Section: Miscellaneous

Original Research Article

STUDY OF CLINICAL PROFILE AND MANAGEMENT OF GASTRO-ESOPHAGEAL REFLUX IN CHILDREN OF MAHARASHTRA POPULATION: RETROSPECTIVE STUDY

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Abstract

Background: Gastro-esophageal reflux is a disease that is common in children from 2 to 18 years of age. Hence, to rule out the etiology and treat it therapeutically or surgically. **Materials and Methods:** 31 (thirty-one) children below the age of 12 with gastro-esophageal reflux were studied. The PH value was monitored by Synectics semi-disposable Mono-crystalline antimony PH electrodes. A barium study was carried out to find out anatomical (congenital) variations. An endoscopic study was done to visualize gastro-esophageal junction. A biopsy was done to rule out the etiology of the abnormality in the mucous membrane of the gastro-esophageal junction. **Result:** 28 (90%) had regurgitation and vomiting, 2 (67.7%) had symptoms due to esophageal pain, 9 (29%) had feeding difficulty, 3 (9.6%) had haematemesis, 2 (6.4%) had anemia, and 4 (12%) had apnea or apparent life-threatening episodes that were treated surgically. **Conclusion:** The present gastro-esophageal reflux (GER) study will certainly help the pediatrician or pediatric surgeon to diagnose the severity of GERD and treat it therapeutically or surgically to avoid morbidity and mortality in children.

INTRODUCTION

Gastro-esophageal reflux disease (GERD) is a long-term (chronic) digestive disorder. It happens when stomach contents flow back (reflux) into the esophagus.[1] GER is more common in babies under 2 years old, but GER is also observed in most cases in children 2 to 14 years old.[2]

Since many years, upper gastro-intestinal endoscopy has been a technique widely used for diagnostic and therapeutic purposes for the evaluation of esophageal, gastric or duodenal diseases. Upper gastro-intestinal endoscopy has become the common complementary test for investigating gastric diseases due to its accessibility and safety, which assures extensive clinical utilization in patients with esophageal or gastric diseases.[3] Spinal muscular atrophy is a neuro degenerative disease affecting motor functions that may compromise feeding, swallowing ability, gastro-intestinal motility, and nutritional status.[4]

Hence, an attempt was made to monitor PH and endoscopic visualization to find out the etiology of GER in children.

MATERIALS AND METHODS

31 (thirty one) children below the age of 12 admitted to the Government Medical College & Hospital in Aurangabad, Maharashtra in 2011 to 2012 were studied.

Inclusive Criteria

Patients presented gastro-esophageal reflux and had symptoms suggestive of reflux. The presence of a reflux index > 10%, as evidenced by continuous lower esophageal PH monitoring (or the presence of reflux esophagitis), was included in the study.

Exclusion Criteria

Patients with congenital anomalies of the GIT were excluded from the study.

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Methods: Every study underwent barium / endoscope studies. The clinical history and physical findings of gastro-esophageal reflux were noted. Failure to thrive was defined as weight falling across two centiles over the previous six months, or <80% of expected weight or height. 24 hours later, lower esophageal PH was monitored. Synectics semi-disposable mono-crystalline antimony PH electrodes with an external diameter of 2mm and silver/silver chloride cutaneous electrodes were used.

The position of the tip of the PH probe was confirmed by an Antero-posterior chest X-ray. Symptoms related to reflux and their relationship to feeding were observed and recorded. A reflux index of more than 10% was considered positive for reflux. A barium study was done to exclude anatomical (congenital) abnormalities of the upper gastro-intestinal tract. An upper gastro-intestinal endoscopy was performed if symptoms related to reflux esophagitis were present clinically. The endoscopic appearance of the gastric mucosa of the gastro-esophageal junction was observed for evidence of reflux and graded as per the criteria of Sausage and Miller.[5] A biopsy was taken from the mucosa of the gastro-esophageal junction for Histo-pathological examination.

The patients were treated according to the stepwise approach of pediatric gastroenterology and nutrition (EPSGAN).[6] Prokinetics were prescribed in the majority of cases, usually in conjunction with the antagonist. Omeprazole is used in those with severe reflux esophagitis or persistence of symptoms after 4 to 6 weeks of adequate prokinetic and H2 antagonist therapy. Anti-reflux surgery was performed on those children who had a life- threatening presentation or whose reflux was not responding despite adequate medical management. The clinical response of these children was reviewed during follow-up for 12 months.

The duration of the study was from September 2011 to September 2012.

Statistical analysis: Various Clinical profiles of gastro-esophageal reflux were classified by percentage. The statistical analysis was performed in SPSS software. The ratio of male and females was 2:1.

RESULTS

[Table 1] Clinical profile of gastro-esophageal reflux in pediatrics was 28 (90%) children having regurgitation and 21 (67.7%) having recurrent vomiting due to esophageal pain, 11 (35.4%) epigastric and abdominal pain, 9 (29%) feeding difficulty, 6 (19.3%) irritability, Sandifer Sutcliffe syndrome, 8 (25%) failure to thrive, 4 (12%) respiratory symptoms, 3 (9.6%) haematemesis, 2 (6.4%) anemia, and 4 (12%) apnea/apparent life-threatening episodes.

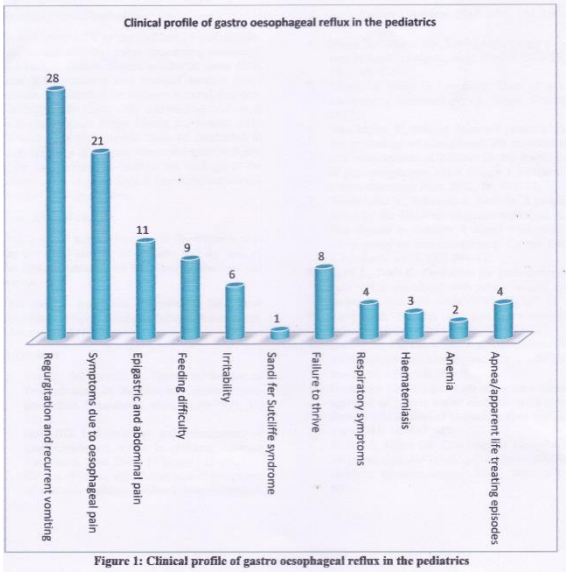

Figure 1: Clinical profile of gastro oesophageal reflux in the pediatrics

Table 1: Clinical profile of Gastro esophageal reflux in the pediatrics.

SI. No.	Clinical profile	No. of patients	Percentage (%)
1	Regurgitation and recurrent vomiting	28	90
2	Symptoms due to esophageal pain	21	67.7
3	Epigastric and abdominal pain	11	35.4
4	Feeding difficulty	9	29
5	Irritability	6	19.3
6	Sandifer Sutcliffe syndrome	1	1
7	Failure to thrive	8	25
8	Respiratory symptoms	4	12
9	Hamatemesis	3	9.6
10	Anaemiae	2	6.4
11	Apnea/apparent life treating episode	4	12

DISCUSSION

Present study of clinical profile and management of GER in children of the Maharashtra population. 28 (90%) had regurgitation and recurrent vomiting, 21 (67.7%) had symptoms due to esophageal pain, 11 (35.4%) had epigastic and abdominal pain, 9 (29%) had feeding difficulty, 6 (19.3%) had irritability, 1 (1%) had Sandifer Sutcliffee Syndrome, 8 (25%) had failure to thrive, 4 (12%) had respiratory symptoms, 3 (9.6%) had haematemesis, 2 (6.4%) had anaemia, 4 (12%) apnea, / apparent life-threatening episodes [Table 1]. These findings are more or less in agreement with previous studies.[7-9]

Gastro-esophageal reflux is considered a common disease in children and most of the children with mild

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reflux would be treated by a primary care physician. The life-threatening episodes of reflux were observed as they were delayed in referral and hence treated surgically. In the Barium study, small hiatus hernias were observed. It was confirmed in previous studies as well.[10] Continuous monitoring of PH level has greatly increased the understanding of gastro-esophageal reflux diagnostic value,[11] but previous studies have not reached complete agreement on the PH value study due to its fluctuating rates in 39% of children.[12] Typical symptoms of GER were also encountered in barium studies of the esophagus, a reflux index of <10%. It is reported that the reflux index was in esophagitis. It may be due to esophageal carionma. Hence, GER with esphagitis is a serious problem in 50% of children with GER. It was also observed that GER improved with age without treatment. Most infants with GER have an uncomplicated course, don't have anatomical, metabolic, neurological or infectious causes, and will not benefit from unnecessary and invasive procedures. In some cases, it causes morbidity and is potentially life-threatening.

CONCLUSION

In Present study, GER in the children of Maharashtra was studied with PH value monitoring endoscopy and barium studies. It was noted that some GER were life-threatening and required surgical intervention, and most of the children responded to prokinetics, while others were self-limiting and cured with advancement of age. Hence, the present study demands that such clinical trials be conducted in large numbers of patients where the latest technologies are available to confirm the findings of the present study because little is known about the etiology of GER in children.

Limitation of study:

Owing to the tertiary location of the research center, the small number of patients, and the lack of the latest techniques, we have limited findings and results.

This research paper was approved by the ethical committee of Govt. Medical College, Aurangabad, Maharashtra 431003.

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