Management of Laryngopharyngeal Reflux Disease

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Objective: To evaluate the efficacy of medical, dietary and lifestyle modification therapy given to Laryngopharyngeal reflux (LPR) patients.

Setting: Private clinic, Al-Khobar, Saudi Arabia.

Design: Prospective study.

Method: Twenty-two LPR patients were examined and treated by the author. Patients' larynges were evaluated by either video endoscopy, endoscopy only or indirect laryngoscopy. Belafsky Reflux Finding Score (RFS) and Reflux Symptom Index (RSI) were used to assess symptoms, findings and improvements. The patients were treated with 40 mg Proton Pump Inhibitor (PPI), dietary and lifestyle modification therapy for at least 3 months.

Patients were followed up monthly for the first 3 months and then bimonthly for the rest of the year. Improvements were assessed using the RFS and RSI, the scale was from 0-3.

Result: Twenty two patients with suspected LPRD were included in the study, 15 males and 7 females; the mean age was 40 year. Eleven had video endoscopy, 8 endoscopy and 3 indirect laryngoscopy (rigid fibro-optic). The main symptoms were hoarseness, throat clearing, cough and heartburn. The main findings were laryngeal redness, vocal cord (VC) edema, posterior commissure and arytenoid erythema and edema. Thirteen patients were adherent to management and follow up program, nine were excluded. All the 13 patients showed subjective and objective improvement ranging from good to excellent. One patient developed VC polyp and had to be removed surgically. The mean follow up (FU) was 6.5 months.

Conclusion: The study showed that 40 mg PPI (Nexium tablet) per day for at least 3 months combined with diet and lifestyle modification therapy were sufficient to improve the symptoms of laryngopharyngeal reflux. RFS and RSI are excellent tools to assess improvement. Long term FU is needed to achieve a satisfactory outcome.

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Laryngopharyngeal reflux disease (LPRD) refers to the retrograde flow of gastric acid to the laryngopharynx, where it comes in contact with tissues of the upper aerodigestive tract (larynx, pharynx, nasopharynx, eustachian tube, nose and sinuses), causing symptoms and pathologies due to the irritation of the upper aerodigestive tract[1-3]. It has been estimated that up to 10% of patients presenting to otolaryngologist and more than 50% of patients with hoarseness have disease for which reflux is either the primary etiologic agent

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or a significant aggravating factor. LPRD has been observed in 10-30% of asymptomatic patients[1].

LPRD diagnosis is established based on symptoms, clinical and endoscopic findings, response to lifestyle modification therapy and empirical medical treatment, pH monitoring, video endoscopy and esophagoscopy with biopsy[4]. Patients with LPRD are usually treated with diet, lifestyle modification and proton pump inhibitor (PPI)[5].

The aim of this study is to evaluate the efficacy of medical, dietary and lifestyle modification therapy in patients with LPRD.

METHOD

Twenty-two patients with LPRD were seen between April 2007 to November 2008. All the patients were seen and treated by the author. All of them underwent a complete ENT examination. The larynx was examined with video endoscopy, endoscopy or indirect laryngoscopy. The symptoms and findings of patients were assessed using the Belafsky Reflux Finding Score (RFS) and Reflux Symptom Index (RSI). RFS is considered pathological if the score is above 7 and RSI if above 13. All patients have to follow the same treatment, which consists of PPI tablet 40 mg per day (one hour before dinner), dietary and lifestyle modification therapy for at least three months. The diet and lifestyle modification therapy was given to the patient as handout instruction sheet, see table 1.

Table 1: Dietary and Lifestyle Modification Therapy

Dietary Treatment	Lifestyle Modification Therapy
Have a light dinner (not fatty)	Stop smoking and alcohol drinking
Do not drink tea or coffee after dinner	Have an early dinner, at least 4-5 hours before sleeping
Do not eat citrus fruits or/and spicy meals for dinner	Reduce body weight by exercise
Have plenty of water	Sleep on cotton pillow which is 10-15 cm high
	Sleep on side is preferable

The patients were followed up monthly for the first three month and then bimonthly for the rest of the year. At each follow up visit, the larynx was examined, the Belafsky evaluations sheets checked and the treatment plan evaluated. The improvement was assessed using the RFS and RSI and was scaled from 0-4, where 0 means no improvement and 4 excellent improvement, see table 2, 3 and 4.

Table 2: Improvement Outcome

	Excellent	Very good	Good	Mild	Zero
Subjective	7	4	1	1	9
Objective	4	2	4	3	9

zero = patient did not take medicine and follow instructions

Table 3: Reflux Symptom Index (RSI) in LPRD[6]

Within the last month, how did the following problems affect you? *Circle the appropriate response*	0 = No Problem 5 = Severe Problem					
1. Hoarseness or a problem with your voice	0	1	2	3	4	5
2. Clearing your throat	0	1	2	3	4	5
3. Excess throat mucus or postnasal drip	0	1	2	3	4	5
4. Difficulty swallowing food, liquids, or pills	0	1	2	3	4	5
5. Coughing after you ate or after lying down	0	1	2	3	4	5
6. Breathing difficulties or choking episodes	0	1	2	3	4	5
7. Troublesome or annoying cough	0	1	2	3	4	5
8. Sensation of something sticking in your throat or a lump in your throat	0	1	2	3	4	5
9. Heartburn, chest pain, indigestion, or stomach acid coming up	0	1	2	3	4	5
	TOTAL					

Table 4: Reflux Finding Score (RFS) in LPRD[7]

Subglottic edema	0 absent 2 present
Ventricular	2 partial 4 complete
Erythema/hyperemia	2 arytenoids only 4 diffuse
Vocal fold edema	1 mild 2 moderate 3 severe 4 polypoid
Diffuse laryngeal edema	1 mild 2 moderate 3 severe 4 obstructing
Posterior commissure hypertrophy	1 mild 2 moderate 3 severe 4 obstructing
Granuloma/granulation tissue	0 absent 2 present
Thick endolaryngeal mucus	0 absent 2 present

RESULT

Twenty-two patients with suspected LPRD were included in the study. Male to female ratio was 15:7, age ranged between 15 and 68 years; the mean age was 40 year. Sixteen were overweight, obese or morbid obese. Eleven had video endoscopy of the larynx, 8 had endoscopy and the rest (3) had an indirect laryngoscopy. For assessment of symptoms and findings, we used the Belafsky Reflux Symptom Index (RSI) and Reflux Finding Score (RFS). The patients main symptoms were: hoarseness, throat clearing, cough and heartburn. The most common findings were excessive general laryngeal redness, vocal cord edema, excessive saliva, congestion, posterior commissure and arytenoid erythema and edema. Only 13 patients out of the 22 were adherent to the management program and appeared regularly for follow-up because of that nine were excluded. Thirteen patients showed a subjective and objective improvement ranging from good to excellent.

One of the patients developed recurrent inflammatory polyp at the left arytenoid area despite treatment and had been referred for surgical removal twice. She was put on one tablet H_2 receptor antagonist (H_2RA) before bed time in addition to her PPI treatment with good outcome. The follow up period ranged from 3-12 months with a mean of 6.5 months.

DISCUSSSION

The retrograde flow of gastric acid to the laryngopharynx could cause tissue damage. The type and severity of the damage could be best judged and diagnosed through laryngeal endoscopy or better through video endoscopy[8,9]. For the assessment of symptoms and findings caused by the reflux, the Belafsky Reflux Symptom Index (RSI) and Reflux Finding Score (RFS) are of great values[6]. In addition to that, the RSI and RFS are of great help not only for establishing the diagnosis, but also for monitoring the efficacy of treatment[10].

The treatment plan consisted of PPI 40 mg daily, dietary and lifestyle modification therapy. Treatments were continuously evaluated and monitored through the RFS, RSI, laryngeal endoscopy and video endoscopy. The length of treatment is usually variable and it is case dependent. In a recent study, Del Gaudio et al showed that treatment with Esomeprazole 40 mg in addition to lifestyle modification for at least 8 weeks was sufficient to improve laryngopharyngeal reflux symptoms in the majority of patients[12].

In another study, Reichel et al showed, through 24-hours pH monitoring, that once daily 40 mg Esomeprazole for 13-54 days (a mean of 28 days) in addition to lifestyle modification could adequately suppress the acid secretion in a large number of patients[12]. On other hand, Koufman et al recommended that the initial treatment for most LPRD patients is 40 mg PPI for 6 months together with lifestyle modification[13].

All our patients who were adherent to the treatment plan for at least 3 months showed subjective and objective improvement ranging from good to excellent. The improvement in symptoms appeared much faster than the improvement in findings. Belafsky et al showed that in Laryngopharyngeal reflux disease symptoms usually improve before the pathological findings[7]. Schreiber et al showed that the effectiveness of treatment depends on the adherence of patients to treatment plan, the presence of genetic predisposition for reflux and the presence of risk factors[4].

In a recent study by Kiminori showed that not all patients with LPRD respond to PPI treatment equally, some show less response or even a failure, because they may have resistance to anti acid therapy (PPI)[14]. He recently reported a case with noctural gastric acid breakthrough while on PPI therapy. He said "Acid breakthrough could be explained by the absence of the buffering effect of meals after midnight". He advised his patient to take H_2 receptor antagonist (H_2RA) in addition to the PPI therapy before bed time with good result. We have used this therapy in a patient who underwent surgery twice for laryngeal polyp with great success[2].

A reasonable follow up period of at least 2-3 months is required in order to reach a sufficient improvement of symptoms and to be able to assess outcomes[7,11,12].

In this study, the mean follow up was 6.5 months, which was more than enough to reach complete symptoms improvement in all our patients[11,12].

CONCLUSION

The results of this study showed that PPI (Nexium) 40 mg per day for at least 3 months in addition to diet and lifestyle modification therapy is sufficient to improve symptoms of laryngopharyngeal reflux. RFS and RSI are very helpful for evaluating the improvement of symptoms and findings documentation. Long term treatment and follow up are mandatory to achieve a good outcome. It is recommended to organize a multicenter study for laryngopharyngeal reflex in the GCC countries.

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