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LETTER TO THE EDITOR

Transcutaneous electrical acupoint stimulation, autonomic nerve dysfunction and laryngopharyngeal reflux

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Dear Editor,

We read the paper of Shen et al. about the role of transcutaneous electrical acupoint stimulation (TEAS) in the treatment of laryngopharyngeal reflux (LPR) [1]. The authors compared the effectiveness of TEAS associated with proton pump inhibitors (PPIs) *versus* PPIs in patients with suspected LPR disease. Authors observed better decrease of reflux symptom index and reflux in the experimental group (TEAS and PPIs) compared with control group (PPIs) without significant adverse events [1]. We congratulate the authors for the originality of this study and we would like to draw attention to some points.

The use of Ryan score, which bases the LPR diagnosis on thresholds of pH 5.5 for upright and 5.0 for supine positions may be considered as a selection bias because, in practice, many patients with LPR reported nonacid pharyngeal events with pH > 5.5 [2, 3]. Through the consideration of Ryan score as the only diagnostic criteria at the oropharyngeal pH monitoring, authors have probably included more patients with acid or weakly acid LPR rather than patients with alkaline LPR and the study sample did not represent the LPR population. Moreover, the exclusion criteria might have included allergy, rhinitis or chronic rhinosinusitis, which are prevalent confounding factors [4, 5] in Asia and Western countries [6] associated with nonspecific pharyngeal symptoms and signs [5]. The consideration of both the nonacid pharyngeal events and these confounding factors should improve the representativity of the patient sample regarding the LPR population.

Despite of these specific inclusion details, the study of Shen et al. is particularly innovative and important because authors used traditional Chinese medicine that may have, but not solely, inflammatory and immunological effects [1] in a poorly understood inflammatory disease (LPR). Importantly, authors did not discuss about a significant factor in their attempt at explaining the physiological effects: the autonomic nerve dysfunction. Indeed, it has been supported that LPR patients frequently reported autonomic nerve dysfunction [7–9], which is a major component of anxiety and stress [9, 10]. In practice, LPR patients are often stressed, anxious or depressive [9, 10] and these characteristics may be associated with LPR severity and therapeutic resistance [7]. Indeed, the dysfunction of autonomic nerve system is associated with vagus nerve dysfunction (reduction of

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parasympathetic system) [7] and related esophageal dysmotility [11], which may include lower and upper sphincter transient relaxations [11] and related gaseous esophagopharyngeal reflux events. In that way, the control group of the study of Shen et al. might have benefited from better control of autonomic nerve function and related higher symptom relief. We encourage authors to continue their interesting investigations through an assessment of autonomic nerve dysfunction in LPR patients from pre- to post-TEAS with objective measurements (e.g. heart rate variability analyses, low frequency/high frequency ratio [7, 9]) and repeated hypopharyngeal–esophageal impedance pH monitoring. Regarding the involvement of autonomic nerve dysfunction in GERD, the management of recalcitrant LPR patients is challenging and both conventional Western and traditional Chinese approaches may be contributive approaches for this multifactorial disease.

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Declarations

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