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ORIGINAL ARTICLE

Importance and Role of Upper Gastrointestinal Endoscopy in Diagnosis of Recurrent Abdominal Pain in Children

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ABSTRACT

Objective: The purpose of this study is to determine the effectiveness of upper gastrointestinal endoscopy in diagnosis of recurrent abdominal pain in children.

Study Design: Retrospective study.

Place and Duration: Department of Gastroenterology, HITEC-IMS Taxila Cantt. 1st July 2021-31st Dec 2021

Methods: There were 78 children of both genders with ages >14 years were presented in this study. After obtaining the authority's informed written permission, we took detailed demographic information, such as age, gender, weight, and symptoms, for all of the recruited patients. All the patients were underwent for upper gastrointestinal endoscopy to diagnose recurrent abdominal pain. Prevalence of dyspepsia and H.pylori infection was also recorded among children. We used SPSS 23.0 to analyze complete data.

Results: Among 78 children, 42 (53.8%) were boys and 36 (46.2%) were girls. Majority of the patients 45 (57.7%) were ages between 4-8 years followed by 9-14 years 25 (32.1%) and 8 (10.3%) were in age group 1-3 years. Most common symptom was anemia, followed by vomiting, haematemesis, melena and weight loss. Frequency of dyspepsia was found in 22 (28.2%) and helicobacter pylori found in 29 (37.2%) children. Most common diagnosis of endoscopy was gastritis found in 33 (42.3%) case, gastric erosions in 14 (17.9%) cases, hiatus hernia in 8 (10.3%) cases and remaining were gastric ulcer, gastric polyp and duodenitis. Hypoxemia, apnea and aspirationwere the most common complications found in our study.

Conclusion: In this study, we found that upper gastrointestinal endoscopy remains an essential tool in the evaluation of RAP in children because it allows for accurate diagnosis of GI causes of RAP, despite reported complications such as hypoxemia, apnea, aspiration and choking, cardiac arrhythmias, bacteremia, perforation, and bleeding.

Keywords: Upper GI Endoscopy, Findings, Complications, Children

INTRODUCTION

"Three bouts of stomach pain recurring within three months, severe enough to disrupt daily activities" was how Apley initially described chronic or recurrent abdominal pain (RAP) in 1958. [1] There are many different definitions of RAP that have evolved over time, including the Rome I, Rome II, Rome III and Rome IV criteria [2–3]. The Rome IV Criteria now defines RAP as abdominal pain lasting for a minimum of two months and causing at least one episode of pain per week severe enough to disrupt a child's normal activities. [3,4] New developments and technical advances, notably diagnostic GI endoscopy, have led to the identification of organic reasons for RAP in recent years To rule out an organic aetiology in any kid with RAP, the attending physician must be able to refer to a general paediatrician and the paediatric gastrointestinal section specifically. For the identification of organic causes of RAP, the concept of "red flags" has been established[5-7] and endoscopy is more commonly related with aberrant findings in patients with alarm characteristics than in those without the red flag indications. Weight loss, poor development, GI bleeding, considerable vomiting, abdominal pain, and abdominal bulk are all examples of warning characteristics. [7]

Many studies [8] suggest that stomach symptoms are the most common signs of UGIE in children from Africa, with rates ranging from 22% to 90%. A key diagnostic in CAP is UGIE, which has been linked to Helicobacter pylori (H. pylori) as a significant cause of chronic gastritis and ulcers in children [9-11]. Despite its intrusive nature, gastroscopy has a dual purpose. H. pylori infection and gastroduodenal lesions may be diagnosed with this technology. As many as 70 percent of patients with CAP had endoscopic abnormalities, according to certain researchers [12-15].Quarq [13] discovered 18 percent of endoscopic abnormalities in Asia, Ashorn [14] found 58.5 percent, and Lawson [15] found 70 percent in West Africa.

Thus, the purpose of this research is to report the endoscopic findings in children with RA.

MATERIAL AND METHODS

This retrospective study was conducted Department of Gastroenterology, HITEC-IMS TaxilaCanttand comprised of 78 children.After obtaining the authority's informed written permission, we took detailed demographic information, such as age, gender, weight, and symptoms, for all of the recruited patients. Children >14 years of age, other severe medical illness and those did not provided any written consent were excluded from this study.

To ensure that all patients received the best possible care and treatment, they were thoroughly interviewed, physically examined, and had all of their medical records reviewed.With the Olympus GIF-P3 (9. Omm in diameter) and GIFXl? (7.8 mm in diameter with 2 mm channel) for young patients, the examinations were done. Four-way tip control and bending is available, with 210" up, 90" down and 100"right and left swivel options.chloral hydrate (20 mglkg, oral, 20-30 minutes before operation) and/or diazepam 0.2 mglkg IV were used to sedate all babies and children throughout the procedures.

There was a laryngoscope, resuscitation tray, and a supply of oxygen with a variety of delivery methods at the patient's bedside. There is a monitor for newborns and babies under the age of three months that shows their heart rate as well as their breathing rate and an electrocardiogram (ECG). Preliminary checks included making sure that the IV was running properly before anything further could begin. We used SPSS 23.0 to analyze complete data.

RESULTS

Majority of the patients 45 (57.7%) were ages between 4-8 years followed by 9-14 years 25 (32.1%) and 8 (10.3%) were in age group 1-3 years.(fig 1)

Among 78 children, 42 (53.8%) were boys and 36 (46.2%) were girls. Mean weight of the children was 28.13±4.18 kg. Most common symptom was anemia 28 (35.9%), followed by vomiting 24 (30.8%), haematemesis in 12 (15.4%), melena 8 (10.3%) and

weight loss 6 (7.7%). Frequency of dyspepsia was found in 22 (28.2%) and helicobacter pylori found in 29 (37.2%) children. (table 1)

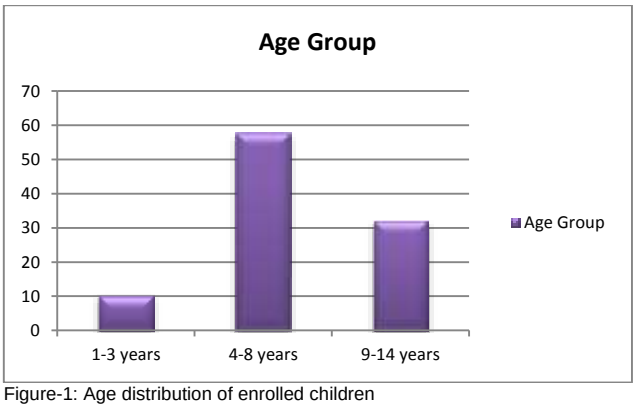

Figure-1: Age distribution of enrolled children

Table-1: Children with demographic details

Variables	Frequency	Percentage
Mean weight (kg)	28.13±4.18	
Gender		
Boys	42	53.8
Girls	36	46.2
Symptoms		
anemia	28	35.9
vomiting	24	30.8
haematemesis	12	15.4
melena	8	10.3
weight loss	6	7.7
Dyspepsia		
Yes	22	28.2
No	56	71.8
H.pylori		
Yes	29	37.2
No	49	62.8

Most common diagnosis of endoscopy was gastritis found in 33 (42.3%) case, gastric erosions in 14 (17.9%) cases, hiatus hernia in 8 (10.3%) cases and remaining were gastric ulcer, gastric polyp and duodenitis.(table 2)

Table-2: Endoscopic findings of enrolled cases

Variables	Frequency	Percentage
Findings		
gastritis	33	42.3
gastric erosions	14	17.9
hiatus hernia	8	10.3
gastric ulcer	4	5.1
gastric polyp	3	3.8
duodenitis	1	1.3
Normal	15	19.2

Hypoxemia, apnea, aspiration,choking, cardiac arrhythmias, bacteremia, perforation, and bleeding were the most common complications found in our study.(table 3)

Table-3: Post-treatment frequency of complications

Variables	Frequency	Percentage
Findings		
hypoxemia	6	7.7
apnea	3	3.8
aspiration	2	2.6
choking	2	2.6
gastric polyp	2	2.6
cardiac arrhythmias	2	2.6
bacteremia	2	2.6
perforation	2	2.6
bleeding	1	1.3
Total	22	28.2

DISCUSSION

Children's recurrent stomach discomfort is a public health issue since it affects 15% - 45% of school-aged children in the United States. [16] More than 80% of the time, these aches are attributed to functional and psychological causes. Most of these ailments have a non-organic cause. The argument over the organicity of children's recurring gut symptoms has been revived by advancements in digestive endoscopy and the discovery of H. pylori. Digestive endoscopy was shown to be responsible for 18 percent and 58 percent of cases, respectively.[15,16]

This retrospective study comprised of 78 children. 78 children, 42 (53.8%) were boys and 36 (46.2%) were girls. Majority of the patients 45 (57.7%) were ages between 4-8 years followed by 9-14 years 25 (32.1%) and 8 (10.3%) were in age group 1-3 years. Findings of our research were comparable to the previous studies.[17,18] Most common symptom was anemia, followed by vomiting, haematemesis, melena and weight loss. Frequency of dyspepsia was found in 22 (28.2%) and helicobacter pylori found in 29 (37.2%) children.[17] Most common diagnosis of endoscopy was gastritis found in 33 (42.3%) case, gastric erosions in 14 (17.9%) cases, hiatus hernia in 8 (10.3%) cases and remaining were gastric ulcer, gastric polyp and duodenitis. In Iran, Motamed et al [19] discovered that 84% of children with RAP had endoscopic abnormalities, comparable to this study's findings. However, in the latter trial, only children with alarm symptoms or red flag indicators were subjected to gastroscopy, which may explain the high number. Not all infants with RAP are referred for a gastroscopy at our centre because prior tests have failed to uncover an underlying aetiology and the referring clinician still has a strong suspicion for an underlying organic abnormality. This might explain why endoscopic abnormalities were so common in our research. There are conflicting findings in this regard, with recent studies from the Ivory Coast (Banguorou et al [20] and Nepal (Upadhyay et al [21]) reporting that up to 70% and 71% of the children who presented with RAP had endoscopic abnormalities, while other studies have reported lower figures in children with RAP without red flag signs, as observed by Aanpeureng et al (51.6 percent)[18] and Urakapol et al (47.6%). (44.7 percent). [5] Consequently, it seems that the endoscopic yield for youngsters with no alarm signs ranges from 38% to 58%, according to published numbers. [5,22]

It was epigastric discomfort that was the most common manifestation of chronic gastritis and peptic ulcer disease in patients like Attia [23], Bougouma [24], Maiga [25], Perret [26], and Sanguino [27]. According to Lawson's research [28], a comparable rentability was discovered This rentability, on the other hand, varied from 3.6% to 28% in other studies [29,30]. It is possible that our study's high prevalence of epigastric pains is to blame for the observed discrepancies in findings. [31] Hypoxemia, apnea, aspiration, choking, cardiac arrhythmias, bacteremia, perforation, and bleeding were the most common complications found in our study. When Ament studied paediatric UGIE after 2045, he found that oversedation-induced TPA, general anaesthesia-induced bronchospasm, and phlebitis were the most prevalent sequelae. Bradycardia or stridor may be caused by vagal stimulation or airway compression in a young newborn. In most cases, these side effects go away as the endoscope is taken out of the patient.

To summarise, upper GI endoscopy is critical in identifying the underlying aetiology of RAP in children, particularly when alarm signs are present. Children of various ages are now being evaluated using this diagnostic instrument, which has shown to be helpful. Direct imaging of the gastrointestinal system by endoscopy is paired with histopathologic examination to provide an accurate diagnosis as well as therapy options.

CONCLUSION

In this study, we found that upper gastrointestinal endoscopy remains an essential tool in the evaluation of RAP in children because it allows for accurate diagnosis of GI causes of RAP,

despite reported complications such as hypoxemia, apnea, aspiration and choking, cardiac arrhythmias, bacteremia, perforation, and bleeding.

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