

Manifestation and response of Laryngopharyngeal reflux to treatment in Kurdistan -IRAQ

***Dr.Said Mustafa Said FICMS, DLO**

ABSTRACT

BACKGROUND: In 1972 complete description of the inflammation of posterior third of the vocal cords was done, with barium swallow confirming Gastro Esophageal Disease [CRED] & subsequent successful symptomatic treatment with antacid. The possible association between GERD & chronic laryngitis was initially known as acid laryngitis.²

OBJECTIVE: To record the common presentation symptoms of laryngopharyngeal reflux LPR in Kurdistan- Iraq. To study the significance of fibro optic laryngoscope in diagnosis and improvement of laryngopharyngeal reflux [LPR] and to evaluate the effect of medical therapy on these nonspecific symptoms and Laryngoscopic finding.

METHODS: A prospective study was conducted over a two year period at Rizgary teaching hospital, Kurdistan/Iraq; on 132 patients who presented primarily with Laryngopharyngeal symptoms .They were evaluated using special questionnaire for recording these symptoms: persistent chronic cough, globus sensation, throat clearing, voice change, regurgitation, heartburn, symptoms of peptic ulcer disease, and any other non specific respiratory symptom. These symptom and Laryngoscopic findings pre and post anti-reflux therapy were recorded. Esophagogastro - duodenoscopy findings were also recorded but only on presentation.

RESULTS: A total of 132 patients were evaluated over a two year period .Respiratory symptoms at presentation were persistent irritative cough [92%], itchy throat [85%], globus pharynges [83%], and cricopharyngeal spasm [57%]. Endoscope findings revealed gastroduodenitis in 5%, non specific gastritis in 9%, duodenal ulcer in 2%, and normal findings in 62.7%, while Laryngoscopic finding were mainly posterior commissure injection 82%, vocal cord edema 74%, laryngeal erythema 77% and subglottic edema 24%. Patients were treated medically with antacids, H2 antagonists, proton pump inhibitors and were followed up and reexamined by laryngoscope; all data about improvement in symptom and in the laryngeal sign by Laryngoscopic findings were collected following anti-reflux therapy and showed significant improvement in both ,all were analyzed in special figures and tables.

CONCLUSION: Reflux laryngitis and LPR should be a differential diagnosis in patient with pharyngeal and laryngeal symptoms not associated with upper respiratory disease in the presence or absence of GERD or peptic ulcer symptom, dyspepsia, regurgitation. The management should be multidisciplinary. Laryngoscopic finding were of value in the diagnosis of the changes in laryngeal mucosa pre and post medical treatment by Proton Pump Inhibitors empirical therapy.

Key word: - Laryngopharyngeal reflux, Reflux laryngitis, GERD

Al - Kindy Col Med J 2010 ; Vol .6 . No. (1)p:

Introduction:-

Nonspecific laryngitis is an extremely common condition which present with wide spectrum of sign & symptoms like dysphonia, throat discomfort, globus sensation throat clearing, halitosis or otalgia³. Paroxysmal laryngospasm with out warning even during sleep⁴, Since the late 1960s, gastro esophageal acid reflux has been implicated in the pathogenesis of several extra esophageal disorders, including laryngitis⁵.

Various symptoms, functional and structural abnormalities that involve the larynx, and other contiguous structures positioned proximal to the esophagus constitute the spectrum of these disorders. Patients presenting with extra esophageal reflux-related signs and symptoms may account for up to 10% of an otolaryngologist's practice⁶.In 1972. The theory further developed by using medical treatment in stepwise fashion to improve laryngeal function⁷. Although lifestyle modifications are important, the

*from the Department of ENT, Hawlear Medical College, Hawlear university. Department of ENT, Rezgary Teaching Hospital, Erbil.

Correspondence to :

Dr.Said Mustafa Said

Correspondence Address to : Dr.Said Mustafa Said _ **E- mail:** Email elaf3d@yahoo.com **Mob.** 07504563829

pragmatic approach would still to be use some form of medication for acid suppression⁸.

The gold standard investigation seems to be 24-hour pH monitoring; however its regular use prior to treatment would probably be impractical on a population basis^{9,10}. it has been argued that pH monitoring is unnecessary^{9,11} & false negative rate can be as high as 50%, so it would appear that the development of clinical practice in empirical prescription of proton pump inhibitor [PPIs] in patients with Laryngopharyngeal symptoms with or without gastroesophageal reflux symptoms^{12,13,14}

Although these symptoms mentioned above were previously thought to constitute the spectrum of GERD, Laryngopharyngeal reflux is today thought to be a distinct entity and should be managed differently¹⁵

Failing to recognize LPR is dangerous, while over diagnosis of LPR can lead to unnecessary costs and missed diagnosis. Inflamed laryngeal tissue affected by LPR is more easily damaged from intubation, has a high risk of progressing to contact granulomas, and may evolve to symptomatic subglottic stenosis¹⁶

Two hypotheses exist about how gastric acid precipitates extra esophageal pathologic response. The first purports is direct acid-pepsin injury to the larynx and surrounding tissues. The second hypothesis suggests that acid in the distal esophagus stimulates vagal-mediated reflexes that result in bronchoconstriction¹⁷. Several signs of laryngeal irritation, which are generally considered to be signs of LPR, were found to be present in a high percentage of asymptomatic individuals on laryngoscopic examination¹⁸ The most common symptoms used by ENT physicians to diagnose GERD-related laryngitis included globus, throat clearing, cough, and hoarseness; sore throat and dysphagia were considered less useful¹⁹ Belfasky et al (2002) developed an 8-item clinical severity scale to document LPR findings during fiber optic laryngoscopy, which were quantified as the reflux finding score (RFS) [see form 2]. The following 8 items are assessed to aid in the diagnosis of LPR: - Pseudosulcus vocalis, Ventricular obliteration, Erythema/hyperemia, Vocal fold edema, Diffuse laryngeal edema, Posterior commissure hypertrophy, Granulomatous/granulation, Thickened laryngeal mucus²⁰.

Regardless of the clinical severity, as treatment, all patients are counseled on dietary (low fat diet, etc.) and lifestyle modifications (avoidance of carbonated beverages, alcohol, tobacco, etc), with twice-daily H2-receptor antagonist therapy or once-daily PPI treatment were effective for many patients.²¹ ,if the patient does not have symptomatic improvement, the Proton pump inhibitors dose may be doubled or an H2-receptor antagonist may be added in the evening^{21,22}

Aim:- . The purpose of this study was:-

1. To record the common presentation symptom of laryngopharyngeal reflux LPR in Kurdistan-Iraq.
2. To study the significance of fibro optic laryngoscope in diagnosis and improvement of laryngopharyngeal reflux [LPR] .
3. To evaluate the effect of medical therapy on these nonspecific symptoms and in the Laryngoscopic finding.

Method:-

This Prospective, randomized study has been done on [132] patients , age (32-58) years ,72 patients[55%] were male & 60 patients[45%] were female, presented primarily with persistent dry irritative annoying cough , laryngeal symptoms such as hoarseness [voice problem], and bouts of hiccough, globus sensation, , hawking[frequent throat clearing] , excessive throat mucus ,swallowing difficulty, troublesome of any kind of choking episodes , heartburn, chest pain, dyspepsia or indigestion ,or acid feeling coming up from stomach .A questionnaire was completed for every patient on presentation were scored according to special table prepared called reflux symptom index [RSI]^{20,23} All were presented to outpatient department in Rizgary teaching hospital during the period from May /2006 to may /2008. All patients had clear lungs. Then the patients were examined by a team consisting of an otolaryngologist and a gastroenterologist. Every patient underwent flexible laryngoscopy and upper gastrointestinal endoscopy .A fibro optic laryngoscope type (Karl storz) was used to examine the oropharynx and the larynx under local anesthesia using lignocaine spray &/or gel, the whole mucous membrane from base of the tongue and oral cavity to the subglottic region was inspected concentrating on arytenoids and vocal folds, we concentrated on those signs which had been mentioned on the reflux finding score [RFS]

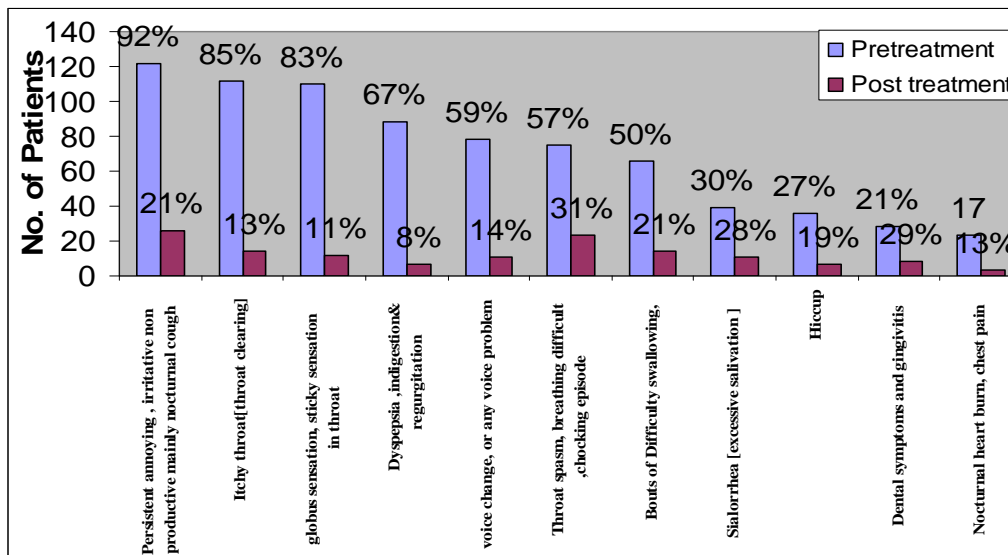
[20]. Then the patients underwent upper gastrointestinal endoscopy in Endoscopy unit of Rizgary hospital (Olympus Gastroscope) under local anesthesia using lignocaine spray) to look for finding consistent with [GERD].. Unfortunately only [111] patients came back , and underwent reexamination by fibroptic laryngoscopy after eight weeks empirical therapy of omeprazole 20 mg BID, our paper identified the laryngologist view concerning the clinical and endoscpoical signs of the [LPR] in KGR and the response to medical therapy. Only the patients with laryngeal symptom of unknown clear cause were involved in the study.

Result:-

Of total 132 patient evaluated over 24 months,72 patients were male, 48 patient eat spicy food 42 were smookrs,and only 22 patient were wearing classical Kurdish uniform which we thought it may have some relation with incidence of [LPR] symptom in [KRG].

Regarding the symptoms on presentation, from 132 studied patients, 122 patients complain mainly from persistent irritative non productive cough [of course associated with two or more other symptoms],112 patients with itchy throat[hawking],110 patients with globus sensation,78 patients with some voice changes, and surprisingly the lowest number of patients 23 had nocturnal heartburn .Only 111 patient came back for reexamination and follow-up which showed significant improvement in LPR symptom [figure 1],[table 1]

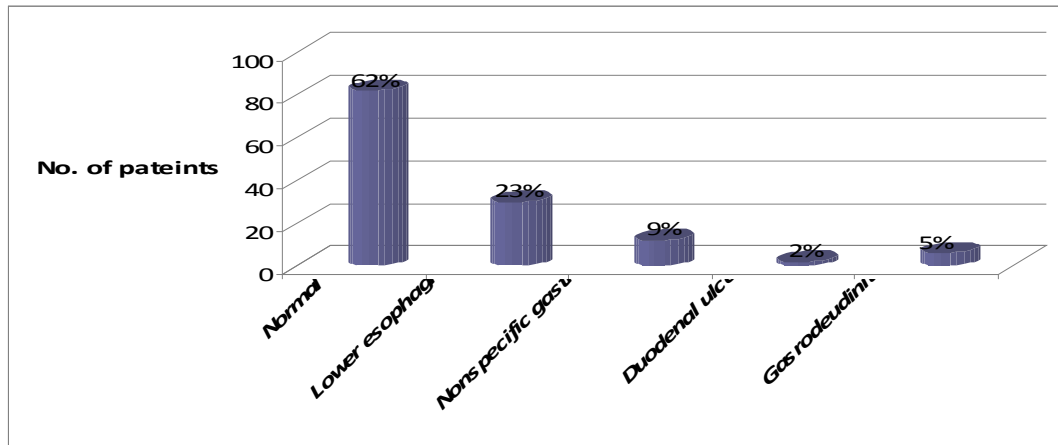
Figure 1 distribution of sample by symptoms at presentation and after treatment



Endoscopic findings :-

82 patients found to be normal and no significant related abnormality were detected, 30 patients with lower esophagitis, and only 2 patients had [D.U.]

Figure 2 disribution of sample by seophagogastrosopic finding on presentation



[30] Patient just simple nonspecific lower esophagitis was the most useful sign to prove the relation between [GERD] and laryngeal symptoms of non laryngeal disease.

Laryngoscopic findings from 132 patients examined, mucosal changes in the form of posterior commissure hypertrophy & injection in

108 patients; hyperemia of laryngeal mucosa and erythema 102 patients, and diffuse laryngeal edema in 98 patients, only 9 patients had normal laryngeal mucosa. While [111] patients came back post medical treatment there was significant laryngeal mucosal improvement [figure 3], [table 2]

Figure 3 distribution of sample by fibroptic laryngoscopic finding pre and post treatment

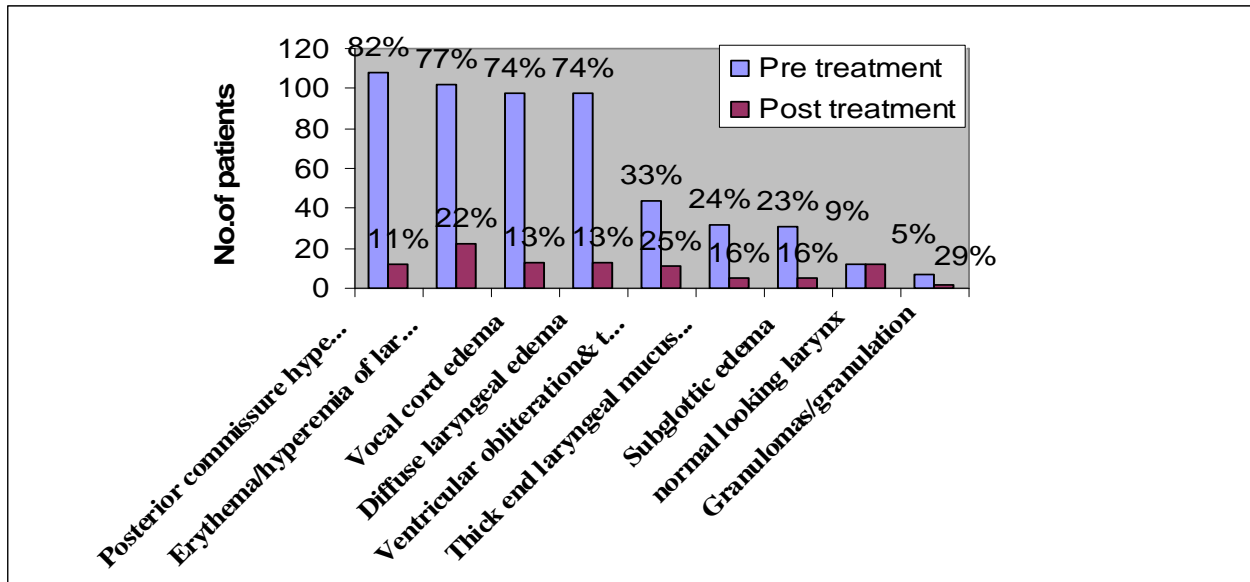


Table 1 distribution of patient by symptom pre and post treatment

	Pre treatment	Post treatment
--	---------------	----------------

Symptoms			Not improved		Improved (no symptom)	
	No.	%			No.	%
Persistent annoying , irritative non productive mainly nocturnal cough	122	92%	20	21%	91	79%
Itchy throat[throat clearing]	112	85%	14	12%	97	88%
globus sensation, sticky sensation in throat	110	83%	12	11%	98	89%
Dyspepsia, indigestion , regurgitation	88	67%	7	8%	81	92%
voice change, or any voice problem	78	59%	11	14%	67	85%
Throat spasm, breathing difficult ,choking episode	75	57%	12	16%	63	84%
Bouts of difficulty swallowing	66	50%	14	21%	52	79%
Sialorrhea [excessive salivation]	39	30%	11	28%	28	72%
Hiccup	36	27%	7	19%	29	81%
Dental symptoms and gingivitis	28	21%	8	29%	20	71%
Nocturnal heart burn , chest pain	23	17%	3	13%	20	87%

Table 2 Distribution of patient by Laryngoscopic finding pre and post treat

Laryngoscopic Finding	No. of patients pre treatment&%		No. of patients post treatment			
			Positive finding (not improved)		Negative finding (improved)	
Posterior commissure hypertrophy& injection	108	82%	12	11%	96	89%
Erythema/hyperemia of lary.	102	77%	22	22%	80	78%
Vocal cord edema	98	74%	13	13%	85	87%
Diffuse laryngeal edema	98	74%	13	13%	85	87%
Ventricular obliteration &	44	33%	11	25%	33	75%
Thickened laryngeal mucus/other any unhealthy looking larvngeal	32	24%	5	16%	27	84%
Subglottic edema	31	23%	5	16%	26	84%
Normal looking larynx	12	9%	12		normal	
Granulomas/granulation	7	5%	2	29%	5	71%

Using statistical package for social sciences SPSS version 15 the average percentage for the symptoms where as follows 45% of the patients have symptoms of LPR of this 73% responded to treatment while 29% did not completely.Regarding the signs 53% of the patients had the signs of LPR of which 82%

responded to treatment while 17% did not all of these figures are sum average.

Discussion:

Since 2001 many papers shows the controversy in the relation between the GERD and laryngopharyngeal symptoms. and the most common presenting signs and symptoms. With the most laryngoscopic feature, and response for the medical treatment. In our study we thought and tried to find any relation between the type of clothes and LPR symptoms and the incidence in KRG, which was 17% wearing Kurdish uniform and we think it was not significant [no previous study to compare]. Study was done by Book DT, Rhee JS, Toohill RJ, Smith TL and published in Laryngoscope. 2002 Aug;112(8 Pt 1):1399-406. On Perspectives in Laryngopharyngeal reflux: an international survey. The study was undertaken to discern the current attitudes and practices of a select cohort of otolaryngologist's in regards to LPR from four hundred fifteen surveys were mailed to members of the American Broncho-Esophagological Association, they found that throat clearing (98.3%), persistent cough (96.6%), The physical examination findings felt to be most related to reflux included: arytenoids erythema (97.5%), vocal cord erythema (95.7%) and edema (95.7%), Fiber optic laryngoscopy was the most commonly performed as the diagnostic visualization procedure (75.7%) and was also considered to be the most sensitive and specific (45.0%). The findings in our study: throat clearing and itchy sensation [85%], persistent annoying cough [92%], laryngeal mucosa Erythema [77%], vocal cord edema [74%] and posterior commissure hypertrophy [82%], .

Charles N. Ford, MD has done a study published in JAMA. 2005; 294:1534-1540 on the Evaluation and Management of Laryngopharyngeal Reflux and to provide a practical approach to evaluating and managing

cases of LPR. They conclude that Laryngopharyngeal reflux should be suspected when the history and laryngoscopy findings were suggestive of the diagnosis. Failure to respond to a 3-month trial of behavioral change and gastric acid suppression by adequate doses of medication dictates need for confirmatory studies... **The same findings almost** we had, 91% of our examined patient by laryngoscope had

significant changes in the larynx & only 9% had normal larynx. Concerning the treatment by PPI we found 79% of patients improved cough, 88% of itchy throat and throat clearing. 85% of voice change. While regarding Laryngoscopic finding, 89% of treated patients got improved there posterior commissure injection..

Amj-Gastroentral, 2006mar. 101(3) =470-8Ahmed TF and Richter from department of Gastroenterology - Cleveland foundation's did separate surveys specifically designed for ENT physician and gastroenterologist with the [GERD] related laryngitis, they concluded that globus and throat cleaning were considered the most useful symptoms in diagnosing [GERD] related laryngitis and laryngeal erythema and edema were considered the most useful sign.

In our study we found, the globus sensation , the non specific irritative cough and throat clearing were the main symptoms while scattered erythematic area over laryngeal mucosa with mild congestion of of posterior commissure &laryngeal edema were the main signs, .

Scand J Gsastroentology 2006Feb; 4/ (2):131-7 Jonaitis L –Ulozav.From Kaunase LIthnamia

Study shows that the laryngeal examination is superior to endoscopy in the diagnosis of laryngopharygeal form of gastroeseophageal reflux disease: They found 3 type of alteration in the mucosal lesion. 1. Epithelium alteration 2. Erythema 3. Edema ,And mostly in interaretenoid area and vocal cords mucosa, endoscpoic esophagitits established in 36 cases out of 108 of total [LF- GERD] patients.

In our study the most mucosal change in sequence were involve the arytenoids with mild - to- moderate edematous and dry mucosa of cords and supraglottic area. While endoscope showed non specific esophagitis [done by the enterologist] recorded in 32 patients out of 132 totals so endoscopy in our study had a non significant value in the diagnosis of [LF-GERD] ,which agree with this study.

Carrtreat , 2006Feb; 9[1]69-74Valz; mf-Nashville-USA division of gastroenterology and

hepatology. Showed that the current recommendation for management of LPR patient call for initial empiric therapy with twice daily proton pump inhibitors [PPI] for two months,.In **our study** there was the same finding in the majority of patient concerning the respiratory

symptoms and laryngoscopic finding in response to [PPI] of two months.fig1,fig3.

Drug s2005; 65suppl.1; 67; 73Rodriguex-Tellezm-seville-spain (vigen Macarena university hospital) , stated that multidisciplinary teams needed to improve and promote understanding the care of patients suffering from supra esophageal symptoms caused by gastroesophageal reflux. **in our study we strongly suggest** the need of team work between gastroenterologist and otolaryngologist in diagnosing and treating all patient with laryngopharyngeal manifestation by advising all patient with non specific irritative cough and globus sensation to have emperical treatment by [PPI] for two months also we ask to examine all those patient with [GERD] and some laryngeal symptoms to exclude any laryngeal sign by otolaryngologist

Conclusion:-

1. Reflux-associated laryngitis and laryngopharyngeal reflux (LPR), common but often times treating physicians can miss this condition and file the symptoms under other diseases so it should be within differential diagnoses in patients with pharyngeal and laryngeal symptoms not associated with upper-respiratory disease in the presence or in the absence of GERD,
2. Management of LPR should be multidisciplinary; it should be teamwork, There should be a strategic plan with patients being followed not only by an otolaryngologist, but a gastroenterologist as well

Acknowledgement

The author is grateful to all the staff in Rizgary teaching hospital [ERBIL],in out patient department, special thanks to professor. Hama Najim Jaf [consultant gastroenterologist ,and to dr Abdul Aziz Mansor [consultant gastroenterologist],thanks also to dr Jamal Habeka [gastroenterologist] all in the same hospital. Thanks to Dr. Namer Altawel [Hawler medical university] for his critical advices concerning data and statistical arrangement.

References

1. Delahunty JE.Acide laryngitis. Journal of Laryngology & Otology.1972; 86:335-42.

2. Ward PH,B,erci G ,Observations on the pathogenesis of chronic non specific pharyngitis and laryngitis. Laryngoscope.1982; 92:1377-82.
3. Kenneth Mackenzie, Chronic laryngitis. Michael Gleeson .Scott-BROWN S Otorhinolaryngology, Head and Neck Surgery .17 Edition. Volume 4 .2008.PP:2262-2263
4. LoughinCJ, KoufmanJA, AverillDB, et al.Acid-inuced laryngospasm in acanin model, Laryngoscope 1996; 106:1506-1509[PubMedChemoPort]
5. Cherry J, Margulies SI: Contact ulcer of the larynx. Laryngoscope 1968 Nov; 78(11): 1937-40[Medline].
6. Koufman JA: The otolaryngology manifestations of gastroesophageal reflux disease (GERD): a clinical investigation of 225 patients using ambulatory 24-hour pH monitoring and an experimental investigation of the role of acid and pepsin in the development of larynx. Laryngoscope 1991 Apr; 101(4 Pt 2 Suppl 53): 1-78[Medline].
7. HansonDG,Conley D, Jiang J, Kahrilas P. Role of esophageal pH recording in management of chronic laryngitis: an overview. Annals of Otology, Rhino logy, & Laryngology-supplement.2000; 184: 4-9.
8. Jankowsji J, Jones R, Delaney B, Dent J. Gastro-esophageal reflux disease. British Medical Journal. 2002; 325:945
9. Postma GN. Ambulatory pH monitoring methodology. Annals of Otology, Rhinology, &Laryngology-Supplement, 2000; 184:10-4.
- 10.. Maier W, Sonthimer J. FischerA, Lohle E.Diagnosticmanagement of pharyngal reflux disease.Endoskopie Heute. 1998; 11:207-13
11. Hanson DG, JianJJ.Diagnosis and management of chronic laryngitis. The American Journal of Medicine. 2000; 108:112S-9.
12. Kamal Pi, Hanson DG, Kahrilas PJ.Ompرازole for the treatment of posterior laryngitis. American Journal of Medicine. 1994; 96:321-6
- 13 .Habermann W, EhererA, Lindbichler F, Raith J, Friedrich G.Ex juvantibus approach for chronic posterior laryngitis: results of short-term pantoprazole therapy. Journal of Laryngology & Otology.1999; 113:734-9.
14. Wong RK, Hanson DG, Waring PJ, Shaw G. ENT manifestation of gastroesophageal reflux. American Journal of Gastroenterology.2000; 95:S15-22

15. Ford CN: Evaluation and management of Laryngopharyngeal reflux. *JAMA* 2005 Sep 28; 294(12): 1534-40[Medline].
16. Maronian NC, Azadeh H, and Waugh P: Association of Laryngopharyngeal reflux disease and subglottic stenosis. *Ann Otol Rhinol Laryngol* 2001 Jul; 110(7 Pt 1): 606-12[Medline].
17. Burton LK, Murray JA, and Thompson DM: Ear, nose, and throat manifestations of gastroesophageal reflux disease. Complaints can be telltale signs. *Postgrad Med* 2005 Feb; 117(2): 39-45[Medline].
18. Milstein CF, Charbel S, and Hicks DM: Prevalence of laryngeal irritation signs associated with reflux in asymptomatic volunteers: impact of endoscopic technique (rigid vs. flexible laryngoscope). *Laryngoscope* 2005 Dec; 115(12): 2256-61[Medline].
19. Ahmed TF, Khandwala F, and Abelson TI: Chronic laryngitis associated with gastroesophageal reflux: prospective assessment of differences in practice patterns between gastroenterologists and ENT physicians. *Am J Gastroenterology* 2006 Mar; 101(3): 470-8[Medline].
20. Belfasky PC, Postma GN, and Koufman JA: The association between laryngeal pseudosulcus and Laryngopharyngeal reflux. *Otolaryngology Head Neck Surg* 2002 Jun; 126(6): 649-52[Medline].
21. Park W, Hicks DM, Khandwala F, et al. Laryngopharyngeal reflux: prospective cohort study evaluating optimal dose of proton-pump inhibitor therapy and pretherapy predictors of response. *Laryngoscope* 2005; 115(7):1230–1238.
22. Peghini PL, Katz PO, Bracy NA, Castell DO. Nocturnal recovery of gastric acid secretion with twice-daily dosing of proton pump inhibitors. *Am J Gastroenterology* 1998; 93:763–767. | Article | PubMed | ISI | ChemPort |.
23. Gregory N. Postma and Stacey L. Haulm Laryngeal and pharyngeal complications of gastroesophageal reflux disease,. *GI Motility online* (2006), doi: 10.1038/gimo46