

# EMPIRIC THERAPY IN OTOLARYNGOLOGIC MANIFESTATIONS OF GASTROESOPHAGEAL REFLUX DISEASE

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**Abstract-** The review of literature shows that a strong relationship exists between the symptoms of otolaryngologic diseases and gastroesophageal reflux disease (GERD). It is commonly observed that an extended physical examination is needed to determine the occurrence of GERD. This non-randomized, prospective quasi-experimental study was performed to clinically verify the relationship between otolaryngologic symptoms and GERD and to show that a search for GERD is necessary under conditions that patients do not respond to initial routine treatment for otolaryngologic symptoms. Extended physical examination of patients who had been referred to an Ear, Nose and throat (ENT) hospital revealed that GERD-related laryngeal signs were present in 55 patients. Otolaryngologic symptoms detected in decreasing order of occurrence were posterior nasal drip, chronic pharyngitis, chronic cough, hoarseness, ear pain, chronic throat clearing and pruritus in the ear. Furthermore, 66% of the patients had gastrointestinal symptoms that included heartburn, dysphagia, odynophagia, aspiration, globus hystericus, dyspepsia and foreign body sensation. Signs observed during the physical examination were posterior pharyngitis, granular pharyngitis, inflamed arytenoids, contact granuloma, and pachyderma laryngitis. We administered proton pump inhibitor to all patients and recommended to change their life style. The follow up program was a 6-month period. Only 53 patients showed up for the follow up. The overall response rate to the therapeutic regimen was 83%. In treating otolaryngologic patients, especially those who are resistant to routine treatments, a careful extended physical examination including an indirect laryngoscopy for diagnosis of GERD is recommended.

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**Key words:** Gastroesophageal reflux disease, otolaryngology, proton-pump-inhibitor, laryngoscope, physical examination

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## INTRODUCTION

It has been estimated that as many as 30 to 60% of the population suffers from gastroesophageal reflux disease (GERD). The clinical manifestations of GERD include conditions that are occult, chronic,

intermittent, and life threatening. It is now recognized that GERD may produce at least two different constellations of symptoms and sequels: 1) esophageal symptoms and 2) throat complaints, mainly in those who do not have heartburn (1-4).

In the past, GERD was considered a condition confined to gastrointestinal tract but recently it has become a subject of considerable interest in otolaryngology. Otolaryngologic manifestations of GERD may be nonspecific and could easily be missed and a high index of suspicion is essential for diagnosis and treatment of this condition (1, 3).

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## GERD and otolaryngologic symptoms

The symptoms of 182 otolaryngologic patients with GERD-related conditions were carefully elicited by Smullen *et al.* (3). The most common symptom experienced by the patients was hoarseness (71%). The remaining symptoms, in decreasing order of occurrence, were chronic cough (51%), globus (47%), heartburn or regurgitation (43%), chronic throat clearing (42%), and difficulty with swallowing (35%). A total of 57% of patients denied heartburn. pH monitoring was used for diagnosis and the abnormalities found included carcinoma (71%), stenosis (66%) and reflux laryngitis (60%). Rosanowski *et al.* reported that the most common symptom was globus sensation and it was suggested that when routine treatment of otolaryngology diseases fails the physician should treat patient for GERD (5). In another study, Book *et al.* concluded that symptoms most related to GERD include throat clearing (98.3%), persistent cough (96.6%), heartburn/dyspepsia (95.7%), globus sensation (94.9%) and voice quality change (94.9%) (6). The most frequent signs in physical examination were arytenoid erythema (97.5%), vocal cord erythema (95.7%) and posterior commissure hypertrophy (94.9%). The authors recommended that if one of the above mentioned signs is observed, therapeutic intervention for GERD should be considered.

Ulualp designed a study to determine the characteristics of pharyngeal acid reflux, referred to as GERD (7). The author concluded that the prevalence of pharyngeal acid reflux was significantly higher in patients with isolated posterior laryngitis compared to patients with other isolated otolaryngologic disorders and in controls. Contencin *et al.* described the relationship between GERD and otitis media or otalgia (8). Bouchard *et al.* evaluated patients with persistent otolaryngologic symptoms and their relationship with GERD and recommended that a study should be performed in children when usual treatments for recurrent otitis, dysphonia and laryngeal papillomatosis have failed, even under conditions that pH monitoring has not been found beneficial (9).

For evaluating patient with GERD, Wong suggested an algorithm based on empiric treatment with proton pump inhibitor (PPI), followed by histamine type 2 receptor antagonists and if no

improvement was noted, the patient must undergo 24 h pH monitoring (10). Nostrant and Rabine have emphasized that the diagnosis of GERD must be based on (a) clinical suspicion and (b) patients response to empiric acid suppression, when no other cause of symptoms was found (11). Kaynard and Flora have indicated that a high-dose trial of a PPI is becoming an accepted diagnostic technique for uncomplicated and mild or moderate GERD (4).

This study was designed to evaluate the role of GERD in otolaryngologic patients who did not respond to usual treatments. The method used in this study is different from that introduced by Kaynard (4) as the PPI was used for all patients including mild, moderate and severe GERD. In comparison with the study designed by Nostrant (11), this study does not require any specific testing procedure, clinical or otherwise, outside the treatment requirements, to prove that the symptoms are due to GERD.

## MATERIALS AND METHODS

This prospective study was carried out based on an extended physical examination of patients who were referred to a tertiary ENT specialized hospital (Amir-Alam Hospital). The study started in October 2001 and finished in May 2002. Most of the patients had long lasting ENT-related complaints and had not responded to routine treatment. Physical examination was used to diagnose GERD at the first visit. GERD was considered present if the patients had displayed signs such as posterior pharyngitis, red and inflamed arytenoids, contact ulcer or granuloma, vocal cord erythema and pachyderm laryngitis. Subsequently, a comprehensive history was recorded and patient was included in the study. The study did not involve any sampling.

After inclusion, the two components for GERD treatment that included changing of life style and PPI (omeprazole, 20 mg BD) were implemented. Patients were followed for six months. The visits were conducted on the monthly basis. For evaluating response to therapy during the six-month period, objective (physical examination) and subjective (patients expressing their feelings about their

symptoms) observations were used for data collection. When patients did not respond positively after 8 weeks, the dosage of PPI was doubled. If there was no subjective response after 6 month of standard treatment, the patient was categorized in the non-responder group. Patients who did not respond to the treatment were not followed and were not considered to receive any other medication.

In addition to patient's demographic characteristics, gastrointestinal symptoms such as heartburn, dysphagia, odynophagia, aspiration, globus pharyngeus, dyspepsia and foreign body sensation was recorded. ENT-specific symptoms that were recorded included hoarseness, chronic throat clearing, chronic sore throat, otalgia, itching sensation in the ear, headache, halitosis, disguise, fatigue in vocalization and snoring. In addition, conditions like otitis media with effusion, chronic otitis media, vertigo, rhinitis, sinusitis, pharyngeal signs (posterior pharyngitis), laryngeal signs, red and inflamed arytenoids, contact ulcer or granuloma, carcinoma, stenosis and pachyderma laryngitis were included. True vocal cord nodule and polyp were documented and previous treatments and duration of symptoms for any of the noted conditions that had been detected prior to this study was also noted down.

## RESULTS

Physical examination revealed GERD related laryngeal signs in 55 patients. During the treatments, two patients refused to follow the program and did not participate further in the study. Out of remaining 53 patients, 23 were male and the rest were female; the mean age was 35.66 years with standard deviation (SD) of 14.79 years; maximum and minimum of ages were 59 and 8 years, respectively.

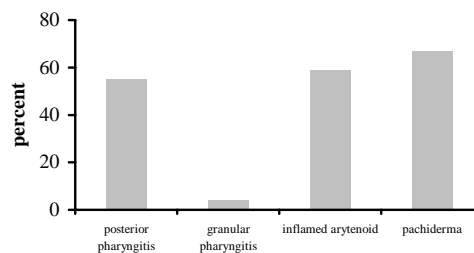
The ENT-specific problems (Table 1) were categorized as hoarseness in 24 (45%), chronic throat clearing in 21(40%), chronic pharyngitis in 19 (36%), chronic cough in 25 (47%), ear pain in 21 (40%), pruritus in the ear in 18 (34%), headache in 20 (38%), PND in 31 (58%), dry mouth in 15 (28%) and halitosis in 15 (28%). There were 10 (19%) cases of rhinitis and 8(15%) patients with sinusitis. Only 35 patients (66%) had GI symptoms which included heartburn in 18 (35%), dysphagia in 7 (13%),

**Table 1.** Otolaryngologic symptoms

Symptom	Percent
Hoarseness	45
Chronic throat clearing	40
Chronic pharyngitis	36
Chronic cough	47
Ear pain	40
Pruritus in the ear	34

odynophagia in 9 (17%), aspiration in 4 (7%), globus hystericus in 12 (23%), dyspepsia in 10 (19%), foreign body sensation in 11 (21%) and other symptoms in 5 (9%).

As shown in figure 1, the laryngeal and pharyngeal physical examination of patients indicated posterior pharyngitis in 31 (58%), granular pharyngitis in 3 (6%), inflamed and red arytenoids in 34 (64%), contact ulcer or granuloma in 5 (9%), carcinoma in 3 (5%), stenosis in 3 (5%), pachyderma laryngitis in 37 (70%) and laryngeal nodule in 1(1.9%). It must be noted that all 53 patients had at least one of the above-mentioned laryngeal problems. The mean duration from onset of symptom(s) to diagnosis was 2.91 years with SD of 0.568 year (minimum of 1 month and maximum of 20 years). The response rate after six-month treatment was 83% (n=44). Nine patients (17%) were in the non-responding group and 2 patients were cancelled out from the follow-up program. The treatment response ratio is shown in figure 2. Interestingly, two cases of serous otitis media that had not responded to previous routine treatments as well as surgical procedures, responded positively to the antireflux therapy. Also, in one case a patient with tinnitus responded to antireflux therapy. There was no relationship between duration of symptoms and response to treatment and between site of laryngeal involvement and symptoms.



**Fig. 1.** Results of physical examination of patients.

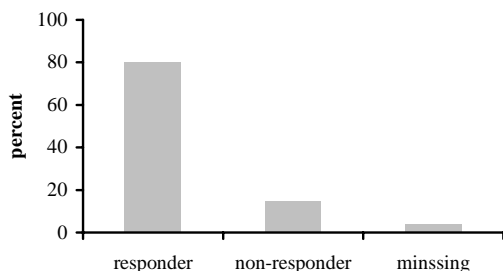


Fig. 3. Response to treatment.

## DISCUSSION

Patients with GERD suffer from a range of unpleasant symptoms and hoarseness is the most common of them. It has been estimated that up to 50% of patients with laryngeal complaints have primary GERD related disorder (1). While in this study the most common symptoms were found to be chronic cough (47%, n=25) and hoarseness (45%, n=24), another study has reported the most common symptoms as hoarseness (71%) and chronic cough (51%). From the 53 patients studied, 65% denied having any heartburn as compared with 57% found in another study (2). However, the overall GI symptoms in this study were determined to be 66%. After 6 months of antireflux management, 83% of patients were satisfactorily treated as compared with 85% reported by another study (1). Out of all, 17% of patients did not respond to antireflux treatment, however, GERD could be absolutely ruled out in these patients. It is hypothesized that reflux of alkaline bile and proteolytic gastric enzyme to upper aerodigestive tract is the main cause and must be investigated in future studies (12).

In conclusion, GERD introduces new outlook on etiology of ENT symptoms. Otolaryngologist should consider GERD manifestation, especially when the symptoms are resistant to routine treatments, and careful otolaryngologic diagnostic workup is always necessary. It is found that omeprazole treatment test is efficient and with this approach serious complications such as carcinoma and stenosis could be prevented.

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