Use of reflux finding score and reflux symptom index for the management of laryngopharyngeal lesions: a pilot study

Use of reflux finding score and reflux symptom index for the management of laryngo-pharyngeal lesions: a pilot study

Jacopo Colombini[1], Massimo Spadola Bisetti[1], Roberto Albera[1], Davide Giuseppe Ribaldone[2,3], Giorgio Maria Saracco[2,3], Rinaldo Pellicano[3]

[1] S.C. Otorhinolaryngology, University of Turin and Città della Salute e della Scienza di Torino, Turin, Italy

[2]Department of Medical Sciences, University of Turin, Turin, Italy

[3] Unit of Gastroenterology, Molinette-SGAS Hospital, Turin, Italy

Corresponding author: Rinaldo Pellicano, Gastroenterology Unit, Molinette-SGAS Hospitals, 10126 Turin, Italy; tel 00390116333918 e-mail: rinaldo_pellican@hotmail.com

Gastro-esophageal reflux disease (GERD) is a chronic and relapsing clinical condition, associated or not to histopathologic alterations of esophageal mucosa. GERD occurs with high prevalence in the general population worldwide.[1] A plethora of extra-esophageal manifestations have been described in patients suffering from GERD and many investigators have postulated a causal relationship.[2] According to the Montreal Consensus Conference, extra-esophageal manifestations include chronic laryngitis, chronic cough and asthma, although these should be considered multifactorial processes and GERD can be an aggravating cofactor.[3]

Laryngo-pharyngeal reflux (LPR) is a condition characterized by the reflux of gastric content into laryngo-pharyngeal district.[4] In the last years this condition has been frequently associated to GERD. The phoniatric process of clinical diagnosis of LPR include the fiber-optic transnasal laryngoscopy, the tool essential to visualize the larynx. The typical endoscopic feature in patients with LPR is the phlogosis of interarythenoideal mucosa, that can cause the formation of ulcers or granulomas. In more severe cases, this phlogosis can also involve the vocal folds and all laryngeal districts. To determine the extent of laryngeal damage is used the reflux finding score (RFS), an 8-item scale that attempts to document the clinical severity of LPR.[4] The RFS is often combined with the results of the self-assessment symptom questionnaire, called reflux symptom index (RSI).[5]

In a pilot prospective study, conducted during a period of 3 months at the Phoniatric unit (Otorhinolaryngology), University of Turin, Italy, we evaluated the clinical usefulness of the combination of RFS and RSI in patients treated for symptoms possibly related to LPR.
Since among the 8 parameters of RFS, “subglottic edema” and “ventricular obliteration” were difficult to detect, we revised the RFS, identifying obvious signs of reflux, such as observation of stagnation regurgitated in the upper esophageal sphincter (UES). In any case, using the original or the modified RFS, a patient with a laryngoscopic score ≥7 was considered as having LPR.[4] A total of 18 patients were included in the study. The original table of RSI[5] was translated from English to Italian, to help the Italian patients understanding it. An extra question was added to the table, asking if the quantity of saliva in the mouth was perceived normal, in excess, or reduced. All patients were treated with a proton pump inhibitor (PPI) drug (pantoprazole 40 mg twice a day: 30 minutes before breakfast and dinner) and alginate (four times a day: 30 minutes after breakfast, after lunch, after dinner and before bedtime) for 8 weeks. After the end of this treatment, patients returned to phoniatric unit to retake the RFS and RSI to evaluate the therapeutic benefit. Pre- and post-therapeutic laryngoscopic grading and the results of self-assessment questionnaire were compared using the Wilcoxon rank test.

Of the 18 patients selected, 6 patients dropped out, in 1 case because he did not follow correctly the therapy, and 5 patients did not return to the follow-up appointment. Of the remaining 12 patients, 4 men and 8 women (age 47-75 years), in 11 (91.6%) improvements were seen in the laryngoscopic score (Figure 1). Median total score of laryngoscopic grading (RFS) before therapy was 9.25 (± 1.76) and decreased to 6.42 (± 2.64) ($p = 0.004$) after treatment. Regarding the self-assessment questionnaire (RSI), the median total score decreased from 33.33 (± 10.65) to 19.50 (± 10.30) ($p = 0.004$) (Figure 2). Each item was evaluated to determine if someone could have more influence in lowering the final score. The thick endolaryngeal mucus was not seen in any patient, therefore not considered. The laryngoscopic grading improvement was influenced by the variation of the parameter erythema or hyperemia for 23.5%, of edema of the vocal cords for 11.8%, of laryngeal edema spread for 17.6%, of hypertrophy of the posterior commissure for 17.6%, of granuloma or granulation for the 5.9% and reflux or stagnation observed at UES for 23.5%. The greatest amount of subjects did not show significant differences between the evaluation of intensity and of the symptom frequency. The two scores showed more than 3 points of gap in only 3 of the subjects. This can be hardly assigned to the difficulty of the examined subject to distinguish between the “intensity” and “frequency” parameters, since the questionnaire was compiled with the help of a sanitary operator, but it could mean that graver symptoms were reported more frequently by patients. Responding to the question regarding saliva production, 2 patients (16.7%) complained dryness, 10 patients (83.3%) reported no difference, and no patients reported excess. Patients who complained dryness did not have improvement post-therapy, even though other symptoms of LPR improved.

In conclusion, considering the necessity of validating the study in larger samples, these initial results confirm that the patients selected with a laryngoscopic grading ≥7 benefited significantly from 8 weeks of anti-reflux treatment. Thus, using the combination of the laryngoscopic score, associated to the self-assessment questionnaire of symptoms, it is possible to select in clinical practice patients that could benefit from standard anti-reflux therapy. The next step should be the gastroenterological management of the underlying GERD.

References

1. Saracco M, Savarino V, Bodini G, Saracco GM, Pellicano R. Gastro-esophageal reflux disease: key messages for clinicians. Minerva Gastroenterol Dietol 2020;doi:10-23736/S1121-421X.20.02783-X.

2. Solidoro P, Patrucco F, Fagoonee S, Pellicano R. Extra-esophageal presentation of gastroesophageal reflux disease: a 2020 update. J Clin Med 2020;9:2559.
3. Vakil N, van Zanten SV, Kahrilas P, Dent J, Jones R, Global Consensus Group. The Montreal definition and classification of gastroesophageal reflux disease: a global evidence-based consensus. Am J Gastroenterol 2006;101:1900-20.
4. Belafsky PC, Postma GN, Koufman JA. The validity and reliability of the Reflux Finding Score (RFS). Laryngoscope 2001;111:1313-7.
5. Belafsky PC, Postma GN, Koufman JA. Validity and reliability of the Reflux Symptom Index (RSI). J Voice 2002;16:274-7.

Conflicts of interest. The authors certify that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

Authors contributions. Conceptualization: Jacopo Colombini, Davide Giuseppe Ribaldone, Rinaldo Pellicano, Massimo Spadola Bisetti, Roberto Albera, Giorgio Maria Saracco; methodology: Jacopo Colombini, Davide Giuseppe Ribaldone, Rinaldo Pellicano; data collection: Jacopo Colombini, Davide Giuseppe Ribaldone, Rinaldo Pellicano; writing: Rinaldo Pellicano; review and editing: Jacopo Colombini, Davide Giuseppe Ribaldone, Rinaldo Pellicano.

All authors read and approved the final version of the manuscript.