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Incidence of Gastro Esophageal Reflux Disease (GERD) Related Manifestations of Pulmonary Symptoms.

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Abstract:
Objective: The main aim of this study was to find the incidence of GERD related manifestations of pulmonary symptoms.
Study Design: It is a cross sectional study.
Place and Duration: This study was carried out in a period of 8 months from March 2018 to October 2018 in OPD and emergency of Mayo Hospital Lahore.
Materials and Methods: Patients between the ages of 21-70 years who had burning sensations in the esophagus were included in this study and both males and females were included in this study without any gender discrimination. A carefully designed proforma was used to collect the data of the patients which included age, sex, address and physical symptoms like cough and heart burn. Patients confidentiality was maintained as a top priority. Only those patients were included who were willing to take part in this study. Informed consent was taken from all the patients.
Results: Among the 150 patients included in this study respiratory symptoms like dry cough was seen in 15 (10%) of the patients, hoarseness of voice was seen in 12 (8%) of the patients with acidic reflux. Asthma symptoms were seen in 51 (34%) of the patients. Less incidence of nasal symptoms around 2% was seen. No respiratory symptoms were seen in 54 (36%) of the patients.

Keywords: GERD, Pulmonary symptoms

Introduction: The reflux of the acidic chime which produces burning symptoms in the esophagus is defined as GERD. It is among the most commonly occurring diseases worldwide. The disease usually prolongs because the symptoms are mild and the patients ignore it until the complications occur. GERD can be easily diagnosed on the basis of clinical history. With appropriate treatment of GERD remarkable improvement in the pulmonary symptoms is seen. Incidence of pulmonary symptoms associated with GERD is very high and can lead to the onset of COPD and asthma.

The main aim of this study was to find the incidence of GERD related manifestations of pulmonary symptoms. Larynx, pharynx and nose are most commonly affected and show clinical symptoms associated with GERD. Recurring cough, bronchoconstriction, lung edema and inflammation that leads to the onset of asthma, hoarseness of voice, pneumonia, breathlessness and inflammation of the bronchi are the most common manifestations seen as pulmonary symptoms. Irritation of the post nasal mucosa, pharynx and larynx which is either vagal associated or direct contact with the acidic secretions of the stomach can produce these symptoms.

1- Aspiration of the gastric or esophageal contents in tracheobronchial tree and larynx on micro or macro levels.
2- Remarkable impairment of sensory system of larynx and pharynx was seen even with small amount of acidic exposure. In following types of patients GERD related cough should be identified.
   - Patients not on ACE inhibitors.
   - Patients who do not smoke.
   - Have normal chest X-ray.

   Cough not relieved even after the treatment with post nasal drips.

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Pulmonary manifestations in GERD	
Symptoms	**%age of patients**
Present	**64%**
Absent	**36%**

Tables:

Pulmonary manifestations	Number of patients with GERD (years)					Total no of patients included in study
Age	20-30	31-40	41-50	51-60	61-70	
Dry cough	07	02	03	02	01	15
Hoarseness	05	02	03	01	01	12
Both dry cough and hoarseness	08	02	03	02	00	15
Asthma	27	07	08	05	04	51
Nasal symptoms	02	01	00	00	00	3
No pulmonary manifestations	-	-	-	-		54
						150

Discussions: A very little attention has been paid in the past to the GERD associated asthma but recently a lot of advances has been done. Around 20% of the patients are affected and third leading cause of the chronic cough is GERD. Bronchoconstriction caused by the acidic reflux involves different mechanisms like hyper reactivity of the bronchi, axonal reflexes, vagal reflex and micro aspiration. High pressure difference between thoracic and abdominal cavity, autonomic dysfunction and hiatal hernia are the main predisposing factors in asthmatics that lead to GERD. Literature review showed that GERD in patients with chronic pharyngitis, laryngitis and chronic sinusitis and support the consideration of GERD in patients with upper airway symptoms recalcitrant to treatment. A causal link between incidence of GERD and its pulmonary symptoms have been shown by these investigators. Increased incidence of pulmonary symptoms in patients with GERD is required to support this hypothesis. In our study patients who had heart burn were selected instead of upper airway abnormalities. Subjects included in this study were unaware of the fact that collected symptomatic data was used to study the relation between GERD and associated pulmonary symptoms.

Limitations:

1- 24 hours PH monitoring is required in patients with GERD to find the exact incidence of associated pulmonary symptoms but its not widely available.
2- Increased duration of the study and larger number of patients can also increase the accuracy of the results.

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