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LETTER TO THE EDITOR

Laryngopharyngeal reflux and autonomic nerve dysfunction: what about stress?

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Dear Editor,

We have carefully read the paper of Wang et al. who studied the association between laryngopharyngeal reflux (LPR) and autonomic nerve dysfunction [1]. In their study, Wang et al. identified autonomic nerve dysfunction through 5-min short-range heart rate variability and they correlated some of these impairments with symptoms (Reflux Symptom Index, RSI) and findings (Reflux Finding Score, RFS). We compliment the authors for this study that covers an important and often neglected area. Deteriorated vagal nerve function is an important point in the pathogenesis of gastroeosophageal reflux disease (GERD) [2] but is less studied in LPR. Many points can be addressed in regard to the methodology of the study of Wang et al.

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First, the authors have used RSI and RFS for the assessment of symptoms and findings associated with LPR. However, these two scores are currently criticized for their lack of reliability [3, 4] and the lack of consideration of many extra-laryngeal symptoms and findings [4, 5]. Precisely, RSI does not consider many digestive symptoms, i.e., nausea, indigestion, flatus, regurgitations, burp, etc., which are, however, associated with LPR. Indeed, a recent study found that LPR patients had a higher proportion of digestive complaints in comparison with healthy individuals irrespective to the occurrence of GERD [6]. In that respect, the consideration of the digestive symptoms would make particular sense in the present study because they may develop in a context of vagus nerve dysfunction and remain a good indicator of parasympathetic dysfunction [7]. Similarly, RFS does not consider extra-laryngeal findings, which can be associated with LPR according to many clinical studies [4, 8, 9]. In addition, the authors did not specify the method used for the assessment of RFS. Did the authors assess RFS in a blind manner regarding the complaints of patients? This point is very important because the knowledge of patient symptoms is known to significantly bias the RFS evaluation [3]. Since the diagnosis was based on RSI > 13 and RFS > 7, the blinded assessment of RFS would be particularly important; as well as for the assessment of therapeutic efficacy.

Second, in fact, the main results of this study could mainly suggest a relationship between stress and the development of LPR. This association is not new but was rarely studied; that is why the study of Wang et al. is particularly interesting and original.

Patients with high scores of stress scales have overall autonomic nerve dysfunction, especially an alteration of the sympathetic–vagal balance through an increase of sympathetic 'activity' [10, 11]. The increase of the sympathetic activity related to stress leads to esophageal sphincter transient relaxation which may be associated with an increase of

distal and proximal reflux episodes. Moreover, stress and the related autonomic dysfunction are involved in some digestive disorder such as bowel disease [12]. Some usual symptoms of LPR such as globus or dysphagia may be associated with stress and, in the present study, would be related to both LPR inflammation and stress [13]. In this study, the assessment of stress, through validated clinical tools, would have provided useful information for the correlation between sympathetic measurements and score results [14].

In summarize, the study of Wang et al. could objectively and indirectly assess the relationship between the stress of patients and the development of symptoms and findings associated with LPR; the results strengthening the importance to consider LPR from a more global perspective. Thus, the treatment has to be based on diet, behavioral changes, drugs and; in case of future objectification of stress involvement, physicians may create awareness in all patients regarding this potential risk factor. Furthermore, preliminary studies suggested that stressed LPR patients would have a lower therapeutic response than those who are less stressed [15].

Future controlled studies are needed to investigate both objective and subjective findings associated with stress in patients with a clear diagnosis of LPR regarding the multichannel intraluminal impedance-pH monitoring (MII-pH). The consideration of chest, digestive, ear, nose and throat symptoms is important as well as the use of MII-pH and esophageal manometry to correlate the autonomic dysfunction with the lower and upper esophageal sphincter transient insufficiency.

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Compliance with ethical standards

Conflict of interest The author had no conflict of interest.

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