



Clinico Etiological Profile of Upper Gastrointestinal Bleeding in Children from Northernmost India, Kashmir: Five Year Experience

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Abstract

Background: Gastrointestinal bleeding in children has a reported incidence of 6.4%. The study is done to look for the clinico-etiological profile of Upper gastrointestinal (UGI) bleeding in children aged up to 18 years.

Methods: This is a prospective, observational study conducted in the Department of Pediatrics, Government Medical College Srinagar, J&K, India from June 2017 to June 2022. Children below 18 years of age presenting with hematemesis and/or malena were included. History, clinical exam, and laboratory tests were undertaken. Upper GI endoscopy was done within 24 hours of bleeding or after stabilization. Bleeding was divided into variceal and non-variceal, depending on the Upper GI scopy findings.

Results: A total of 190 patients were included. 148/190 (77.9%) were in the age group of 06-18 years. Hematemesis was the most common presenting symptom. Bleeding was non-variceal and variceal in 110/190(57.90%), and 80/190(42.10%) cases respectively. Bleeding was major and minor in 102/190(53.5%) and 88/95 (46.45%) respectively. EHPVO was the most common cause of variceal bleeds in 78/80 (97.5%) cases. Major bleed was variceal and non-variceal origin in 68/102(66.7%) and 34/102(33.3%) cases respectively; p-value<0.001. Variceal bleed was more common above 6 years of age (69.2% cases). Anemia was present in 63.2% of patients at the time of presentation. Splenomegaly was clinically evident in 40.6% of cases, 94.7% were due to EHPVO.

Conclusion: UGIB is more common in the 06-18 years age group. It is predominantly non-variceal in origin. Most of the major bleeds are due to variceal etiology. EHPVO and gastritis are the most common cause of variceal and non-variceal bleed respectively.

Keywords: Upper gastro-intestinal bleed, Varices, Extrahepatic portal vein obstruction

Introduction

Bleeding may occur anywhere along the gastrointestinal tract. Gastrointestinal bleeding can be divided into three clinical syndromes: Upper gastrointestinal bleeding (UGIB), Lower gastrointestinal bleeding (LGIB), and bleeding from obscure sources. UGI bleeding is defined as bleeding occurring proximal to the ligament of Treitz. This type of bleeding is characterized by hematemesis and

malena. The causes for this alarming symptom may range from benign and easily treatable to severe life-threatening illnesses. These children constitute 10-15% of referrals to pediatric gastroenterologists. Bleeding from the mucosal lesions is the most common cause of UGIB in the West, whereas, in India, variceal bleeding is reported to be the most common cause (40-95%) of UGIB2-6. Some more

common differential diagnoses for UGI bleed, which should be kept in mind while evaluating a patient include ingested maternal blood in a neonate or ingested epistaxis blood and food sources imitating hematemesis or malena⁷. The objective of this study was to study the clinico-etiological patterns of UGI bleeding in children aged up to 18 years in Kashmir valley.

Methods

This is a prospective, observational study conducted in the Department of Pediatrics, Government Medical College Srinagar, J&K, India from June 2017 to June 2022. All the consecutive patients below 18 years of age who were admitted to our hospital with hematemesis and/or malena during the period were included in the study. Patients who had an obvious nasal bleed, nasopharyngeal pathology, bleeding secondary to systemic infections, or systemic diseases like vasculitis and bleeding diathesis were excluded. All the patients were seen by a pediatrician. Information about the patient's demographic characteristics, co-morbidities, and clinical findings was recorded. A classification of major and minor bleeds was made based on the color of bleed, the quantity of bleed, the presence of a combination of hematemesis and malena, and the presence or absence of hemodynamic instability on presentation. Blood sample for CBC, stool sample for occult blood was taken and ultrasonography of abdomen for liver echotexture, portal vein diameter/pressure, and splenomegaly was done. All the patients underwent upper GI endoscopy within 24 hours of bleeding or after stabilization or as the condition warranted. Olympus N30 upper gastrointestinal fiberoptic endoscope fitted with video adapter was used. All the endoscopies were done by a pediatric gastroenterologist. Bleeding was divided into variceal and non-variceal depending upon endoscopy findings. The procedure was done only after proper informed consent from the parents. Patients received midazolam and ketamine intravenously five minutes before the endoscopy as a sedative agent. Ketamine was repeated once if required. The endoscopy was done after 6 hours of fasting before the procedure. The study is approved by the hospital ethics committee.

Statistics

Frequency is presented as percentages. The Chi-square test is used for non-parametric categorical data. Statistics is done using SPSS versions 25

Results

A total of 190 patients were included in the study. The male to female ratio in UGIB was 1.1:1. Above 6 years of age males were significantly higher than females (ratio 1.4:1 ; p-value < 0.05). UGIB was more common in the age group of 06-18 years (77.9%) than in the 0–5-year age group (22.1%). Hematemesis, defined as the presence of fresh or altered blood in vomitus, was most common presenting symptom, 53.54% of patients presented as major bleeds, and in 46.45%, the bleed was minor. The most common cause of UGIB was non-variceal bleeding in 110/190 (57.90%) cases. 80/190 (42.1%) children had a variceal source, of which 68/190 (85%) had major bleeding and 12/80 (15%) patients had minor bleeding. Among the non-variceal bleeders, 34/110 (31%) and 76/110 (69%) patients had major and minor bleed respectively. Of the non-variceal causes of major bleed, mucosal lesions of the GIT were the predominant cause. Gastritis (41.3%) followed by esophagitis (11.8%) and Mallory-Weiss tear (11.8%). The most common etiology of variceal bleed was EHPVO in 78/80 (97.5%) patients. Intrahepatic cause of variceal bleeding was seen in 02/80 (2.5%) of cases. Variceal bleed was more common above 6 years of age (69.2% cases). UGIB due to non-variceal causes accounted for 47.7% of the cases below 6 years and 52.3% above 6 years of age; p-value 0.48. Major bleeds were predominantly from varices, whereas the minor bleeds were predominantly non-variceal. This observation was found to be statistically significant; p value < 0.001). Of the 190 patients, abdominal distension was presenting complaint along with UGI bleed in 25 patients (27.1%), of which 23 were variceal bleeders and 2 were non-variceal bleeders. Abdominal pain was the complaint in 39.3% of cases. 47.7% of the patients had fever on presentation. 37.4% of cases presented with vomiting. Anemia was present in 63.2% of patients at the time of presentation. 2.6% each had icterus, hepatomegaly, and prominent abdominal veins were seen in 3.8% cases. Splenomegaly was clinically evident in 40.6% of cases, 94.73% were due to EHPVO and 5.26% cases had non-variceal causes for the bleeding.

Discussion

This study was conducted in our hospital to understand the clinico-etiological pattern of UGIB in children below 18 years of age in Kashmir valley. We included 190 children who presented with the primary symptom of overt hematemesis and/or melena. No gender predilection was observed in the study, the male: female ratio being 1.1:1. Children above 6 years of age showed male preponderance (M: F ratio 1.4:1). 74/110 children had at least one episode of UGIB before the study period. Among them, 88.3% had varices as the cause of the recurrent bleed. This is consistent with a study by Mittal SK, et al⁸, who in his review of 70 cases of EHPVO, reported that these children have a minimum of 3 to 5 episodes of bleeding before the presentation. A similar observation was made by Fonkulsrud⁹. Major bleeds were the mode of presentation in 53.5% of patients and minor bleeds in 46.5% of cases. About 65.1% of cases of major bleeds were due to varices, consistent with observations made by Tanner, et al¹⁰, Boyle JT et al¹¹, and Robert Squires et al¹². Minor bleeds were mostly due to non-variceal causes (84.7%). This is comparable to observations by Robert Squires, et al¹² and Abraham Bagoch, et al¹³. Splenomegaly was present in 40.6% of cases and out of the 96.8% had varices as the source of bleeding, the incidence is consistent with that observed by Webb, LJ et al¹⁴. Anemia was observed in 63.2% of patients. Prominent abdominal veins were seen in 6.3% of cases of EHPVO. Similar findings were observed by Tanner¹⁰ and Webb and Sherlock¹⁴. In our study, it was found that 80/190 cases were due to variceal hemorrhage, and EHPVO was found to be the most common cause of the variceal bleed. Of the non-variceal bleeders, gastritis was seen in 60/110 (54.5%) of patients, 9% had Mallory-Weiss tear, 5.4% of patients each had gastric and duodenal ulcers. Duodenal polyp was seen in 02 patients. Cadranet, et al¹⁵ in their study of endoscopy of GIT in children found that GI bleeding was the commonest indication for endoscopy. Of the UGI bleeds, esophagitis (50%) was the most frequent lesion followed by gastritis (14.2%), gastric ulcer (14.2%), duodenitis (14.2%), and varices (7.4%). Our study showed gastritis as the predominant mucosal lesion. The causes of UGIB in children vary depending upon age and geographic settings. In western developed countries, the most common

reported causes are esophagitis, peptic ulcers, and gastric erosions, we observed varices as the commonest cause of major UGIB followed by gastritis and esophagitis, comparable to the S.K Mittal study from North India. After necessary investigations and endoscopy, the diagnosis was arrived in 96.1% of cases. The diagnosis could not be reached in 2.1% of cases, despite adequate investigations which was comparable with other studies¹⁶

Conclusion

UGIB is more common in the 06-18 years age group. It is predominantly non-variceal in origin. Most of the major bleeds are due to variceal etiology. EHPVO and gastritis are the most common cause of variceal and non-variceal bleed respectively.

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