



Knowledge, Attitudes and Practices of Primary Health Care Physicians with Regard to Laryngopharyngeal Reflux in the Qassim Region of Saudi Arabia

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Authors' contributions

This work was carried out in collaboration among all authors. Author SMA designed the study, wrote the protocol, managed the analyses. Authors RIA, AHA, AAA, AAA, MAA, AAA, MAA wrote the first draft of the manuscript managed the analyses of the study, performed the statistical analysis, managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Many physicians confuse laryngopharyngeal reflux disease (LPR) with gastroesophageal reflux disease (GERD), leading to misdiagnosis of these two diseases. LPR is a common condition among the population, and physicians should be aware of it to save time, effort, resources, and money. The key objective of the study is to assess the level of knowledge, attitudes, and practices of primary care physicians with respect to LPR and its management and presentation in the Qassim region of Saudi Arabia.

Methods: A quantitative observational cross-sectional study was conducted at the primary health care centers in the Qassim region of Saudi Arabia. The sample included willing respondents among the primary health care physicians in these health care centers. Written consent was obtained from each participant before including their data in the study. The data were tabulated and analyzed using SPSS version 25.

Results: The sample consisted of 109 clinicians from different specialties. The average age of the respondents was 44.3 years (standard deviation [SD]: 9.35 years, 95% confidence interval [CI]: 35.7, 52.9) with an average experience of 12.94 years (SD: 8.58 years, 95% CI: 11.3, 14.6). Forty-six percent (46.8%) of the respondents did not agree that there is an association between sinusitis and LPR. About (43.11%) of clinicians said that they always educate patients about LPR, compared to (24.77%) of the clinicians who said that they do not educate patients about LPR.

Conclusions: Clinicians in the Qassim region of Saudi Arabia have relatively good knowledge, attitudes, and practices with regard to LPR.

Keywords: *Laryngopharyngeal reflux; knowledge; attitude; practice; primary health care physicians; Qassim region; Saudi Arabia.*

1. INTRODUCTION

Laryngopharyngeal reflux (LPR) is a medical condition of high prevalence which is underdiagnosed. It has been postulated to be caused by the reflux of gastric acid into the larynx and hypopharynx. [1]. Patients with LPR classically present with the following symptoms: hoarseness, globus sensation, chronic cough, non-productive throat clearing, and mild dysphagia. However, only 43% of LPR patients complain of heartburn or acid regurgitation [2,3].

In addition, there are many factors contributing to LPR, including tobacco use, poor dietary habits, alcohol consumption, and medications such as calcium channel blockers, nitrates, and steroids. Patients with LPR mostly present to their family medicine physicians, demonstrating that family medicine practitioners play important roles in providing a proper diagnosis and treatment in a timely manner [1-5].

The availability of LPR epidemiological data, including that of its prevalence, is limited worldwide. One study conducted in a British population showed that the prevalence of LPR was 34.4% [6], while another study showed that it was 18.8% in the Greek community [7].

Previous studies suggest that LPR has been underdiagnosed; in a study of 105 healthy and asymptomatic individuals, the rate of positive LPR laryngoscopy findings was 86% [8]. Additionally, a meta-analysis of several studies demonstrated that 10 to 60% of normal control subjects had LPR based on pH measurements [9]. In addition, patients with LPR are often diagnosed with gastroesophageal reflux disease (GERD). In a Saudi Arabian study which used the GERD questionnaire (GerdQ) and the reflux scoring index (RSI) scoring systems, 71% of patients with confirmed GERD were found to also have LPR [10].

In comparison to LPR, GERD is caused by leak of gastric contents to oesophagus due to transient decrease in tension of the lower oesophageal sphincter. Patient with GERD present with heart-burn and/or acid regurgitation [11].

The diagnosis of LPR depends on patient symptoms and laryngoscopy findings, such as true vocal fold edema, pseudosulcus, and posterior laryngeal edema. [12] There are multiple methods that can assist in diagnosing LPR, including laryngoscopy, RSI, ambulatory pH monitoring, pharyngeal pH monitoring, and impedance monitoring [1].

LPR can also result in many complications, including laryngospasm, Reinke’s edema vocal cord polyps, vocal cord granulomas, subglottic stenosis, and otitis media with effusion [13-19]. One of the most serious complications is glottic carcinoma, which is the result of LPR inducing the expression of cyclooxygenase-2 mRNA [20].

LPR treatment strategies include lifestyle modifications (weight loss, tobacco and alcohol avoidance, and modification of meal habits) and medications (proton pump inhibitors [PPIs] alone or in combination with nocturnal H2 receptor blockers and/or neuromodulator agents); however, in refractory cases, laparoscopic antireflux surgery could also be another treatment option [5].

A study has shown that family physicians had greater awareness of LPR symptoms, while trainee physicians were more knowledgeable of the relationship between GERD, LPR, and LPR diagnosis. Additionally, family physicians had a more appropriate approach to LPR when compared to other physicians. In addition, the study concluded that LPR awareness was the most significant factor in LPR diagnosis [21].

Many physicians confuse LPR for GERD, leading to misdiagnosis of these two entities. Sometimes, LPR is misdiagnosed as GERD, and this is due to the similarity of the symptoms of these two diseases. LPR and GERD have the same treatment method; however, their complications are different. In the literature, there are several studies suggesting that some physicians occasionally misdiagnose LPR as GERD.

LPR is a common condition among the population, and physicians should be aware of it to save time, effort, resources, and money that needed for diagnosis and treatment the patient with LPR. The objective of the study is to assess the level of knowledge, attitudes, and practices of primary care physicians in the Qassim region with regard to LPR and its presentations, complications, and management.

2. SUBJECTS AND METHODS

A quantitative observational cross-sectional study was conducted at the primary health care (PHC) centers in the five main cities (Bridah, Unaizah, Ar Ras, Al Mithnab, and Al Badayea) of the Qassim region of Saudi Arabia. The study included willing respondents drawn from the

population of primary health care physicians. The subjects were administered a questionnaire consisting of 29 items pertaining to the demographic profile, knowledge, attitudes, and practice of primary health care physicians. A questionnaire was created by investigators and pilot study was done among 10 participants who were asked to answer the questionnaire and then report their feedback. After that, it was sent to 3 experts to review and their recommendations was considered.

3. RESULTS

3.1 Demographics

The study involved 109 clinicians with a mean age of 44.3±9.35 years. The average experience of the respondents was 12.94±8.58 years. Sixty-four (58.7%) of the respondents had a medical degree, while only 10 (9.17%) of the respondents had a PhD. The demographic data of the subjects are summarized in Table 1.

Table 1. Subject demographic information (N=109)

Variable	Frequency (%)
Gender	
Male	57 (52.3)
Female	52 (47.7)
Marital Status	
Married	98 (89.9)
Single	11 (10.1)
City	
Buraiday	33 (30.3)
Unaizah	27 (24.8)
Ar Ras	29 (26.6)
Al Badayea	11 (10.1)
Al Menthnab	9 (8.3)

3.2 Knowledge

A summary of the subjects’ responses regarding their knowledge of LPR is shown in Table 2. Forty-eight percent (48%) of the respondents agreed that hoarseness is the most common symptom for LPR as compared to (25.6%) who disagreed and the same percentage who were not sure. However, (46.8%) of the respondents did not agree that there is an association between sinusitis and LPR, compared to (28.44%) of respondents who agreed and (23.9%) who were unsure. More than (60%) of the respondents said that they agreed that additional tests should be carried out for LPR once symptoms are suggestive of LPR.

Table 2. Summary of subject responses to the questionnaire items on LPR knowledge, attitudes, and practices

Knowledge	Agree n (%)	Neutral n (%)	Disagree n (%)
LPR is a common problem.	51 (46.78)	31 (28.44)	27 (24.77)
Additional tests are needed for LPR.	70 (64.2)	25 (22.9)	14 (12.84)
LPR has definitive diagnostic criteria.	50 (45.87)	44 (40.36)	15 (13.76)
Hoarseness is the most common presentation of LPR.	53 (48.6)	28 (25.6)	28 (25.6)
There is an association between otitis media and LPR.	37 (33.94)	35 (32.11)	37 (33.94)
LPR can lead to paralysis of the vocal cords.	34 (31.19)	33 (30.27)	42 (38.52)
There is an association between sinusitis and LPR.	31 (28.44)	26 (23.85)	52 (46.78)
Infection is implicated in the pathogenesis of LPR.	49 (44.95)	37 (33.94)	23 (21.1)
Attitudes			
I think that LPR leads to complications of major concern.	47 (43.11)	29 (26.6)	33 (30.27)
I think that hemoptysis is a warning sign associated with LPR.	61 (55.96)	33 (30.27)	15 (13.76)
I think that LPR is underdiagnosed in Saudi Arabia.	60 (55)	34 (31.19)	15 (13.76)
I think that primary prevention of LPR is important.	71 (65.13)	24 (22.01)	14 (12.84)
I think PHC centers are suitable for LPR diagnosis and treatment.	46 (42.2)	23 (21.1)	40 (36.69)
I think that population awareness of LPR needs to be improved.	69 (63.3)	27 (24.77)	13 (11.92)
Practices			
I start with lifestyle modifications as a treatment for LPR.	63 (57.79)	20 (18.34)	26 (23.85)
I always refer the LPR patient to otolaryngology.	51 (46.78)	35 (32.11)	23 (21.1)
The first medication that I prescribe for LPR is an antacid.	59 (54.12)	29 (26.6)	21 (19.26)
I advise patients to use herbal medicine to relieve LPR symptoms.	31 (28.44)	51 (46.78)	27 (24.77)
I have always educated patients about LPR.	47 (43.11)	35 (32.11)	27 (24.77)

*primary health care (PHC) centers
Laryngopharyngeal reflux (LPR)
gastroesophageal reflux disease (GERD)
proton pump inhibitors [PPIs]*

3.3 Attitudes

A summary of the subjects' responses regarding their attitudes towards LPR is shown in Table 2. In general, respondents were most likely to agree with the attitude statements in the questionnaire. For instance, (65%) of the respondents thought that LPR primary prevention is an important measure in eradicating the disease, while about half of the respondents thought that LPR is underdiagnosed in Saudi Arabia. In addition, the highest percentage of the respondents (43.11%) thought that LPR leads to complications of major concern compared to (30.27%) who disagreed and (26.6%) who were unsure. Additionally, (63.3%) of the respondents thought that population awareness of LPR needs to be improved, compared to just 13 (11.9%) who disagreed.

3.4 Practices

A summary of the subjects' responses regarding their LPR practices is shown in Table 2. Overall,

respondents were most likely to agree with the LPR practice statements. For instance, more than half (54.12%) of the respondents prescribed antacids as a first-line medication for LPR, compared to (19.26%) who did not. However, the largest proportion of clinicians responded neutrally when asked whether they would advise using herbal medicine to relieve LPR symptoms, compared to (24.77%) who advised against them and (28.44%) who recommended them. The largest proportion of clinicians (43.11%) said that they always educate patients about LPR, compared to (24.77%) of the clinicians who said that they do not.

4. DISCUSSION

The present study incorporated a convenience sampling technique to obtain the views of the respondents who were clinicians of in primary health care (PHC) centers. The hypothesis of interest was that LPR knowledge among clinicians in Saudi Arabia is low. There were virtually equal numbers of male and female

clinicians in the study, which helped in the balancing of any gender opinions in the study. An important aspect of the present study is the fact that the average level of experience of the clinicians was more than 10 years, which indicates that the responses were based on good clinical experience, and the opinions given were likely to be well-informed.

From the descriptive analysis, there appeared to be generally good knowledge among physicians, as can be seen from the percentage of physicians who provided correct responses to the knowledge-testing questions. Essentially, more than half of the respondents responded correctly to the knowledge-testing questions. However, the findings also show that most clinicians did not agree that sinusitis is significantly associated with LPR, which is incorrect since the link between sinusitis and LPR is well established [22]. In addition, the largest proportion of respondents (44.95%) thought that infection contributes to LPR pathogenesis. However, research has shown that LPR is caused by gastric acid reflux into the larynx and hypolarynx [1].

Knowledge dictates the attitudes of people towards a particular subject. This was also shown in the attitudes of the respondents, where on average the largest proportion of respondents answered the attitude items correctly. In an interesting finding that reflects the expert opinion of the respondents, more than half of the respondents thought that there is a need for increased public awareness of LPR and its prevention methods. A significant proportion of respondents agreed that LPR can result in complications of major concern to patients, which is in line with the extensive body of literature stating that LPR can lead to serious complications [13-18]. The respondents also generally thought that primary prevention is crucial for the prevention of LPR.

Our analysis also showed that most of the respondents answered the practice items correctly. The majority of respondents agreed that LPR should be treated with lifestyle modifications and antacid medications. These two modalities are considered the mainstays of LPR treatment [5].

While the findings of the present study could be instrumental in setting groundwork for future LPR studies, its primarily descriptive design limits the generalization of the results. This is also in line

with the fact that convenience sampling was used.

5. CONCLUSION

In conclusion, the present study was conducted to investigate the knowledge, attitudes, and practices of physicians and clinicians with regards to LPR in Qassim, Saudi Arabia. While the study hypothesized that knowledge would be poor, the findings of the study interestingly showed relatively good knowledge, attitudes, and practices among the clinicians. This good result is important for diagnosis and management of such obscure conditions like LPR.

CONSENT AND ETHICAL

Ethical approval was granted by the national bioethics committee of the Qassim region prior to the study, and written consent was obtained from each participant. The data were tabulated and analyzed using SPSS version 25.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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