ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCES
SCHOOL OF MEDICINE
DEPARTMENT OF PEDIATRICS AND CHILD HEALTH

RETROSPECTIVE ANALYSIS ON MAGNITUDE AND RELATED FACTORS OF UPPER GASTOINTESTINAL BLEEDING IN PEDIATRICS PATIENTS SEEN AT TIKUR AMBESSA SPECIALISED HOSPITAL, EMERGENCY DEPARTMENT, ADDIS ABABA, ETHIOPIA, 2024.

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RESEARCH PROPOSAL SUBMITTED TO ADDIS ABABA UNIVERSITY, COLLEGE OF HEALTH SCIENCES, SCHOOL OF MEDICINE, DEPARTMENT OF PEDIATRICS AND CHILD HEALTH AS A PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE SPECIALTY CERTIFICATE IN PEDIATRICS AND CHILD HEALTH.

MARCH, 2024
ADDIS ABABA, ETHIOPIA

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LIST OF ABBREVIATIONS AND ACRONYMS

AAU: Addis Ababa University

ANVUGIB: Acute non variceal upper gastrointestinal bleeding

CI: Confidence interval

DU: Duodenal ulcer

DM: Diabetes mellitus

EGD: Esophagogastroduodenoscopy

GI: Gastrointestinal

GU: Gastric ulcer

HTN: Hypertension

NSAIDs: Non-steroidal anti-inflammatory drugs

NVB: Non variceal bleeding

PHG: Portal Hypertensive Gastropathy

OR: Odds Ratio

TASH: Tikur Anbessa Specialized Hospital

UGIB: Upper Gastrointestinal Bleeding

UK: United kingdom

USA: United States of America

SUMMARY

Background: Upper GI Bleeding is one of a common reason for emergency hospital admission worldwide and it's associated with significant morbidity and mortality (1). Upper gastrointestinal area is an area which extends from the oral cavity up to the ligament of Treitz. Upper gastrointestinal bleeding patients can present with passage of fresh bright vomiting, coffee ground colored vomiting and when it's massive with bright colored stool (2).

Objective: This study aimed to determine the magnitude and related factors of upper gastrointestinal bleeding in pediatric patients seen at Tikur Anbessa specialized hospital from December 2018 – December 2023

Method: Hospital based retrospective cross sectional study was conducted in TASH with all selected 125 patients who attended to emergency clinic from December 2018 – December 2023,

Result: Of the total 125 cases, 50/125 (40%) were new cases and 75/125 (60%) were known cases on follow up at gastrointestinal clinic. The most common age group was 5-10 years which accounted for 49.4%. The participants' mean age ± SD was 9.97 ± 4.95 years. **Of the total 125 cases, males were (67, (53.6%%)) and (58, (46.4%)) were females with M:F ratio of 1.2:1. A total of 84/125 (67%) presented with isolated hematemesis, 41/125 (33%) with a combination of melena and hematemesis and no patients identified with Isolated Melena, and 69/125(55.2%) patients was transfused with blood. Out of identified causes the most commonly found source of bleeding was peptic ulcer disease which is 52/125 (40.0%) followed by Portal Hypertension which was 38/125 (30.4%), and Bleeding Disorders 16/125 (12.8%), Portal vein thrombosis secondary to Arteriovenous malformation in 5/125(4%) and 10/125(8%) cause was not found. Endoscopy was done for 36/125(28.8%) patients and the commonest findings Variceal disease secondary to Portal hypertension in 22/36(61.1%)**

Keywords: Upper GI Bleeding, Magnitude, Related factors, Tikur Anbessa specialized hospital, Ethiopia

1. INTRODUCTION

1.1. Background

1.1.1. Magnitude of UGIB

UGIB is one of common reason for emergency hospital admission worldwide and it's associated with significant morbidity and mortality (2). The incidence of upper gastrointestinal bleeding was found to be 48-160/100,000 population per year in a study which is done in United States of America and it was twice higher in males than females (3).

The causes and outcomes of UGIB differ geographically depending on demographic differences and socioeconomic status of local population (5)

1.1.2. Causes of UGIB

The causes of UGIB can be categorized by age groups. In newborns the predominant causes include coagulation disorders such as vitamin K deficiency, cow milk intolerance, gastritis from stress, sepsis, and trauma from the placement of nasogastric tubes (6)

From 1 month to 1 year of age, the most prevalent causes are caustic ingestions, duplication cysts, foreign body ingestion, stress esophagitis, medication-induced bleeding (e.g., NSAID use), and peptic ulcer bleeding (6)

From 1 to 5 years of age, causes include erosive esophagitis, gastritis, caustic ingestions, peptic ulcer bleeding, varices, and vomiting-induced bleeding, for example, from a Mallory-Weiss tear (6)

From ages 5 to 18 years, bleeding can arise from coagulation disorders, gastritis, erosive esophagitis, peptic ulcer disease, caustic ingestions, and vomiting-induced bleeding (6)

Globally, the etiology of UGIB differs significantly based on variations in patient population and the presence of comorbid conditions. In the Middle East and Asia, the causes of UGIB include peptic ulcer bleeding (24%), varices secondary to viral hepatitis (23%), erosive esophagitis (0.2%), and vomiting-induced hematemesis (0.2%). In North and South America, peptic ulcer

bleeding (44%), varices (11%), vomiting-induced hematemesis (1.2%), and erosive esophagitis (0.6%) comprise the majority of UGIB cases. (5)

1.1.3. Risk Factors

Risk factors for UGIB vary. NSAID use and Helicobacter pylori infection should be considered in children with severe UGIB. The observed risk of UGIB with NSAIDs is 7.2 per 100,000, based on a study of 55,785 children. (7)

The risk of developing UGIB with NSAID use is greater in the 2 month old to 7 year old age group (odds ratio [OR], 14.1) versus the 8 to 16 year old age group (OR, 3.4). H. pylori has been found in up to 49% of children presenting with UGIB. (8). This infection represents an important risk factor, especially in children with hereditary hemorrhagic disorders such as hemophilia. Other risk factors include peptic ulcer disease, portal hypertension or varices, and bleeding disorders (8). Children who require mechanical ventilation during the course of their hospitalization have a higher incidence of UGIB if they also experience a high pressure ventilator setting or organ failure (9). Other risk factors include trauma, shock, and operative procedures 3 hours long (10).

1.1.4. Associated Conditions (Comorbidities)

Multiple disorders can contribute to the development of an UGIB in pediatric patients. Hematologic disorders, such as hemophilia A and B and Von Willebrand disease, predispose patients to UGIB secondary to the increased risk of bleeding mucosal membranes. (11). Conditions such as biliary atresia, portal vein thrombosis, primary sclerosing cholangitis, autoimmune hepatitis, Budd-Chiari syndrome, and cystic fibrosis predispose patients to UGIB through the development of portal hypertension, which can lead to the formation of varices, a known cause of UGIB (12)

1.2. Statement of the Problem

Acute UGIB is a medical emergency having significant impact on mortality and morbidity. The worldwide mortality rate for UGIB in children can range from 5% to 21% (5).

A cross sectional study at Shams University in Egypt on 100 children's revealed 54% of patients were females, median age were 4 years and the commonest presentation were hematemesis

accounting 65% of cases and the commonest diagnosis were H.pylori associated gastritis which accounted around 23% (40)

A retrospective study in Tunis Hospital of children over 8 years revealed gastritis was commonest cause in newborn and infant (55%) and children age group (50%) (46)

A 6 years retrospective study at Cote di voire, Cocody Hospital found that the commonest cause for UGIB was duodenogastric bile reflux which accounted 23%, M: F ratio was 0.88, Gastric biopsy to detect H. Pylori was done in 23% of patients (48)

1.3. Significance of the study

Most of the data about pediatric upper GI bleeding is from high income countries {5}. There is no previous published literature regarding the prevalence and associated factors of UGIB in pediatric patients in our institution or Ethiopia. This research attempted to provide insight about the Magnitude and Related factors of pediatric UGI Bleeding in our institution or Ethiopia.

1.4. Literature review

1.4.1. Study in Africa

In a cross-sectional study conducted at Shams University, Cairo, Egypt, where 100 children were included. 47 males and 54 females were included. Their ages ranged from 3 months to 15 years, with a median age of 4 years.65% presented with hematemesis only, 7% presented with melena only, and 28% presented with hematemesis and melena. Helicobacter pylori (H. pylori) gastritis (23%) and reflux esophagitis (11%) are the most common diagnoses. Comorbidities were present in 13% of the patients (cerebral palsy, beta thalassemia, congenital heart disease, and others). History of drug intake was positive in 11 patients (6% NSAIDs , 4% antiepileptics, and 1% steroids). One patient had a family history of peptic ulcer disease, and another had a family history of gastric cancer. The EGD done during follow up showed a source of bleeding in 62%. The source of bleeding was localized to the esophagus in 18%, stomach in 25%, duodenum in 7%, and gastroduodenal in 12%. The most common diagnoses were gastritis in 31% (H. pylori-related in 23% and non-specific in 8%) and gastro-esophageal reflux disease (GERD) in 13% (with significant hiatus hernia {40}

In a retrospective review of the medical records of children referred to the Pediatric Gastroenterology Department of The Tunis Hospital of Children in Tunisia for upper gastrointestinal bleeding. The children were divided into three groups; G1: neonates; G2: infants; G 3: children and adolescents. The study involved 614 children's visited ED over 8 years. The etiology was not ascertained in 20.68% of cases. G1 included 125 newborns: 24 with no identified causes, 97 mucosal lesions (isolated or associated); two ulcers and two tumours. G2 and G3 included respectively 205 infants and 289 children. Toxic drug intake was recorded in 140 out of 489 patients. Endoscopy was normal in 101 cases. Peptic esophagitis was recorded in 27.8% of G2 infants versus 10% of G3 children. Gastritis was recorded in 55.6% of G2 infants versus 41.9% of G3 children. Peptic ulcers were reported in ten boys. Mallory Weiss tears and variceal lesions were found in respectively eleven and ten cases. {**46**}

In a retrospective study done at Cocody Teaching Hospital in Abidjan, Ivory Coast between over 6 years, the main cause for UGIB was duodenogastric bile reflux in 23.5% cases. Patient ages ranged from 6 months to 15 years and M/F sex ratio was 0.88. Endoscopy was normal in 43% of patients. Gastric biopsy to detect Helicobacter pylori was performed in 23% of patients. {**48**}

In a retrospective study done at Soba University Hospital, Khartoum 113 children were enrolled; the commonest presentations were hematemesis (24%), portal hypertension (21%), abdominal pain (16%) and vomiting (15%). Diagnoses included esophageal varices (16%), gastritis (7%) and hiatus hernia (6%). {**50**}

1.4.2. Worldwide study

In a Nationwide emergency department sample retrospective study done at 3 universities in USA and 1 teaching hospital in UK from 2006 – 2011, to describe the epidemiology and trends in pediatric gastrointestinal (GI) bleeding associated emergency department (ED) visits in the U.S. there were an estimated total of 437, 283 ED visits associated with diagnosis of GI bleeding. Specifically, there were 88,675 cases of upper GI bleeding, 132,102 cases of lower GI bleeding and 217,008 cases of unspecified GI bleeding. GI bleeding-associated ED visits increased from 82.2/100,000 children in 2006 to 93.9/100,000 children in 2011 (14.3% increase). The rate of increase was chiefly noted for lower GI bleeding (31.3%) followed by unspecified GI bleeding (10.4%) with a relatively minor increase in upper GI bleeding (1.1%). The greatest number of

visits occurred in children 15 – 19 years of age (39.2%). A majority of patients underwent routine discharge (80.8%). {21}

In a case crossover study conducted in France the incidence of UGIB in children was 1 to 2 in 10,000 per year. This study showed a female-to-male ratio of 1.2:1. Symptoms of hematemesis was present in 96.6%, melena in 14.1%, and hemorrhagic shock in 2.8%. Among the population in this study, 11.3% had a personal history of ulcer or prior UGIB, 5.7% had portal hypertension, and 8.5% had a relevant medical history. An 11.3% in this study required transfusion {29}

In a multicenter 10 year retrospective study from 4 tertiary referral centers in China, of the 1218 children studied, the commonest cause of UGIB was erosive gastritis (33.5%), followed by duodenal ulcer (33.5%) {22}

From a two center study from tertiary GI centers of Kolkatta, Eastern India, on any changing trend in the etiology and outcome of pediatrics UGIB, 180 children were evaluated with a predominant cause of gastroduodenal ulcer (60%) followed by variceal bleeding (19.4%), vascular lesion (2%), Hyperplastic an thral polyp in 1.7% {23}

On retrospective study done at Knoxville, Tenessee, USA 23 children were treated for massive upper gastrointestinal hemorrhage for 10 years. Each required blood transfusions to stabilize vital signs. 5 cases (22%) were due to portal hypertension secondary to portal vein thrombosis, 2 (8.66%) were due to portal hypertension secondary to hepatic parenchymal disease, 1 case (60%) due to portal hypertension secondary to suprahepatic venous obstruction , 2 (60%) due to aarterial anomalies 2 (8.6%) are due coagulation defects, 2 (8.6%) due to steroid stress ulcers, 2 (8.6%) of them have uncomplicated peptic ulcer, 2 (8.6%) due esophagitis and 7 (60%) have unknown etiology which are newborns {24}

A retrospective chart review was made at Jackson, USA of 2569 patients. The most common presentation was hematemesis (73.4%). Melena was associated with low hemoglobin levels and higher transfusion rates. A source of UGIB was found in 57.0%, no cause in 11.4% and a questionable cause in 29.7%. {26}

In a retrospective single-institution study at Tertiary Hospital in United Kingdom on children (<16 years) who presented with acute UGIB over a period of 5 years, A total of 32 children (17 males, 15 females) were identified with a total median age at presentation of 5.5 years. 75% of patients presented as an emergency. A total of 60% presented with isolated haematemesis, 25% with isolated melaena and 15% with a combination of melaena and haematemesis. On admission, the mean hemoglobin of patients who presented with isolated haematemesis was 11 g/dL, those with isolated melena 9.3 g/dL and those with a combination 7.8 g/dL. Blood transfusion was required in 3/19 with hematemesis and 3/5 with hematemesis and melaena. A total of 19/32 underwent upper gastrointestinal endoscopy. The commonest causes were esophageal varices (5/19); gastric vascular malformation; duodenal ulcer (3/19); esophagitis (5/19); and gastritis +/– duodenitis (3/19). A total of 13/32 patients did not undergo endoscopy and the presumed etiology was a Mallory–Weiss tear (4/13); ingestion of foreign body (2/13); gastritis (3/13); viral illness (1/13); unknown (2/13). {**27**}

In a population based cross over study in NSAIDs as risk factor for UGIB in France on age 2 month to 16 years in the 4 week period prior to bleeding, 79.1% of children had taken at least one drug. 83 children (46.9%) had taken at least one NSAIDs at some point during these 4 weeks, which was Ibuprofen in 70% of cases, Aspirin in 31% and another NSAIDs in 11%. Other NSAIDs used were Fenamate, Ketoprofen, Flurbiprofen and Naproxen. The 3 to 7 year old age group was the most exposed to NSAIDs. {**30**}

On a 7 year retrospective study performed in St. Mary Children's Emergency Hospital, North Eastern Romania, out of 103 visits, male to female ratio were 1.2:1. 44% patients presented with hematemesis, 3% melena and 25% had both. Erosive esophagitis were the most common cause identified accounting 34%, followed by duodenitis and duodenal ulcer accounting 11% each, H.pylori was the most common risk factor identified in 36.9% followed by NSAIDs consumption (17.5%) {**31**}

In a retrospective cohort review of the medical records of children with GIB in the Pediatric Department at Salmaniya Medical Complex, Bahrain, between 1995 and 2022, A total of 250 patients were included in this study. The median incidence was 2.6/100000 per year (interquartile range, 1.4 - 3.7) with a significantly increasing trend over the last two decades ($P < 0.0001$). Most patients were males (57.6%). The median age at diagnosis was 9 years (5–

11years). The age group 10-18 years accounted 42%, 5-9 years accounted 32% and 0-4 accounted 23%. The common cause of UGIB was gastritis (28%), undetermined causes were higher in the 10-18 years, esophageal varices and foreign body were common in the 0-4 years group, 15.6% patients had one or more associated diseases. The common associated diseases were GERD (2.8%) and celiac disease (2.8%), followed by sickle cell disease (5, 2%), and autoimmune hepatitis (1.6%). Other associated diseases were cerebral palsy (1.2%), mental retardation (1.2%), biliary atresia (0.8%) {**32**}

In a retrospective study done in Japan in patients with Non variceal UGIB on 36 patients over 14 years, 83% were male, Median age was 5 years (0–17) , Commonest presentation were Hematemesis 56%, followed by Melena 18 (50%), Abdominal pain 15 (42%), Bloody material found in gastrostomy drain 4 (11%), Shock 3 (8%), Loss of consciousness 2 (6%). Endoscopic and Clinical diagnosis revealed causes of UGIB as Esophagitis 3 (8%), Gastritis 10 (28%), Gastric ulcer 9 (25%), Duodenitis 3 (8%), Duodenal ulcer 9 (25%), Others 2 (6%), unidentifed 6 cases (17%) {**34**}

In a prospective study on clinico etiological pattern of upper gastrointestinal bleeding in children in the age group 5-18 years, at a tertiary care center in central India, between January 2011 and August 2012, of a total of 112 patients included, UGIB was most common in the age group 5-10 years (71.4%), followed by 10-14 years (26.8%). Hematemesis is the most common presenting symptom (75%) followed by both hematemesis and melena (25%). The most common causes of UGIB were esophageal or gastric varices (91.1%) followed by erosive gastritis (5.3%), gastric ulcer (1.8%) and esophagitis (1.8%). {**36**}

In evaluation of children younger than two years old admitted to pediatric emergency department with UGIB at Sisli Etfal Training and Research Hospital in Istanbul, Turkey, 34 children aged < 2 years with upper gastrointestinal bleeding were studied. The result of the study were (73.5 % male, 26.5 % female) with a median age 12.3 months (1.5–24 months). 30 patients (88 %) had an underlying disease. 21 patients (56 %) had a history of aspirin or nonsteroidal anti-inflammatory drugs intake. Endoscopic findings were pathological in 85% of patients. Out of 24 patients with erosive gastritis, 19 was having history of drug intake, 2 patient with Mallory Weiss syndrome was having Acute gastro enteritis, 1 patient with stress gastritis was having Type 2 DM, 2 patient with sepsis, 1 patient with tyrosinemia and 1 with portal vein thrombosis was having esophageal

varices, 2 with late onset hemorrhagic disease of new born and 1 patient with hemophilia was having no underlying endoscopic finding {37}

In a cross sectional study on Etiology of gastrointestinal bleeding in children referred to pediatric wards of Mashhad hospitals, Iran of a total 113 study children, 61 (54%) were male and 52 (46%) were female. The results of this study showed that the most important causes of bleeding in upper GI among all admitted patients were prolapse gastropathy (18.6%), esophagitis (15.9%) and esophageal varices, gastritis, and coagulopathy (7.1% for each) {38}

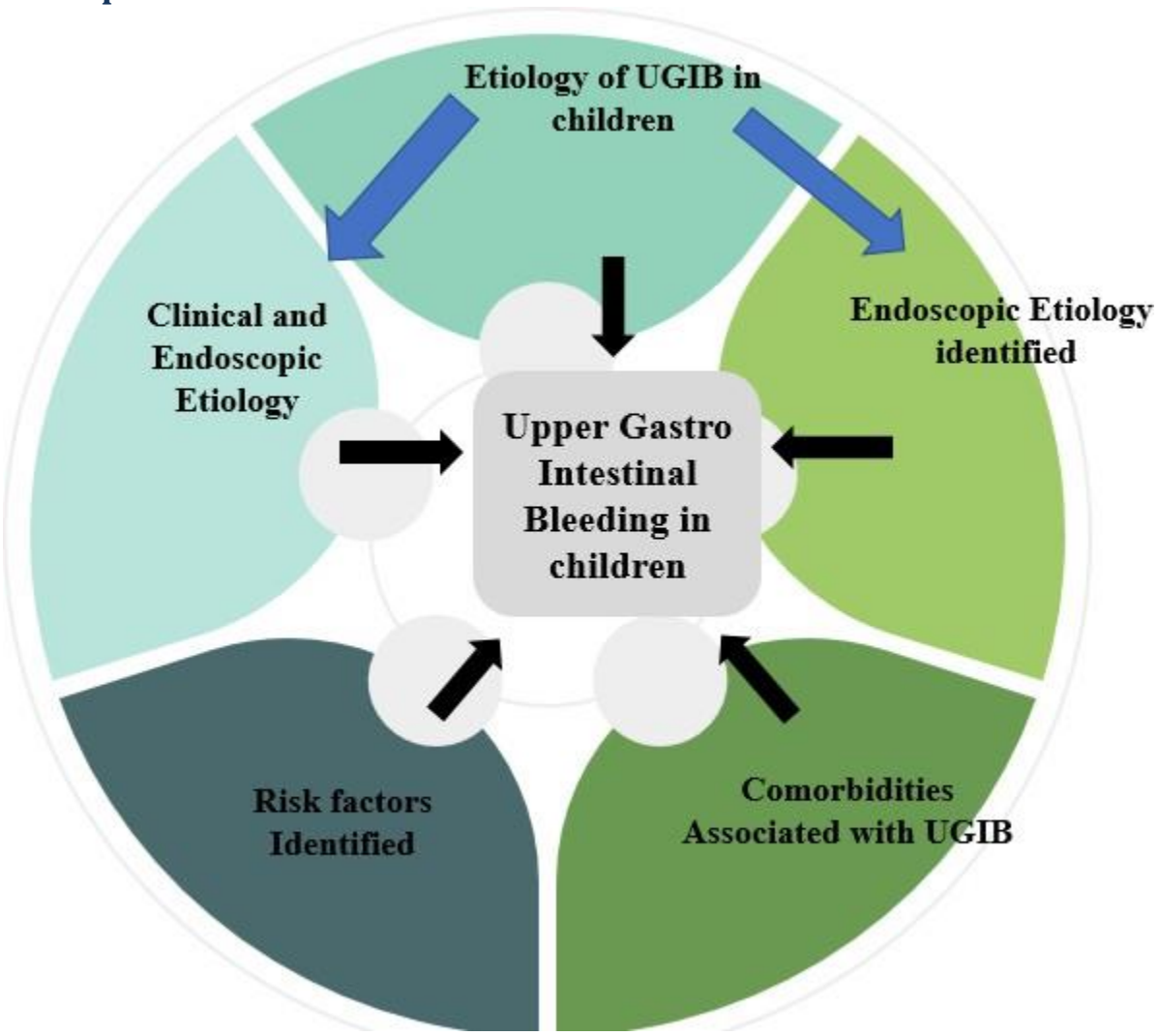
On a retrospective review of pediatric emergency visit in Hong Kong, 76 patients were admitted with boy to girls ratio of 2.6:1, Median age of presentation were 13.5 years. The most common cause of UGIB was Duodenal ulcer accounting 75% and Gastric ulcer in 10.5%. The most common risk factor identified were H.pylori (55%) followed by medications (20%) {39}

In prospective study done in Kashmir India, The most common causes was Esophageal varices in 36 patients (31%) followed by duodenal ulcer in 31 patients (26.7%), Mallory Weiss tear in 8 patients (6.9%), gastric ulcer in 6 patients (5.2%), gastritis in 6 patients (5.2), esophagitis in 5 patients (4.3%), and duodenitis in 4 patients (3.4%). Endoscopy was normal in 19 patients (16.7%). {40}

In a retrospective cross sectional study by Haroon et al in 2012 from Iraq on 58 patients, hematemesis was the most common mode of presentation accounting 58%, followed by melena or hematochezia (5.2%). The most common etiology was erosive esophagitis accounting 39% followed by gastric erosions (19.6%) {41}

In another retrospective study on children with UGB admitted to emergency clinics of Istanbul Health Sciences University Kanuni Sultan Suleyman Research and Training Hospital evaluated between January 2014 and August 2017. Of the 198 children, 14.6% had non-steroid anti-inflammatory drug (NSAID) history, and 12.6% had chronic liver disease. They detected esophagitis, esophagus varices and peptic ulcer with upper gastrointestinal endoscopic evaluation during follow up after emergency visi(47%, 11.1%, 18.1%, respectively). Helicobacter pylori was found in 61.6% of patients. {42}

Conceptual framewo



2. OBJECTIVE

2.1. General objectives

- To determine the magnitude and related factors of UGIB in pediatrics patients seen at TASH Emergency Department from December 2018 – December 2023

2.2 Specific objectives

- To determine the magnitude of UGIB among patients seen at pediatric emergency unit of TASH from December 2018 – December 2023
- To determine the related factors of UGIB in patients seen at TASH from December 2018 – December 2023

3. METHODS AND MATERIALS

3.1. Study area

The study was conducted at Tikur Anbessa Specialized Hospital, from August 2013 to March 2024 g.c.

Tikur Anbessa Specialized Hospital is found in the capital city of Addis Ababa at Lideta sub city. The hospital has been opened in 1972 e.c, and the largest referral hospital in the country, and serves approximately 370,000- 400,000 patients in a year but the exact number is not known. It is one of the largest teaching hospitals in the country providing eight undergraduate and over 70 post graduate programs. Pediatric services started as a specialized health service provision with the establishment of the Ethio-Swedish Pediatric Clinic (ESPC) at the former Princes Tsehai Memorial Hospital under the headship of Professor Edgar Mannheim. The ESPC were established in 1957. In 1966 the Department of Pediatrics was established in the Faculty of Medicine, AAU. Pediatric residency program was started in Ethiopia at AAU in 1979 with the objectives of producing Ethiopian specialists to meet the high demand of patient care and teaching staff.

3.2. Study Design

Five-year an Institution-based retrospective cross-sectional study was employed from data collected from HMIS, I Care software and other patient data registries.

3.3. Study Period

The study was conducted from August 2023 to March 2024.

3.4. Population

3.4.1. Source Population

- All pediatrics patients seen at emergency ward, TASH during the study period.

3.4.2. Study Population

- All patients with diagnosis of UGIB at emergency, seen during the study period.

3.5. Inclusion and exclusion criteria

3.5.1. Inclusion Criteria

- All children with UGI bleeding age < 18 years

3.5.2. Exclusion Criteria

- Incomplete data in the document

3.6. Sample Size Determination

The required sample size of eligible patients for the study will be determined by using a single population proportion formula.

- **$n = za/22 \times p\ (1\text{-}p)/d^2$**

Where: n = the desired sample size

P= 50% (as the prevalence of UGIB in our setup is unknown)

d =5% (maximum margin of error the researcher is willing to allow)

Z =1.96 (standard normal deviation value corresponding to 95% confidence level)

n= (1.96)2*0.50(1-0.50) =**384**

(0.05)2

The total number pediatrics patients with UGIB seen at TASH, emergency department over 5 years were 162. So, since this figure is below 10,000, I'll have used the following correction formula for the sample size determination:

- **$S = n/ (1 + n/N)$**

n = sample size for population of size

N = number of UGIB in our emergency department visit over 5 years which was 162

S=384/ 1+384/162) =144.6

S=114 adding 10 % (11.4) for non-response rate, Therefore, the required sample size of this study is 114+11= **125**.

3.7. Sampling Technique

- All relevant data was collected from the medical records of patients by conventional technique. Data extracted from patient's medical charts was coded, cleaned and the registry was entered into computer using SPSS version 29 software program for further analysis. Simple descriptive statistics was used to characterize the variables. And further analysis was conducted using binary logistic regression. Odds ratio with 95% confidence interval and statistical significance was declared at p-value of < 0.05.

3.8. Variables of the study

3.8.1. Dependent Variable

- Etiology
- Risk factors
- Comorbidities

3.8.2. Independent Variables

- Sociodemographic factors
- Clinical Data of patients

3.9. Operational Definition

Upper gastrointestinal bleeding: is gastrointestinal bleeding in the upper gastrointestinal tract, commonly defined by clinical manifestations of hematemesis, melena or hematochezia or as bleeding arising from esophagus, stomach, or duodenum diagnosed during endoscopy.

3.10. Data Collection Instrument

3.10.1. Instrument

Structured questionnaire was used to reach the objectives. It was developed and adapted from other related researches in a way that addressed the objectives of the study

3.10.2. Data Collection Methods

Questionnaire was prepared in English version adopted and was modified from different literatures was used to collect data from patients chart. Patient MRN was taken from HMIS books and given to chart room staffs to get patients charts.

3.11. Data Quality Control

Pre - test was carried out on 5% from actual sample size who are fulfilled the criteria prior to the actual data collection, which is out of the study area. This initial study was conducted to test the content applicability, clarity and arrangement of the items needed for each questionnaire. After pretest unclear question was changed or corrected.

3.12. Data Processing and Analysis

Data was checked, cleaned and entered in to SPSS version 29.0 software for analysis. Incomplete and inconsistent data was replaced by other questioner for analysis. The result of the descriptive statistics was expressed as percentage and frequency. Associations between independent variables and dependent variables was analyzed first using bivariate analysis to identify factors which are significantly associated with the outcome variable. The magnitude of the association between the different independent variables in relation to dependent was measured and 95%confidence interval (CI) and P values below 0.05 was considered statistically significant.

3.13. Ethical Consideration

The study proposal will be submitted to department of pediatrics and ethical clearance will be issued by the department of pediatrics and college of medicine and health sciences.

3.14. Dissemination Plan

The results of the study will be presented to Addis Ababa University, college of medicine and health science and department of Pediatrics and child health. After research defense the manuscript will be sent for publication. The study abstract will be presented in associations like Ethiopian Pediatrics Society (EPS) and the summary of the thesis will be submitted to the international or national peer reviewed journal for publication.

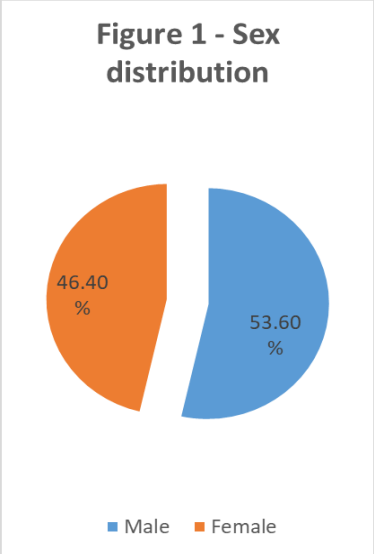
7 Result

During the study period, from August 1st to December 30, 2024, 125 patient charts were identified from the register HMIS and retrieved from patient chart. All the 125 cases had both clinical and pathological diagnosis of UGIB and were included in the analysis.

7.1 Demography

Thus, the study population included 125 cases of UGIB in children. 50/125 (40%) were new cases and 75/125 (60%) were known cases on follow up at gastrointestinal clinic.

Out of 125 patients 67/125 (53.6%) were male and 58/125 (46.4%) were females with a M: F = 1.2. The age ranges was from 3 – 15 years. With a mean age of 9.71 years ± 4.95 years (Mean age in boys were 9.64 years ± 4.57 years and mean age in females were 9.78 years ± 4.68 years). The most common age group was 5-10 years which accounted for 49.4%. There was a great variation between age range and sex ratio in the different age group. M : F ratio was 1.6 : 1 in 0 - 5 age group, 1.1 : 1 in age 5 -10 years and 1 : 1 ratio in age above 10 years. The age range and



sex distribution is mentioned table 1.

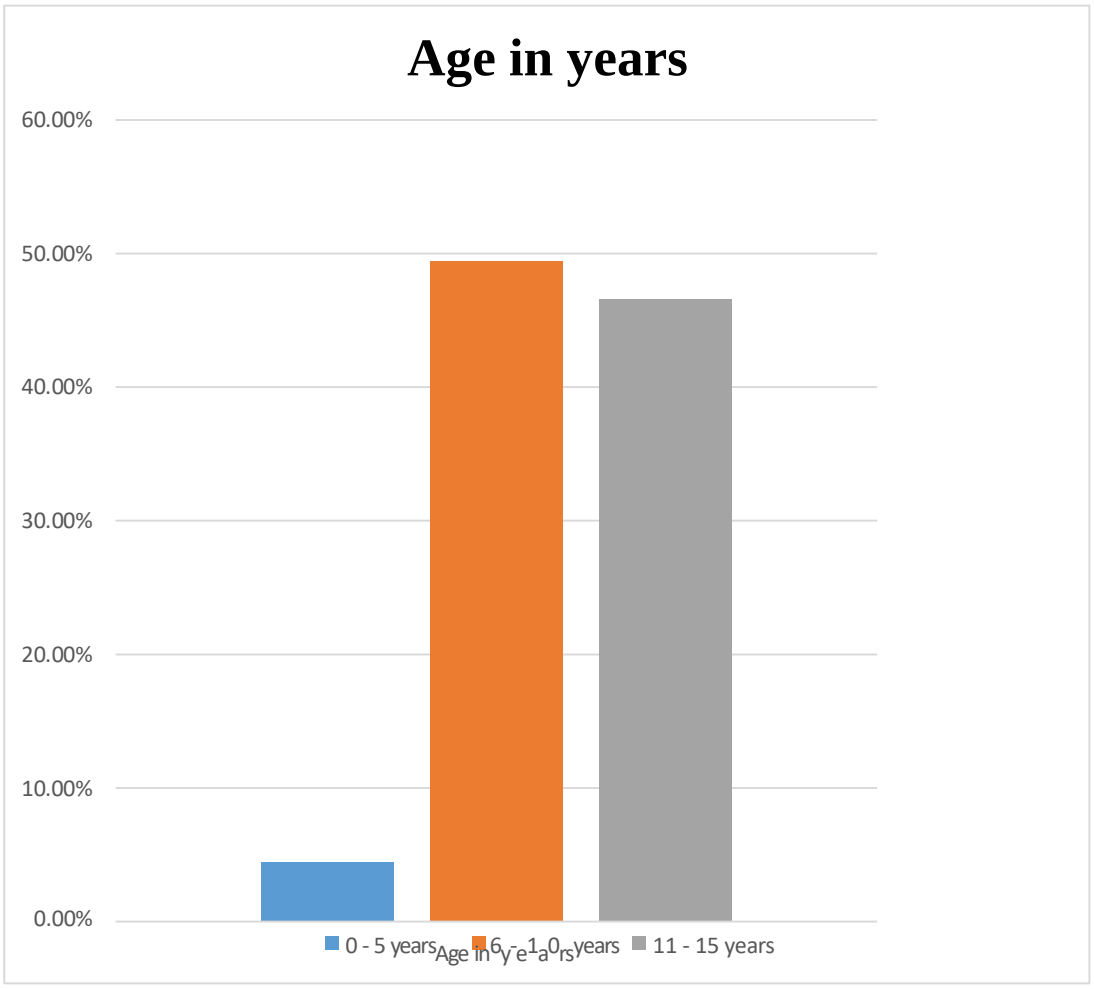
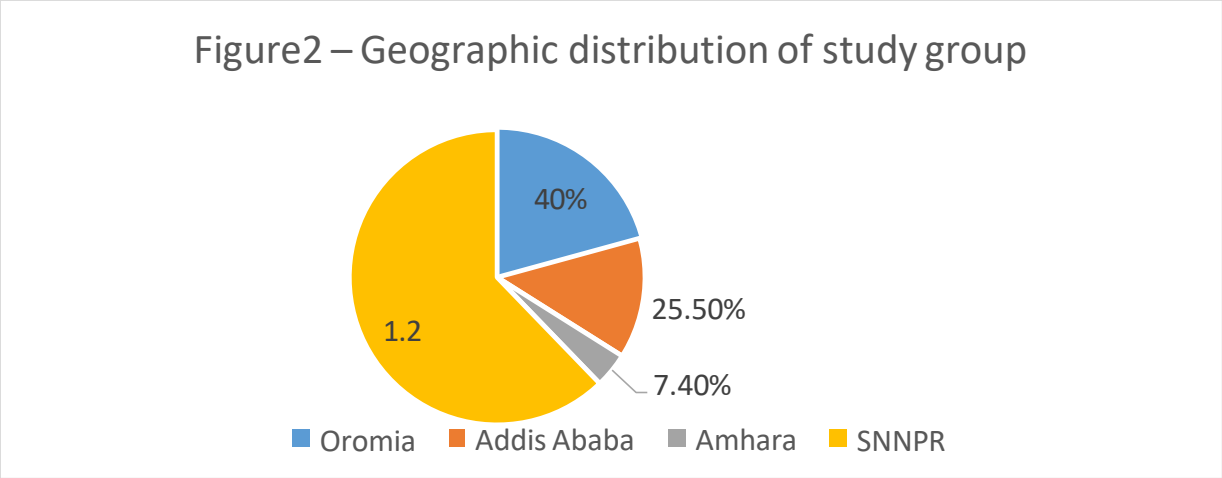


Table 1. Distribution of sex among Age groups.

Age in years		Sex of patient						M : F ratio
		Male		Female		Total		
		Count	%	Count	%	Count	%	
Age in years	0 to 5 years	3	5.5%	2	3.4%	5	4.45%	1.6:1
	6 to 10 years	35	52.3%	27	46.5%	62	49.4%	1.1:1
	11 to 15 years	29	50.0%	29	50.0%	58	46.6%	1:1

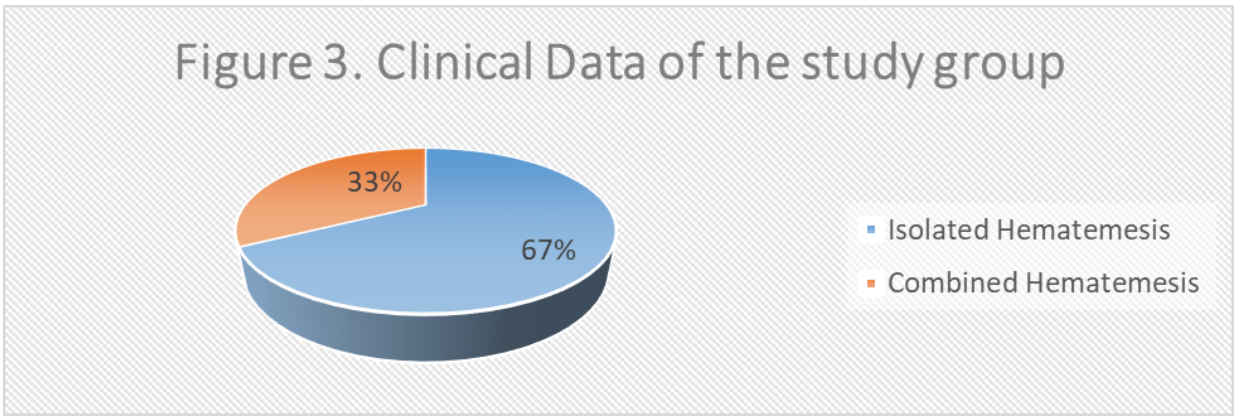
The majority of cases were from the Oromia region which is 50(40.0%) of 125 patients followed by Addis Ababa with 32 (25.5%) patients, and 9(7.4%) and 9(7.4%) of the patients were from SNNPR and the Amhara regions, respectively (see fig. 4 and table 1).

Figure 4: Geographic distribution of cases



7.2 Clinical Data

A total of 84/125(67%) presented with isolated haematemesis, 41/125() (33%) with a combination of melaena and haematemesis and no patients identified with Isolated Melena, and 69/125(55.2%) patients was transfused with blood



On admission, all patients had an initial full blood count performed. The mean Hemoglobin was 7.13gm/dl (Range 4.1 – 12.2gm/dl), The mean hemoglobin of transfused patients were 6.3gm/dl

The mean haemoglobin (Hb) of patients who presented with isolated haematemesis was 8.27 g/dL (range: 5.1–14.3), and those presenting with a combination of haematemesis and melaena had a mean Hb of 6.21 g/dL (range: 5.1–10.6).

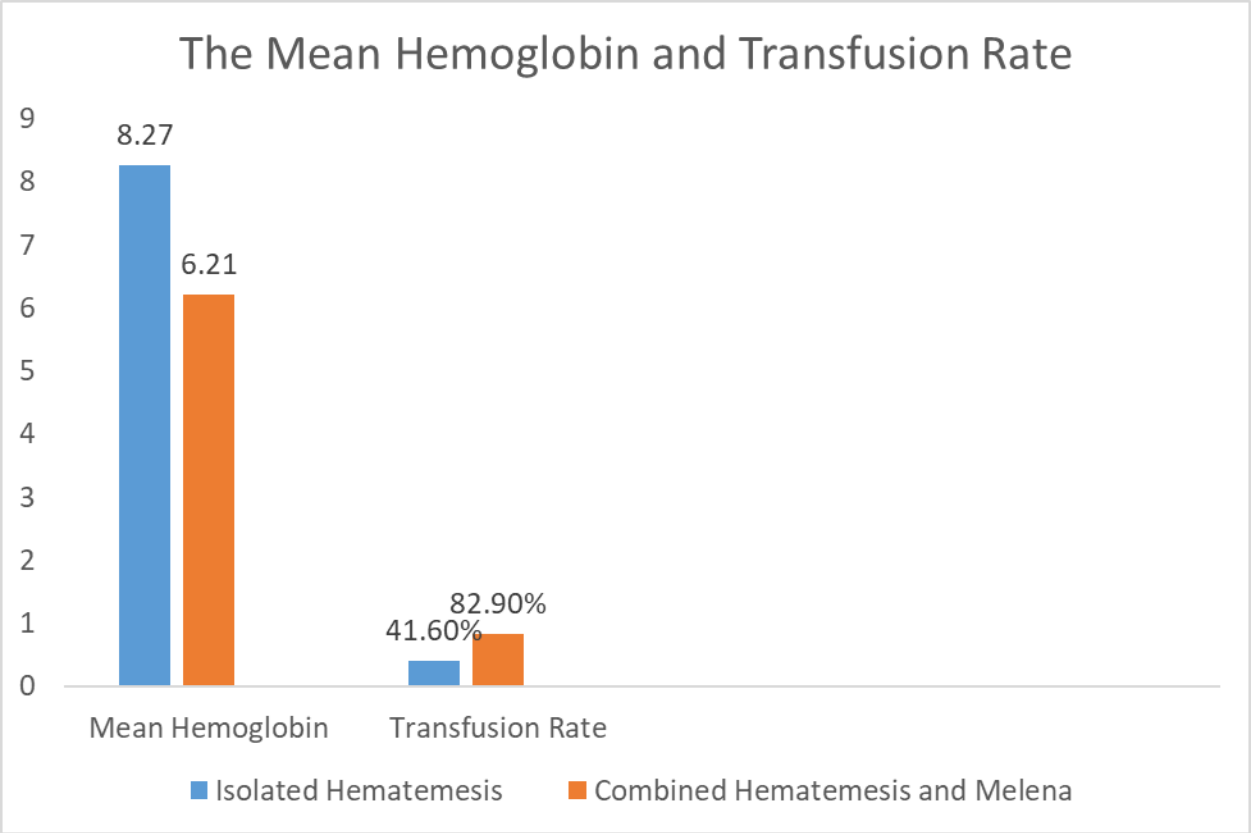
Combined Hematemesis and Melena was associated led to more significant bleeding as indicated by lower mean hemoglobin level (6.21 ± 2.6 g/dL) and higher transfusion rate (82.9%) than Isolated hematemesis (8.27 ± 2.5 g/dL and 41.6%, respectively) (P<0.001)

Table 3 : Patient sociodemographic and clinical characteristics

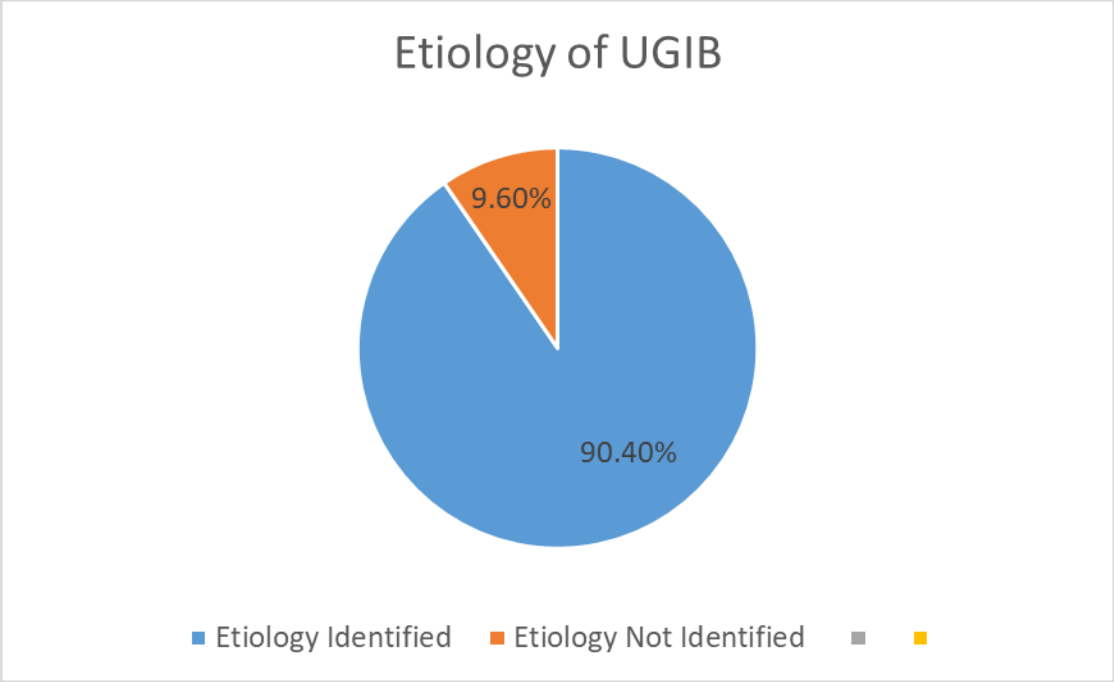
Patient characteristics		Number	Percent %
Sex of patient	Male	67	53.6
	Female	58	46.4
Address of the patient	AA	32	25.5
	Oromia	50	40
	Amhara	9	7.4
	SSNPR	9	7.4
	Tigray	3	2.4
	Afar	2	1.6
	Benishangul Gumuz	0	0.0
	Dire dawa	3	2.4
	Gambela	1	0.8
	Harari	2	1.6
	Somali	2	1.6
Major presenting symptom	Isolated Hematemesis	84	67.0
	Isolated Melena	0	0.0
	Combined Hematemesis and Melena	41	33.0
	Pallor	82	65.6
	Shock	5	4.0
	Previous bleeding	12	9.6
	Others	3	2.4
Risk factors	Prior PUD	17	11.2
	Prior Liver disease	30	20.1
	H.Pylori	75	50.3

	Medications	27	18.4
Etiology	Peptic Ulcer disease	50	40.0
	Portal HTN	38	30.4
	Bleeding disorders	16	12.8
	Portal Vein Thrombosis	5	4.0
	Unknown	12	8.0

Figure 6. The mean HGB level, Transfusion Rate and Clinical presentation



Based on clinical, laboratory and endoscopic data 113/125(90.4%) etiologic factors was identified and 12/125(9.6%) secondary cause was not identified.



Out of identified causes the most commonly found source of bleeding was peptic ulcer disease which is 52/125 (40.0%)(H. Pylori Associated PUD was 9/125 (7.2%), Drug Induced Gastritis 7/125 (5.6%), Unspecified PUD in 22/125(17.6%) patients) followed by Portal Hypertension which was 38/125 (30.4%), (out of portal hypertension, 11/125(8.8%) was due to hepatitis liver disease, 5/125(4%) was due to Schistosomiasis) and Bleeding Disorders 16/125 (12.8%), Portal vein thrombosis secondary to Arteriovenous malformation in 5/125(4%) and 10/125(8%) cause was not found.

Endoscopy was done for 36/125(28.8%) patients and the commonest findings Variceal disease secondary to Portal hypertension in 22/36(61.1%) (Of the variceal disease 16/22 was die to Esophageal Varices and 5/22 was due to Gastric Varices) followed by Ulcer disease in 12/36(33.3%) (6/12 was prolapse gastropathy and 6/12 was Erosive Gastritis) and Erosive Esophagitis in 2/36(5.5%).

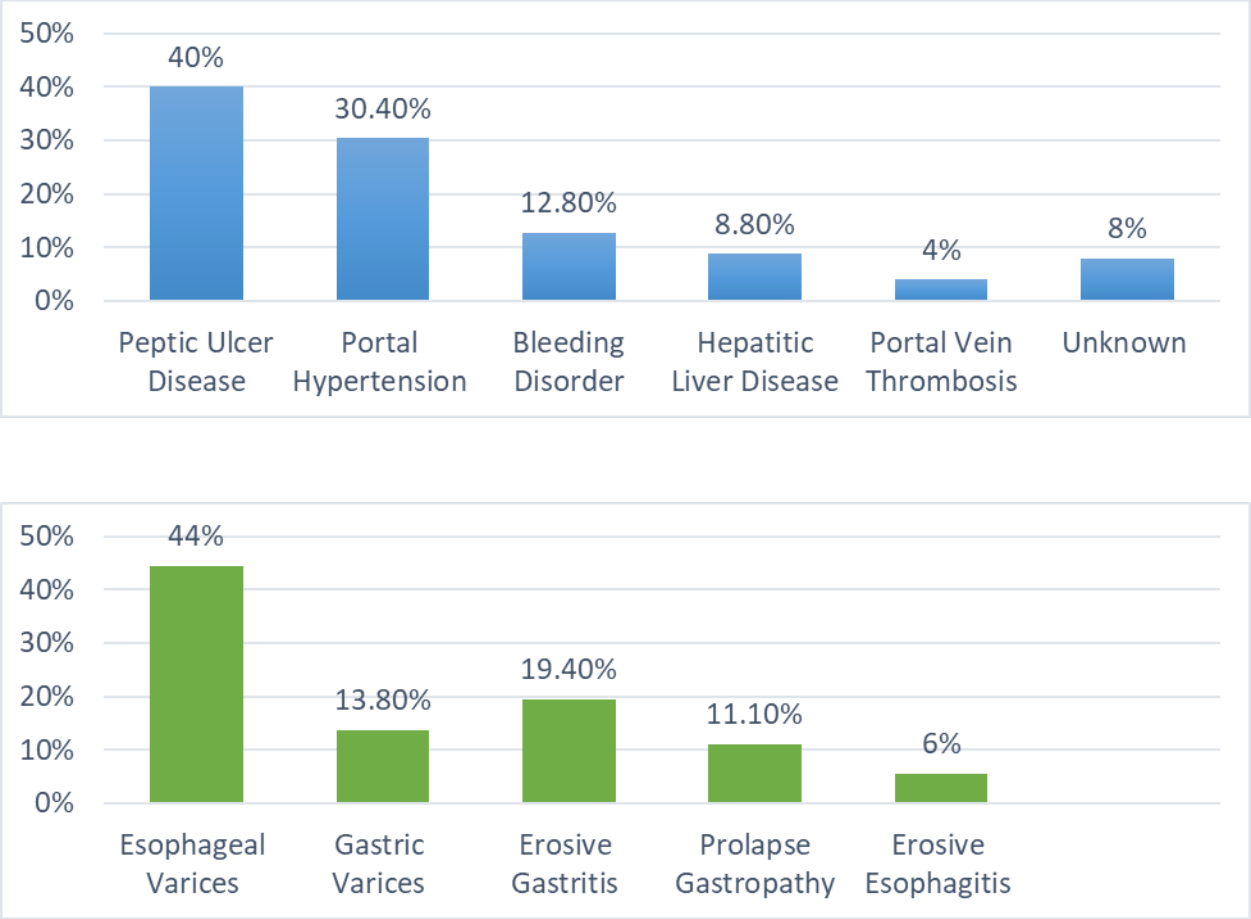


Figure 7. Etiology of Study Group

Peptic Ulcer Disease was more common in older female patients and Portal Hypertension in older male patients while Bleeding Disorders was common in younger age.

Table 3 : Etiology and Demography distribution

Etiology	Number (Average Age)
1. Peptic Ulcer Disease	Male = 23 (11.6 years)
	Female = 27 (12.1 years)
2. Portal Hypertension	Male = 25 (10.7 years)
	Female = 13 (10.2 years)
3. Bleeding Disorders	Male = 9 (7.7 years)
	Female = 9 (8.4 years)
4. Portal Vein Thrombosis	Male = 3 (9.3 years)
	Female = 2 (11.0 years)
5. Others	Male = 7 (8.8 years)
	Female = 5 (8.4 years)

Hemoglobin levels (mean ± SD) according to the diagnosis are shown in Fig. 1. Significantly lower hemoglobin levels were found in children with Variceal disease secondary to Portal Hypertension, Portal Vein Thrombosis and Cirrhotic liver disease (P>0.05)

Number	Etiology	Mean HG
1.	Peptic Ulcer disease	7.4 ± 2.3 g/dL
2.	Portal Hypertension	6.8 +- 1.6 g/dL
3.	Liver disease	6.55 ± 1.8 g/dL
4.	Bleeding disorders	6.8 ± 2.3 g/dL
5.	Portal Vein Thrombosis	6.2 ± 2.3 g/dL
6.	Unknown	8.19 ± 3.2 g/dL

Risk factors

Risk factor was identified in 72 (57.6%) patients. The commonest risk factor identified were Portal HTN 17.6% followed by Prior PUD history 16.0 %, H. Pylori infection 7.2%, Bleeding disorder 10.4% (6/12 Patients Due to Aplastic Anemia, 4/12 due to chronic ITP and 4 patients with Hematologic malignancy), Hepatitis 8.8%, Prior liver disease 8.8%, and finally Medications in 5.6% (4/7 patients was due to Prednisolone in patients with Nephrotic syndrome, Lupus Nephritis, and 2 hematologic malignancy patients, 1 Patient due to Ibuprofen in patient with Systemic onset JRA, 1 Due to Asprin and 1 was Warfarin Induced Gastritis in a patient with Refractory Heart Failure secondary to Dilated Cardiomyopathy. Bleeding disorders was the next most common risk factor identified with 6/12 Patients Due to Aplastic Anemia, 4/12 due to chronic ITP and 4 patients with Hematologic malignancy.

Number	Risk factors	Number	Percentage
1.	Portal Hypertension	22	17.6%
2.	Prior PUD	20	16.0%
3.	Prior Liver Disease	8	8.8%
4.	H. Pylori	9	7.2%
5.	Bleeding Disorders	13	10.4%
6.	Medication	7	5.6%
	Total	72	57.6%

Comorbidities

There was 41/125 (32.8%) associated comorbidities in the study group. The Comorbidities are mentioned on Table

Number	Comorbidity	Number	Percentage
1.	Hepatobiliary disease	13	10.4%
2.	Hematologic disease	13	10.4%
3.	Rheumatologic disease	5	4.0%
4.	Cardiac diseases	4	3.2%
5.	Gastrointestinal disease	2	1.6%
6.	Neurologic disease	2	1.6%
7.	Renal disease	2	1.6%

6. Discussion

This study was a retrospective hospital-based cross-sectional study, conducted at the Emergency Department, Tikur Anbessa Specialized Hospital, Addis Ababa, Ethiopia involving of 125 records from August, 2023 to January, 2024.

In this study large number of participants 64/125 (49.4%) were in the age group of 5-10 years with mean age of presentation of 9.71 years and males were more affected than female (1.2:1). When we compare this to other studies done in other developed nation the age distribution of cases was similar and males were found to be affected in higher proportion than females. School

age and significant male predominance is commonly reported in developing countries too. (3, 26,27)

A total of 84/125(67%) presented with isolated haematemesis, 41/125 (33%) with a combination of melaena and haematemesis and no patients identified with Isolated Melena, and 69/125 (55.2%) patients was transfused with blood similar to the study in Egypt isolated hematemesis 65% and Combined hematemesis and Melena 28% , France (96.6% vs 14.1%), UK (60 vs 25%), India (75% vs 25%), But transfusion rate was higher (55.2%) compared other centers like France (11.3%) owing to late presentations of our patients and the higher prevalence of Portal Hypertension with variceal diseases

The pattern of UGIB in the present study regarding gender follows the existing trends. We observed that a preponderance of Portal Hypertension in male participants whereas Peptic Ulcer Disease in female participants.

In the present study, UGIB presenting as melena resulted in bleeding more significantly than UGIB presenting with combined hematemesis and melena, as determined by hemoglobin level and need for transfusion. Passage of melanotic stool is less dramatic than vomiting blood and may go unrecognized as abnormal by the patient causing a delay in seeking medical attention. Conversely, vomiting blood of any amount is easily recognized as abnormal, prompting immediate evaluation. The two conditions associated with the most significant UGIBs are duodenal ulcers and esophageal varices. Duodenal ulcers may bleed for a prolonged time prior to recognition of melena. Children with esophageal varices had the most severe bleeding in the hematemesis group. Varices tend to bleed profusely because of a high pressure gradient related to portal hypertension as the study from Tertiary hospital in UK and Study in Jackson, USA. (**9,**

32)

In this study the most common etiology of UGIB that was identified was Peptic Ulcer Disease accounting for 40.0% followed by Portal Hypertension 30.4%. Compared to other studies the fact the Peptic ulcer disease being predominant is a not new finding. Most of the studies that was done in Africa as well as in those developed countries have showed that PUD to be more common than Portal Hypertension. The possible reason for this could be an increase in usage o

drugs causing gastritis, increased incidence of H. Pylori and usage of a more sensitive screening tool to detect H.Pylori and Increased use of Endoscopy to detect ulcer disease.

In a retrospective study conducted in France, USA and Other African countries, the low serum hemoglobin, the presence of melena with hematemesis, the presence and degree of varices and the presence of bleeding disorder were considered as significant bleeding transfusion rate indicators. These findings are consistent with our results (18).

Among the participants the most common risk factor identified was Portal Hypertension (%) followed by Prior PUD and Prior Liver disease, H.Pylori and the most common comorbidity was Hepatobiliary disease (%).

Analytical study using the chi square and fisher test showed significant association between Clinical presentation, Mean hemoglobin and With Etiology. The above test also showed that Presence of Melena was significantly associated with Lowest hemoglobin and Etiology. Low Hemoglobin is associated with Portal hypertension specially Grade III Esophageal varices and Gastric varices.. This finding is similar to those done in other developing and developed countries. (26). Even though majority of those with first episode bleeding patients with PUD, there was no statistically significant association identified between the two.

Conclusion

Upper GI bleeding is more common in 5-10 years age group with hematemesis as the main presenting symptom. UGIB presenting as Hematemesis + melena resulted in bleeding more significantly than UGIB presenting with isolated hematemesis as determined by hemoglobin level and need for transfusion. Risk factor was identified in 72 (57.6%) patients.
The commonest etiology of UGIB in this study was Peptic ulcer disease.
The commonest risk factor identified were Portal HTN 17.6% followed by Prior PUD history 16.0 %, H. Pylori infection 7.2%, Bleeding disorder 10.4%.
There was 41/125 (32.8%) associated comorbidities in the study group

REFERENCES

[1]. Cox K, Ament ME. Upper gastrointestinal bleeding in children and adolescents. Pediatrics 1979; 63:408 –13.

[2]. Carvalho E, Nita MH, Paiva LM *et al.* Gastrointestinal bleeding. *J Pediatrics* 2000; 76:135-146

[3]. American board of pediatrics, Cochrane Database Syst Rev 2008;(3):CD000193.

[4]. Gastrointestinal bleeding in infants and children. Pediatrics Rev 2008; 29:39–52.

[5]. Cleveland K, Ahmad N, Bishop P, and Nowicki M. Upper gastrointestinal bleeding in children: an 11-year retrospective endoscopic investigation. World J Pediatrics 2012; 8:123–8.

{6}. Rodgers BM. Upper gastrointestinal hemorrhage.Pediatr Rev 1999; 20:171–4.

{7}. Wilkins T, Khan N, Nabh A, Schade RR. Diagnosis and management of upper gastrointestinal bleeding. Am Fam Physician 2012; 85:469–76.

{8} Boukthir S, Mazigh SM, Kalach N, Bouyahya O, Sammoud A. The effect of non-steroidal anti-inflammatory drugs and Helicobacter pylori infection on the gastric mucosa in children with upper gastrointestinal bleeding. Pediatrics Surg Int 2010; 26:227–30.

{9}. Deerojanawong J, Peongsujarit D, Vivatvakin B, Prapphal N. Incidence and risk factors of upper gastrointestinal bleeding in mechanically ventilated children. Pediatrics Crit Care Med 2009; 10:91–5.

{10}.Cochran EB, Phelps SJ, Tolley EA, Stidham GL.Prevalence of, and risk factors for, upper gastrointestinal tract bleeding in critically ill pediatric patients. Crit Care Med 1992; 20:1519–23.

11. Gavin F, Dugas MA, Chaibou M, Morneau S,Lebel D, Lacroix J. The impact of clinically significant upper gastrointestinal bleeding acquired in a pediatric intensive care unit. Pediatrics Crit Care Med 2001; 2:294–8.

{12}. Goncalves ME, Cardoso SR, Maksoud JG. Prophylactic sclerotherapy in children with esophageal varices: long-term results of a controlled prospective randomized trial. J Pediatrics Surg 2000; 35:401–5.

13. Lesko SM, Mitchell AA. An assessment of the safety of pediatric ibuprofen. A practitioner based randomized clinical trial. JAMA 1995; 273:929–33.

{16}. Dolatkhah R, Khoshbaten M, Asvadi Kermani I, et al. Upper gastrointestinal bleedings in patients with hereditary coagulation disorders in northwest of Iran: prevalence of Helicobacter pylori infection. Eur J Gastroenterol Hepatol 2011; 23:1172–7.

{18}. Mengistie, Y. C. (2020). Dr. The pattern and outcome of upper gastrointestinal bleeding at St. Paul's Millennium Medical College, Addis Ababa, Ethiopia. Ethiopian Medical Journal, 58(04).

{19}. Taye, M., Kassa, E., Mengesha, B., Gemechu, T. & Tsega, E. (2004). Upper gastrointestinal endoscopy: A review of 10,000 cases. EMJ, 42(2), 97–107.

{21}. WPant C, Olyaee M, Sferra TJ, Gilroy R, Almadhoun O, Deshpande A. Emergency department visits for gastrointestinal bleeding in children: results from the Nationwide Emergency Department Sample 2006-2011. Curr Med Res Opin 2015; 31: 347-351 [PMID: 25466210 DOI: 10.1185/03007995.2014.986569]

{22}. Yu Y, Wang B, Yuan L, Yang H, Wang X, Xiao Y et al (2016) Upper gastrointestinal bleeding in Chinese children: a multicenter 10-year retrospective study. Clin Pediatrics (Phila) 55(9):838–843

{23}. Arora NK, Ganguly S, Ahuja A *et al*. Upper gastrointestinal bleeding : etiology and management. *Indian J Pediatrics* 2002; 69: 155-168

{24}. Edward Buonocore, M.D. Department of Radiology University of Tennessee Memorial Research Center and Hospital Knoxville, Tennessee 37920

{26}. Michael Nowicki, M.D., Division of Pediatric Gastroenterology, University of Mississippi Medical Center, 2500 North State Street, Jackson,

{27}. Nasher O, Devadason D, Stewart RJ. Upper gastrointestinal bleeding in children: a tertiary united kingdom children's hospital experience. Children (Basel) 2017; 4(11). doi:10.3390/children4110095.

{28}. Grimaldi-Bensouda L, Abenhaim L, Michaud L, et al. Clinical features and risk factors for upper gastrointestinal bleeding in children: a case-crossover study. Eur J Clin Pharmacol 2010;66:831–7.

{29}. Li Voti G, Acierno C, Tulone V *et al.* Relationship between upper gastrointestinal bleeding and nonsteroidal antiinflammatory drugs in children. *Pediatric Surg Int* 1997; 12: 264-265.

{31}. Gimiga N, Burlea M, Diaconescu S, Olaru C. An assessment of the causes of lower gastrointestinal bleeding in a children's hospital in northeastern Romania. Arch Biol Sci 2015; 67: 715-720 [DOI: 10.2298/ABS140917043G]

{32}. Isa HM, Alkharsi FA, Ebrahim HA, Walwil KJ, Diab JA, Alkowari NM. Causes of gastrointestinal bleeding in children based on endoscopic evaluation at a tertiary care center in Bahrain. World J Gastrointest Endosc 2023; 15(4): 297-308

{34}. Kiyoaki Y. Katsunori K, Ayako T, Aki M.Current status and future challenges in the endoscopic management of non-variceal upper gastrointestinal bleeding in children

{36}. Kalyoncu D, Urangi N, Cetinkaya F (2009) Etiology of upper gastrointestinal bleeding in young children. Indian J Pediatrics 76:899–901, doi: 10.1007/s12098-009-0195-x.

{38}. Jafari SA, Kiani MA, Kianifar HR, Mansooripour M, Heidari E, Khalesi M. Etiology of gastrointestinal bleeding in children referred to pediatric wards of Mashhad hospitals, Iran. Electron Physician 2018; 10(2): 6341-5. doi:10.19082/6341

{39}. Houben CH, Chiu PW, Lau JY, et al. Duodenal ulcers dominate acute upper gastrointestinal tract bleeding in childhood: a 10-year experience from Hong Kong. J Dig Dis 2008;9:199–203.

{40}. Chawla S, Seth D, Mahajan P, Kamat D (2007) (2007) Upper gastrointestinal bleeding in children. Clin Pediatrics (Phila) 46(1):16–21

{41}.Hassoon AJ, AlMaeeni AA, Matloub HY. Upper gastrointestinal bleeding in children. J Fac Med Baghdad 2012; 54: 223-227.

{42}. Kanuni ;Esra Polat, Nevzat Aykut Bayrak, Günsel Kutluk, Department of Pediatrics, Division of Pediatric Gastroenterology, Health Sciences University, Kanuni Sultan Süleyman Training and Research Hospital, Istanbul, Turkey

{44}. Mostafa A. Elhodhod, Ahmed M. Hamdy, Passant O. Fahmy & Yosra M Awad Egyptian Pediatric Association Gazette 71, Article number: 6 (2023)

{46}. Sonia Mazigh. Endoscopic diagnosis in a Tunisian pediatric population with UGIB, Tunis Med 2013, 54, 227-228

{48}. Aboubacor D, Henriette Y, Kissi K. Upper Gastrointestinal Endoscopy and Children digestive Pathology in Abidjan, open journal of gastroenterology 2016::6:125-127

{50}. Mudawi HMY, El Tahir MA, Suleiman SH, Eltaybe NH, Gamer NM, Abdallha F et al (2009) Paediatric gastrointestinal endoscopy: experience in a Sudanese university hospital. East Mediterr Health J 15(4):1027–

QUESTIONNAIRE

This is a questionnaire which is prepared to undergo retrospective study on prevalence and related factors of patients seen at TASH over a period of 5 year. The data will be collected from patient charts, medical recording system and HMIS

MRN/ICARE Number _____DATE _____

Questionnaire Number _____

PART 1. SOCIODEMOGRAPHIC CHARACTERSTICS

1.	**Age**	1. Age in years _____
2.	**Sex**	1. Male 2. Female
3.	**Address**	1. Addis Ababa 2. Oromia 3. Amhara 4. SNNPR 5. Others (specify)_____

PART 2. CLINICAL PRESENTATION

4.	**Hematemesis only**	1. Yes 2. No
5.	**Melena only**	1. Yes 2. No
6.	**Hematemesis and Melena**	1. Yes 2. No
7.	**Transfused**	1. Yes 2. No
8.	**Shock**	1. Yes
		2. No
9.	**Prior Bleeding**	1. Yes 2. No

PART 5. HEMATOLOGICAL AND LABORATORY PROFILES

CBC	In number
10.Hemoglobin	----------
11 HBsAg	----------
12. HCVAB	……..

H. Pylori		If done…
13. H. Pylori	1. Done 2. Not done	1. Positive 2. Negative

Endoscopic profiles	
14. Gastric Ulcer	1. Yes 2. No
15. Duodenal Ulcer	1. Yes 2. No
16. Esophageal varices	1. Yes 2. No
17. Gastric Varices	1. Yes (Specify)_____ 2. No
18. Gastro esophageal varices	1. Yes (specify)_____ 2. No
19. Portal-hypertensive gastropathy	1. Yes 2. No
20. Mallory weiss tear	1. Yes 2. No
31. GERD	1. Yes 2. No
22. Others	1. Yes (Specify)_____ 2. No

PART 2. RISK FACTORS

23. Drugs	1. Yes 2.No	**If Yes…** 1. Diclofenac 2. Ibuprofen 3. Others (Specify) ---------
24. Hepatitis	1.Yes 2.No	**If Yes…** 1.Hepatitis B 2.Hepatitis C
25. Helicobacter Pylori	1. Yes 2. No	
26. Prior Liver Disease	1. Yes 2. No	
27. Prior PUD	1. Yes 2. No	
28. Others	1. Yes 2. No	If Yes… (Specify) ---------

PART 4. COMORBIDITIES

29.Hepatobiliary disease	1. Yes {specify ----------} 2. No
30.Hematologic disorders	1. Yes {specify ----------} 2. No
31.Cardiopulmonary disorders	1. Yes {specify ----------} 2. No
32.Gastrointestinal disorders	1. Yes {specify ----------} 2. No
33.Neurologic diseases	1. Yes {specify ----------} 2. No
34.Others	1. Yes {specify ----------} 2. No

PART 8.ETIOLOGY {ENDOSCOPIC AND CLINICAL PROFILES}

35.	**CLINICAL DIAGNOSIS**	1. Yes (Specify diagnosis)_____ 2. No
36	**ENDOSCOPIC DIAGNOSIS**	1. Yes (Specify diagnosis)_____ 2. No