

ORIGINAL ARTICLE**CLINICAL PROFILE AND OUTCOME OF PEDIATRIC PATIENTS: A FIVE -YEAR ENDOSCOPY TREND ANALYSIS**

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ABSTRACT

Introduction: Gastrointestinal diseases are important healthcare problems in pediatric age groups across the world. Patients can have diverse clinical manifestations of gastrointestinal problems. Since the inception of pediatric endoscopy in the 1970's, it has been used widely in clinical practice to identify the causes of different upper and lower gastrointestinal complaints and, hence has become standard of care in diagnosing and treating esophageal band ligation, sclerotherapy, balloon dilatation, polypectomy, biopsy taking and other pediatric gastrointestinal problems.

Objective: This study assessed the clinical profile and outcome of children with gastrointestinal problems.

Methods: A retrospective-cross-sectional descriptive study was conducted through chart review of all pediatric patients who underwent esophagogastroduodenoscopy and colonoscopy and performed at Tikur Anbessa Specialized Hospital from September 2013 to January 2017. Data was analyzed using Statistical Package for Social Sciences version 25.0.

Results: There were 615 patients, 340 (55.3%) male and 275 (44.7%) female, who had endoscopy done. The commonest indication for gastroscopy was bloody vomiting which was documented in 186 (44.3%) of the patients and the commonest gastroscopic finding being esophageal varices identified in 159 (37.9%). Colonoscopic indication was rectal bleeding in 96 (49.2%) of the patients, findings revealing rectal polyps in 130 (66.7%). Hyperplastic polyps (32%) were found the commonest biopsy finding followed by Juvenile polyps (27%).

Conclusions: Esophageal varices, polyps, nonspecific inflammations and IBD were the commonest gastroscopic and colonoscopic findings, indicating that endoscopy is a better procedure for the diagnosis and treatment of gastrointestinal problems in children.

Keywords: Pediatric age, gastrointestinal disease, endoscopy, gastro intestinal bleeding.

INTRODUCTION

Gastrointestinal diseases are important healthcare problems in pediatric age group across the world (1). The patients have diverse clinical manifestations of gastrointestinal problems. Since the inception of pediatric endoscopy in the 1970's, it has been used widely in clinical practice to identify the causes of different upper and lower gastrointestinal complaints and hence has become the standard of care in the diagnosis of pediatric gastrointestinal problems (2-4).

The various endoscopic procedures used as therapeutic and diagnostic tools include esophagogastroduodenoscopy (EGD), colonoscopy, polypectomy, hemostatic therapy (hemoclip), balloon dilation, and placement of percutaneous endoscopic tube (PET). As part of diagnostic procedures, EGD is useful to evaluate common pediatric conditions like allergic, infectious, or peptic esophagitis; infectious or inflammatory gastritis; and celiac disease (5).

Endoscopy also helps to obtain routine tissue sampling in pediatric patients from duodenum, stomach, and esophagus during gastroscopy and from the colon and terminal ileum during colonoscopy with pancolonoscopy (6,7). The absence of gross endoscopic abnormality doesn't rule out clinically significant diseases and hence most study recommends obtaining biopsy sample given the risk of sedation and performing repeat endoscopy outweighs obtaining biopsy samples in pediatric populations (8).

Colonoscopy is routinely performed in case of rectal bleeding to identify attributable causes like juvenile polyps and to confirm the diagnosis of inflammatory bowel diseases in infants and children (9,10). On the other hand, the less common yet important indications of colonoscopy in pediatric patients include screening of neoplastic conditions in long standing inflammatory bowel disease, hereditary polyposis syndrome and allergic gastrointestinal conditions (11-13).

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Locally there is few data regarding the prevalence of gastrointestinal problems associated with various gastrointestinal complaints from in Ethiopia. There is also a paucity of data on the indications, endoscopic findings and diagnostic yield of this procedure. This study was conducted in order to identify demographic and clinical characteristics and related endoscopic findings. Besides, the study also aimed to further investigate the safety and effectiveness of this procedure in pediatric care in our setting.

PATIENTS AND METHODS

A cross-sectional descriptive study was conducted through chart review of all pediatric patients who underwent esophagogastroduodenoscopy (EGD) and colonoscopy performed at Tikur Anbessa Specialized Hospital (TASH) from September 2013 to January 2017.

The data was analyzed using Statistical Package for Social Science (SPSS) version 25.0.

RESULTS

In this study, there were 615 patients, 340 (55.3%) male and 275 (44.7%) female who had endoscopy done. The commonest indication for gastroscopy was bloody vomiting, documents in 186 (44.3%) of the patients and gastroscopic findings were esophageal varices in 159 (37.9%) (Figures 1 and 2). Colonoscopic indication was rectal bleeding in 96 (49.2%) of the patients and findings revealed rectal polyps in 130(66.7%). Of the 615 patients who had endoscopy done, 420 (68.3%) underwent gastroscopy; 308 (73.3%) and 112 (26.7%) of the patients were from urban and rural areas, respectively. Among 195 (31.7%) of the patients who had colonoscopy done, 130 (66.7%) were from urban and 65 (33.3%) were from rural areas.

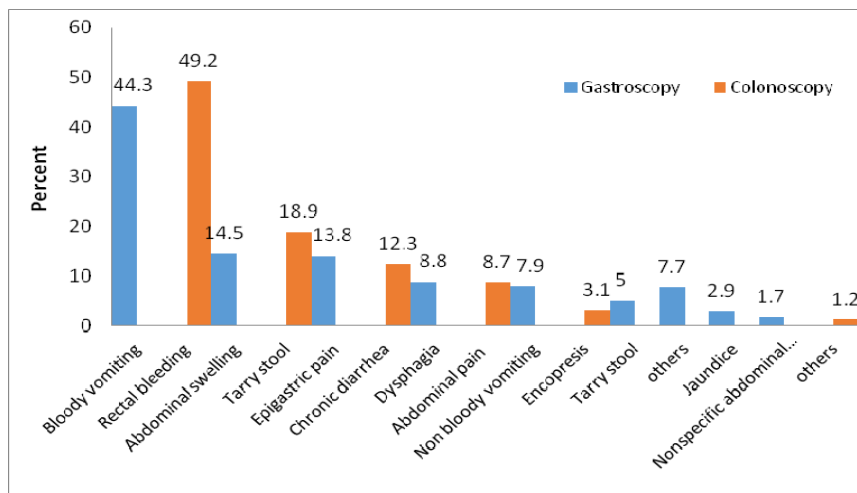


Figure 1: Indications for gastroscopy and colonoscopy in children (0-18years), Tikur Anbessa Specialized Hospital, Addis Ababa, September 2013 to January 2017.

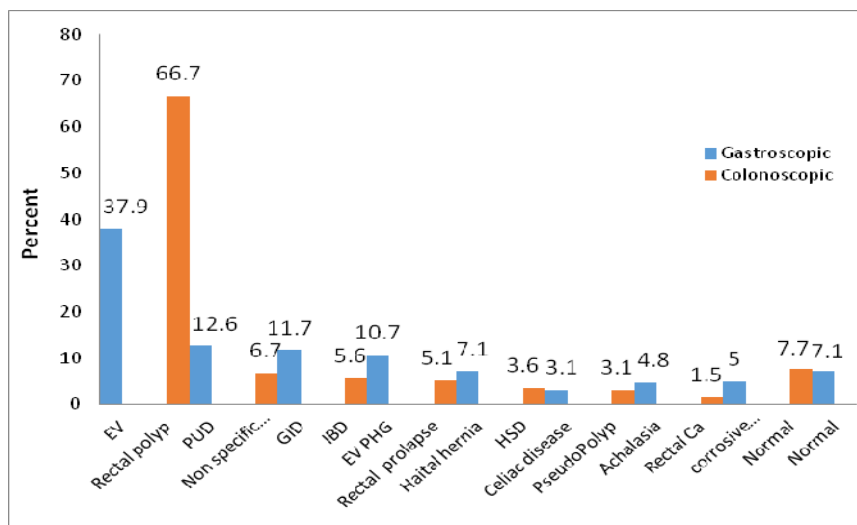


Figure 2: Gastroscopic and colonoscopic findings in children (0-18years), Tikur Anbessa Specialized Hospital, Addis Ababa, September 2013 to January 2017.

Regarding sex distribution, of 420 patients who underwent gastroscopy, males were 220 (52.4%) and females 200 (47.6%). Most age groups were between 5-12 years 150 (35.7%), and 13-18 years, 146 (34.8%).

Of those, the 195 patients who underwent colonoscopy, males were 132(67.7) and females 63(32.3), and distribution by age showed that most were in the age groups 5-12 years, 102 (52.3%) and 13-18 years,

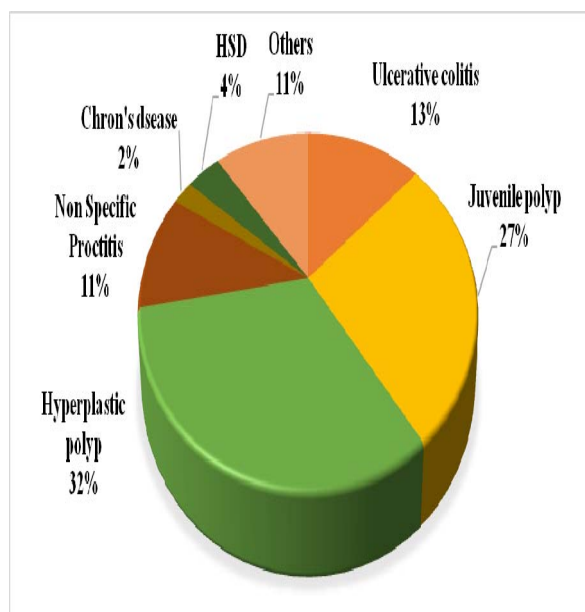
Pathological examination of the specimens (biopsy) was done for 130 patients and the result revealed Juvenile polyps (27%) and hyperplastic polyps (32%) were found the commonest biopsy finding in those who underwent colonoscopy.

Non-specific proctitis (11%), ulcerative colitis (inflammatory bowel disease) (13%) and Crohn's disease (2%) were other common biopsy results

Table 1: Age and sex distribution of children (0-18years) who had endoscopy Tikur Anbessa Specialized Hospital, Addis Ababa, September 2013 to January 2017.

Procedures done	Age (years) Age (Years)	Number (%)	Male Number (%)	Female Number (%)
Gastroscopy	0-1	27(6.4)	11(2.6)	16(3.8)
	2-4	97(23.1)	82(19.5)	15(3.6)
	5-12	150(35.7)	103(24.5)	47(11.2)
	13-18	146(34.8)	101(24.1)	45(10.7)
	Total	420(100)	297(70.7)	123(29.3)
Colonoscopy	0-1	13(6.7)	8(4.1)	5(2.6)
	2-4	47(24.1)	39(20)	8(4.1)
	5-12	102(52.3)	64(32.8)	38(19.5)
	13-18	33(16.9)	21(10.8)	12(6.1)
	Total	195(100)	132(67.7)	63(32.3)

Figure 3: Colonoscopic biopsy result in children (0- 18years). Tikur Anbessa Specialized Hospital, Addis Ababa, September 2013 to January 2017.



DISCUSSION

In this study, the commonest indications for endoscopic procedures were bloody vomiting which were documented in 186 (44.3%) of the patients followed by abdominal swelling in 61 (14.5%) and epigastric pain/discomfort in 58 (13.8%). This is similar to findings from studies done in Pakistan where the indications for endoscopy were failure to thrive followed by bloody vomiting (7), and a Korean study with indications for endoscopy being abdominal pain, non-bloody vomiting and bloody vomiting (1).

In a study done in Uganda, epigastric pain and dyspepsia were the commonest indications for gastroscopy with bloody vomiting being the 3rd most common indication accounting for 8.9% of the indications (8).

Unlike other studies, the commonest gastroscopic findings in our study were esophageal varices, which were findings in 159 (37.9%) of the patients followed by peptic ulcer diseases seen in 53 (12.6%) of them and inflammatory gastric diseases (reflux gastritis, gastropathy, chronic gastropathy, portal hypertensive gastropathy (PHG) in 49 (11.7%), This observation concur with that of the Pakistan study (7), where gastropathy is the commonest finding accounting for 14.5% of the observations.

Duodenal lesions were the most common (24.4%) - duodenal ulcer (14.8%), duodenal scarring (5.2%) and duodenitis (4.4%) followed by gastritis (12.6%) and bile reflux gastropathy (5.2%) - in a study done in Uganda (8). Commonest complaint for colonoscopy in our study was rectal bleeding which was 96 (49.2%) that is congruent with 48.8% and 56.6% in a study from Korea & China as commonest presenting symptoms respectively (1,6), and 41 (39.8%), the commonest complaint in study done in Nigeria (12).

Regarding the commonest colonoscopic findings, rectal polyps was diagnosed in 130 (66.7%) of our patients, nonspecific inflammations, in 13 (6.7%) and inflammatory bowel disease (IBD) in 11 (5.6%). In a study done in China, polyps (42.9%) and IBD (16.5%) were the two most common positive findings (5).

Pathological examination of the specimens revealed polyps (Juvenile and hyperplastic) were found in 77 (59%) and were the commonest biopsy result in those who underwent colonoscopy. This is in line with the study results from Iran that showed that the most common pathological findings were juvenile polyp seen in 84 (23.1%) followed by lymphoid nodular hyperplasia in 55 (15.2%) and solitary rectal ulcers in 25 (6.9%) of the patients (10,14).

CONCLUSION

This study clearly demonstrated that the commonest indication for gastroscopic and colonoscopic procedures were bloody vomiting and rectal bleeding, respectively. Esophageal varices, polyps, nonspecific inflammations and IBD were the commonest gastroscopic and colonoscopic findings, indicating that endoscopy is a better procedure for the diagnosis and treatment of gastrointestinal problems in children. For children with upper and lower gastrointestinal bleedings, unexplained abdominal pain and constipation, endoscopic evaluation is important.

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