Supplementary Fig. 1. A survey of how Asian otolaryngologists manage laryngopharyngeal reflux

Number of years in practice:
Place of practice: Academic – Private (selection of one or both)
Subspecialty training, if any:

Laryngology	Head & Neck
Pediatric Otolaryngology	Rhinology
Otology	Other

(selection of one or both)

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1. Definition and epidemiology (3)

Q1. What do you think about the relationship between laryngopharyngeal reflux (LPR) and gastroesophageal reflux disease (GERD)? (selection of one response)

1. They are two different diseases with regard to pathophysiological mechanisms.
2. They share pathophysiology, but are two different diseases with regard to the clinical presentation.
3. LPR is an unusual manifestation of GERD.
4. I don't know.

Q2. According to your experience, what's the incidence of LPR in outpatients consulting the general consultation of ENT department? (Physician must write the response)

1. ……

Q3. Which of the following conditions are associated with LPR? (several possible answers): selection of one or several responses

1. Bronchial hypersensitivity
2. Chronic rhinosinusitis
3. Acute otitis media
4. Chronic otitis media
5. Eustachian tube dysfunction
6. Reinke's edema of the vocal folds (polypoidcorditis)
7. Vocal fold nodules
8. Vocal fold hemorrhages and polyps
9. Laryngotracheal stenosis
10. Recurrent sore throat
11. Chronic nasal obstruction
12. Chronic cough
13. Chronic voice disorders

2. Clinical presentation (4)

Q4. Please rate each of the following symptoms in terms of their relationship to reflux (Scale: 1 to 5, where 1=highly related, 3= somewhat related, 5=not related) (cf previously=scale 1, 2, 3, 4, 5)

1. Heartburn
2. Stomach acid coming up/regurgitation
3. Troublesome cough
4. Cough after lying down/after meal 80
5. Globus sensation 73
6. Hoarseness/voice disorder
7. Throat pain
8. Odynophagia
9. Dysphagia
10. Chest pain
11. Accumulation of throat sticky mucus or postnasal drip
12. Throat clearing 79
13. Tongue burning
14. Halitosis
15. Breathing difficulties

Q5. Please rate each of the following signs in terms of their relationship to reflux (Scale: 1 to 5, where 1=highly related, 3= somewhat related, 5=not related) (cf previously= scale 1, 2, 3, 4, 5)

1. Laryngeal/arytenoid erythema
2. Hypopharyngeal and/or oropharyngeal erythema
3. Anterior tonsillar pillar erythema
4. Vocal fold erythema
5. Subglottic erythema
6. Subglottic edema
7. Posterior commissure edema
8. Posterior commissure inflammatory granulations
9. Postcricoid edema
10. Hypo- oropharyngeal wall edema
11. Vocal fold edema
12. Laryngeal ventricular edema
13. Tonsil pillars edema
14. Vocal fold lesions (i.e. nodules, polyps, leukoplakia, ulceration, granuloma)
15. Endolaryngeal sticky mucus
16. Uvula erythema/edema
17. Coated tongue
18. Lingual tonsil hypertrophy

Q6. Do you use some clinical tools (questionnaires) to assess LPR symptoms or signs in your routine patient care? (select one response)

1. Yes

2. No
3. Sometimes

Q7. According to your experience, what is the proportion of LPR patients with heartburn and/or stomach acid coming up? (select one response)

1. 10%–20%
2. 20%–30%
3. 30%–40%
4. 40%–50%
5. 50%–60%
6. 60%–70%
7. >70%

3. Diagnostic approach (3)

Q8. Which of the following adjunctive diagnostic tests do you most commonly obtain to further validate or investigate your diagnosis of laryngopharyngeal reflux? (Rank as many tests as you obtain, starting with 1 being the most commonly obtained and 12 being the least commonly obtained; please stop numbering when every test.)

1. None. I only consider symptoms of LPR to make the diagnosis
2. None. I only consider symptoms & signs of LPR to make the diagnosis
3. None. I consider symptoms & signs and positive response to an empiricaltherapeutic trialto confirm the diagnosis.
4. Esophagogastroduodenoscopy.
5. Transnasalesophagoscopy.
6. Esophageal manometry.
7. Single probe pH-monitoring
8. Dual probe pH-monitoring (esophageal & pharyngeal probes)
9. Dual probe pH-monitoring (proximal and distal esophageal probes)
10. Intraluminal multichannel pH-impedance monitoring
11. Oropharyngeal pH-monitoring (Restech)
12. Pepsin detection in sputum (Peptest)
13. I refer the patient to the gastroenterology department

Q9. What's the place of gastrointestinal (GI) endoscopy in the management of LPR? (select one or several responses)

1. All patients must have GI endoscopy
2. All patients with heartburn or stomach acid coming up must have GI endoscopy
3. All elderly patients must have GI endoscopy
4. All patients with reflux disease refractory to medical management must have GI endoscopy ?
5. Patients whose symptoms require long-term PPI must have GI endoscopy ?
6. I think that GI endoscopy is not important for LPR
7. I don't know

Q10. If you do notuse pH-monitoring testing as part of your practice, what are the barriers that have kept you from doing so? Please rank in order of importance, from 1 to 8 (1=most important barrier, 8=least important barrier). If you do perform pH-monitoring, please skip this question.

1. Cost of the technique
2. Patient scheduling/convenience
3. Patient tolerance
4. Do not believe it adds meaningfully to patient care
5. Not enough time
6. I don't know the benefit of pH-monitoring
7. Unclear on appropriate indications
8. Unfamiliar with interpretation

4. Treatment (10)

Q11. What are the drugs that you usually use for the treatment of presumed LPR? (you can select several choices) (select one or several responses)

1. Proton pump inhibitors once daily
2. Proton pump inhibitors twice daily
3. Alginate (Gaviscon®, etc.)
4. Magaldrate (Riopan®, etc.)
5. Antihistamine/H2 blocker (Ranitidine®, etc.)
6. I don't know because I refer the patient to the gastroenterology department.
7. Other: ……

Q12. In practice, do you systematically prescribe diet and behavioral changes for the treatment? (select one response)

1. Yes
2. No

Q13. How long do you initially treat your patients in order to evaluate for response? (select one response)

1. 4 weeks
2. 5–8 weeks
3. 2–3 months
4. 4 months
5. 6 months
6. >6 months
7. Other:……..

Q14. What's the most important clinical outcome for the therapeutic response? (select one response)

1. Symptom improvement
2. Findings improvement
3. Both symptom and finding improvements

4. Improvement of pH-monitoring findings
5. Other: ……..

Q15. What is your impression of the % of patients who respond to treatment? (write the response)

1. …….

Q16. What do you make after the therapeutic period if some/a few symptoms persist? (select one response)

1. I prescribe medication for a long period.
2. I make additional examination (i.e. gastrointestinal endoscopy, pH-impedance monitoring, oesphagealmanometry, etc.) to confirm the diagnosis.
3. I just prescribe diet & behavioral changes.
4. I refer the patient to the gastroenterology department.
5. I refer the patient to the digestive surgery department for fundoplication.

Q17. In the LPR population, what are the proportions of non-acid reflux and mixed reflux? (write the response)

1. Non-acid reflux (biliary): ……;
2. Mixed reflux: …….
3. I don't know

Q18. According to your experience, what is the treatment of biliary (non-acid) reflux? (select one response)

1. Proton pump inhibitors (PPIs)
2. Alginate (Gaviscon®)
3. Magaldrate (Riopan®, etc.)
4. Association between PPIs, Alginate (Gaviscon®, etc.), Magaldrate (Riopan®, etc.) and/or other ?
5. Surgery (fundoplication)
6. Strict diet

Q19. For patients with mild LPR, what do you prescribe? (select one response)

1. Diet and behavioral changes
2. Proton pump inhibitors
3. Diet, behavioral changes and proton pump inhibitors
4. Other medical treatment
5. Nothing

Q20. What's the most important factor explaining the resistance to treatment? (select one response)

1. Biliary reflux
2. Lack of compliance of patient
3. The severity of the reflux
4. The poor dietary habits and lifestyle of the patient
5. I don't know
6. Other: ……

5. Skills (1)

Q21. Last question: do you think that you are adequately knowledgeable and skilled about LPR?(select one response)

1. Yes
2. No
3. I don't know