



Prevalence of Gastro Oesophageal Reflux Disease (GERD) in Pediatric Asthma Patients

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ABSTRACT

Introduction: The gastro esophageal reflux disease (GERD) is one of the co morbidity found with asthma. Its prevalence is three times more in asthma patients as compare to general population. This was a hospital based study to find out the prevalence of gastroesophageal reflux disease in pediatric asthma patients and their response to proton pump inhibitor.

KEYWORDS : Children, Asthma, GERD

Introduction: The gastro oesophageal reflux disease (GERD) is one of the co morbidity found with asthma. Its prevalence is more in asthma patients as compare to general population, 22% v/s 4.8% (1). In children with asthma it varies from 19.3% - 80% (1). In Indian children the prevalence is estimated to be 38.75% (2). This study was conducted at tertiary care hospital, to estimate the prevalence of GERD in children with asthma.

Aims/Objectives: 1.To find out the prevalence of GERD in pediatric asthma patients and to correlate it with severity of asthma. 2.To observe the response to antacid (Lansoprazole).

Method: It was a prospective observational study and was conducted in pediatric asthma OPD of a tertiary care hospital, from October 2009 – November 2011. After approval of ethics committee and obtaining informed consent of parents, children with asthma were enrolled in the study.

Inclusion criteria: Pediatric asthma patients in age group 3-15 years (Asthma diagnosed by a physician)

Exclusion criteria:

- History of previous gastro-intestinal or diaphragmatic surgery.
- History of gastro- intestinal or neurologic disease.
- On antacid therapy or on oral bronchodilators like Aminophylline.

Method: After enrolment, patient's detail history regarding sign & symptoms of GERD was obtained and their thorough clinical examination was done. If symptomatic they were recruited for gastro oesophageal scintigraphy to find out presence of gastro oesophageal reflux. Two hundred- four hundred micro curri of 99m T-DTPA was mixed with normal saline and administered through feeding tube. Dynamic sequential images (1/30seconds) were acquired for 20mnts with gamma camera. Ascent of tracer into oesophagus in more than 2 frames was taken as positive for reflux. Depending upon the number of frames, GER was divided into mild, moderate and severe. Patients with positive history, correlating symptoms and presence of reflux on scintigraphy were diagnosed to have GERD. The global definition of GERD was used to define GERD (3). They were treated with Lansoprazole for 3months and response was observed.

Results: A total 31 patients were included in the study. Maximum numbers of patients (23/31) were between 3-8 years of age with male preponderance. Among the total patients-11 had mild persistent

asthma, 13 had moderate and 07 patients had severe asthma respectively.

Eight out of 31 asthma patients diagnosed to have GERD on the basis of symptoms and presence of GER on scintigraphy. Thus the prevalence of GERD in asthmatic children in this study was found to be 25.8% (**Fig-1**).

On correlation with severity of asthma, prevalence of GERD was found to be increasing from 9.0% in mild asthma to 42.8% in severe asthma.

Table no-1 depicts clinical details and response to Lansoprazole of patients, diagnosed to have GERD.

Discussion:

Gastro oesophageal reflux disease is one of the co morbidity found with asthma. Many studies had shown variable prevalence ranging from 19% to 80% (4, 5). Presence of GERD in asthma patients is known to worsen the night cough and vomiting. In our study the prevalence was found to be 25.8% which correlates with prevalence worldwide. We used clinical symptoms and scintigraphy to diagnose GERD as previously reported by Chopra et al.(2) Sensitivity and specificity of a 1-hour scintigraphy for the diagnosis of GERD are 15% to 59% and 83% to 100%, respectively(6,7) The prevalence was found to be increasing with severity of asthma.(8,9,10)

Proposed mechanisms by which reflux aggravates asthma are airway inflammation by aspirated gastric contents, airway hyper responsiveness triggered by lower airway aspiration of minute amounts of acid, vagal mediated bronchial or laryngeal spasm, and neural mediated inflammation.(11,12)

The response to Lansoprazole in controlling gastric symptoms and nocturnal cough was consistent only in four patients. Similar observations were made by Kiljander and Khoshoo et al (13,14). There is no consistence response of PPI in improving asthma symptoms as seen in the studies done by Littner et al, (15) while in the study done by Sontag et al symptoms of GERD and asthma both improved after surgical treatment. (16)

More randomized control trials are required in this field to see the efficacy of PPI in controlling asthma symptoms.

Conclusion: A high index of suspicion should be kept in patients with severe asthma to rule out GERD. Treatment with PPI may improve nocturnal symptoms in asthmatic patients.

Table-1 Clinical details of patients diagnosed of GERD.

S/N	Age/sex	Asthma-Severity	Night cough	Vomiting	Abdominal pain		Chest burn	GER by scintigraphy	Response to PPI
1	5Y/M	Mod.	+	+	+	+	-	Mod+	+

2	3Y/M	Mod	+	+	-	-	+	Mild+	+
3	8Y/M	Sev	+	+	-	-	-	Sev+	+
4	10Y/M	Sev	+	-	+	+	-	Mild+	-
5	7Y/M	Mod	+	+	-	+	-	Mod+	+
6	5Y/M	Mod	+	-	+	+	-	Mod+	No FU
7	9Y/F	Sev	+	+	+	-	-	Sev	-
8	3Y/F	Mild	-	-	-	+	-	Mild+	No FU

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