestinal Bleeding in Children".J Fac Med Baghdad. 2012; 54(3): 223-27.
3. Wara P, Stodkilde H. "Bleeding Pattern before admission as guideline for emergency endoscopy". Scand J Gastroenterol.Jan 1985; 20(1):72-8.
4. Wilson ID. Hematemesis, Melena, and Hematochezia. In: Walker HK, Hall WD, Hurst JW, editors. Clinical Methods: The History, Physical, and Laboratory Examinations. 3rd edition. Boston: Butterworths; 1990: Chapter 85.
5. Tanner S. "Portal Hypertension in Pediatric Hepatology by Tanner S"Churchill Livingstone, Edinburgh.1989:293-316.
6. Cheng C L, Lee C S, Liu N J, Chen P C, Chiu C T, Wu C S. "Overlooked Lesions at Emergency endoscopy for acute nonvariceal UGI bleed; Endoscopy 2002;34:27-30.
7. Williams T A. "Gastro intestinal Bleeding - Diagnosis and Management". Indian J Pediatr 1993; 60: 119-129.
8. Oslon A D, Hillemeier A C. Gastrointestinal Hemorrhage. Pediatric Gastrointestinal Diseases, Pathophysiology, Diagnosis and Management; St. Louis, Mosby 1996, 251 - 270.
9. Botianu A M, Matei D, Tantau M, Acalovschi M. "Urgentversus Early Endoscope in High Risk Patients with Acute Upper Gastrointestinal Bleeding: a Comparitive Study in a TeritiaryCenter with a Permanent Endoscopy Call".ROM.J. INTERN. MED. 2013; 51(1): 35-40.
10. Khan M R, Ahmed S, Ali S R, Maheshwari P K, Jamal M S. " Spectrum of Upper GI Endoscopy in Pediatric Population at a Tertiary Care Centre in Pakistan". Open Journal of Paediatrics. 2014; 4: 180-184.
11. Lesko SM, Mitchell A A. "An assessment of the Safety of Pediatric Ibuprofen. A Practioner- Based Randomized Clinical Trial".JAMMA. 1995; 273: 929-33.
12. Kalyoncu D, Urganci N, Cetinkaya F. "Etiology of Upper Gastrointestinal Bleeding in Young Children".Indian Journal of Paediatrics. Sept 2009; 76: 899-901.
13. Rafeey M, Shoaran M, Majidy H. "Diagnostic Endoscopy and Clinical Characteristics of Gastrointestinal Bleeding in Children: A 10 Year Retrospective Study". Iran Red Crescent Med J. Sept 2013; 15(9): 794-7.
14. Mittal S K, Kalra K K, Aggarwal V. "Diagnostic Upper GI Endoscopy for Hematemesis in Children: Experience From a Paediatric Gastroenterology Centre in North India". Indian J Pediatr. Nov- Dec 1994; 61: 651-54.

Source of Support: None Declared
Conflict of Interest: None Declared