中文題目：咽喉逆流會惡化台灣人胃食道逆流疾病患者的生活品質
英文題目：Laryngopharyngeal Reflux Negatively Impacts the Quality of Life in Taiwanese with Gastroesophageal Reflux Disease
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Introduction: Gastroesophageal reflux disease (GERD) is defined as a condition that develops when reflux of stomach contents causes troublesome symptoms and/or complications. The manifestations of GERD are classically described as heartburn and reflux, which are often referred to as 'typical GERD.' However, GERD may also present atypically and is referred to as extraesophageal syndrome, also laryngopharyngeal reflux (LPR), by the Montreal definition. In 1996, Koufman proposed the term to designate LPR symptoms, signs, or tissue damage resulting from aggression of the gastrointestinal contents in the upper aerodigestive tract. LPR is the result of retrograde flow of gastric contents to the laryngopharynx which causes chronic or intermittent laryngopharyngeal symptoms such as hoarseness, dry cough, sore throat, globus pharyngeus, throat-clearing or postnasal drip. LPR occurs most frequently in daytime and in the erect position which differs from GERD where reflux occurs more when supine or during nighttime. LPR symptoms were reported by 58% of patients with classic symptoms such as regurgitation/reflux or substernal chest pain and, in these patients, LPR had a negative impact on quality of life (QOL). There are two proposed possible etiological mechanism for LPR that can act simultaneously: local chemical irritation on the pharyngolaryngeal mucosa or stimulation and vagal reflex from lower esophageal tissue irritation.

Dent et al reviewed the prevalence of reflux esophagitis in large scale studies conducted in either general population or subjects undergoing health check. They noticeably found that the prevalence of reflux esophagitis was between 9% and 24.6% among Taiwanese undergoing health check. Recently, a community-based study also found that 25% of 1238 residents in Southern Taiwan fulfilled the diagnostic criterion of GERD based on The Chinese GERD questionnaire (GERDQ), a validated disease-specific instrument developed and validated in Chinese with a sensitivity of 82% and a specificity of 84%. Although, the reasons of extraordinary high prevalence of GERD in Taiwan remain elusive, many factors have been associated with GERD such as obesity, smoking, excessive alcohol consumption, irritable bowel syndrome, social deprivation, and use of anti-cholinergic drugs.

In 2002, Belafsky et al developed the Reflux Symptom Index (RSI), a self-administered nine-item questionnaire, designed to assess various symptoms related to LPR. Each item is scaled from 0 (no problem) to 5 (severe problem), with a maximum score of 45 indicating the most severe symptoms. An RSI > 13 is considered abnormal and strongly indicative of LPR. Since the introduction of RSI, many studies have shown the reliability and consistency of the method in various populations throughout the globe, establishing the method as a very useful diagnostic tool in every day practice. Feng GJ et al have found that laryngopharyngeal pH monitoring and RSI scoring have the same value in diagnosing LPR disease. The aim of this study was to evaluate the clinical characteristics of Taiwanese GERD patients with LRP using three self-administered questionnaires at gastrointestinal outpatient department.

Aim/Objective: To determine the clinical characteristics of Taiwanese GERD patients with laryngopharyngeal reflux(LPR) using three self-reporting GERD and LPR related questionnaires at gastrointestinal outpatient department

Methods: We recruited 91 patients with symptoms of GERD who visited gastrointestinal outpatient department of Taichung Veterans General Hospital, Chia Yi Branch. Three self-administered questionnaires were used to evaluate patients' quality of life and exclude GERD and LPR. The questionnaires include RSI, GerdQ and GERD-health related quality of life. Reflux Symptom Index (RSI), a self-administered nine-item questionnaire, designed to assess various symptoms related to LPR. Each item is scaled from 0 (no problem) to 5 (severe problem), with a maximum score of 45 indicating the most severe symptoms. An RSI > 13 is considered abnormal and strongly indicative of LPR. GerdQ, a patient centered-self assessment questionnaire, is made to assist health care professionals. The GerdQ is a 6-item tool developed to contribute to GERD diagnosis based on the symptoms found in patients who attend at primary care. One advantage of this questionnaire is that it was developed from 3 questionnaires that assess different aspects of GERD: the questionnaire for reflux disease (reflux disease questionnaire), the scale for assessment of gastrointestinal symptoms (gastrointestinal symptom rating scale) and the reflux disease impact scale (gastroesophageal reflux disease impact scale). In this study patients with GerdQ score < 8 were excluded. Fifteen-items GERD health related quality of life questionnaire was used, calculated by summing the individual scores to questions 1-15. Greatest possible score (worst symptoms) = 75 and lowest possible score (no symptoms) = 0.

Exclusion criteria for participation in the study were current upper respiratory tract infections and known laryngopharyngeal malignancies. For the purpose of this study LPR diagnosis was based on RSI score > 13 as proposed by Belafsky et al. GerdQ < 8 was excluded. Thus 51 (20 RSI score > 13 and 31 RSI score $\leqq$ 13) duly completed questionnaires were appropriate for statistical analysis. Mann-Whitney U test was used for statistical analysis. We compared the different clinical characteristics between patients with GerdQ score $\geqq$8 and LPR > 13 and $\leqq$ 13. Variables included: age, GERD symptom duration (y), body mass index (BMI) and 15-item GERD health related QOL score. A p value < 0.05 was considered to be statistically significant.

Results: Only patients with GerdQ socre $\geqq$ 8 was included for statistical analysis. We compared the mean age, mean GERD related QOL score, MBI and symptom duration between patients with RSI > and $\leqq$ 13. The The mean scores of GERD-health related QOL for GERD patients was 25.7 and 15.2 for patients with RSI > 13 and $\leqq$ 13 respectively (p = 0.017). The mean age was 47.9 and 58.3 for GERD patients with RSI > 13 and $\leqq$ 13 respectively (p = 0.024). The duration of GERD symptom and BMI didn't reach statistical significance. The results showed patients with LPR was younger and had poor GERD-health related QOL.

Discussion: Studies from the Western population revealed that LPR negatively impacted the QOL of patients. Study by Cheung showed LPR had a significant impact on the social functioning as reflected in the Short Form 36 and a higher anxiety score

with Hospital Anxiety and Depression Scale in Chinese population. Cheung also found that LPR had a negative impact on psychological status, social functioning and QOL. GERD symptoms appeared to be the main contributor to decrease QOL. GERD-related LPR patients had a significant impact on the mental component of their QOL. In Cheung study he also showed that there were no significant differences in age, gender, smoking and alcohol prevalence between the LPR group and the control group. Those with LPR had a slightly higher BMI compared with the controls (23.5 vs. 22.1%, $p = 0.01$). In our study GERD patients with LPR was younger, which was different to Cheung's finding. BMI had no significant difference between patients with and without LPR in this study.

Cheung suggested that the decreased QOL in LPR patients could be mainly caused by the accompanying GERD. In other words, GERD symptoms, not the laryngopharyngeal symptoms, are the main contributor to decrease QOL in LPR patients, because the decrease in SF-36 scores in the GERD-negative LPR group appeared to be similar to that of the control group. It will be interesting to compare QOL between GERD patients with and without the laryngopharyngeal symptoms to estimate the exact impact of LPR on QOL in a future study. In our study we didn't use SF-36 to evaluate patients' quality of life because it had too many items and was time-consuming to answer. We chose GERD-health related QOL questionnaire because we wanted to know patient's real GERD related QOL instead of general QOL.

The limitation of this study was that the three questionnaires used were not validated for Taiwanese people. They were self-administered and sometimes patients were confused about the content of the instruments, and in consequence, their reliability was questionable. Our sample size was small. However, from the simple study result, it helps us to know that LPR is a significant problem in Taiwanese. LPR has a negative impact on the psychological status, social functioning and QOL according to previous data. GERD-related LPR patients were more depressed and had a more significant impact on the mental component of their QOL. It reminds us not to ignore the significance of LPR for GERD patients and their psychological impact on patients' QOL, when we approached these at our outpatient department.