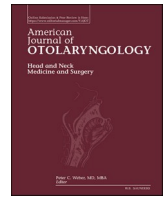


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## Laryngopharyngeal reflux in otitis media with effusion

### ARTICLE INFO

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#### Dear Editor,

We read the paper of Shin et al. entitled "The effects of treating GERD on the outcomes of otitis media with effusion: A systematic review and meta-analysis [1]". In this systematic review, the authors reported that the prevalence of gastroesophageal reflux disease (GERD) in pediatric patients with otitis media with effusion (OME) was 56 %, while it was 4 % in the adult GERD population. Moreover, it has been suggested that the efficacy rate of GERD treatment in OME patients was 59 % [1]. We congratulate the authors for their valuable systematic review and meta-analysis investigating an important issue in otology and laryngology. In this letter, we would like to draw attention to methodological points that may bias some analyses and conclusions.

Authors included numerous studies considering the prevalence or association between GERD and OME, without consideration of differences between GERD and laryngopharyngeal reflux (LPR). Over the past decades, the GERD diagnosis criteria was based on DeMeester score [2], Montreal consensus [3] or, more recently, the Lyon Consensus [4], which base the GERD diagnosis on esophageal findings (e.g. stricture or esophagitis) or the identification of acid reflux events in the low esophagus at the pH-study. In practice, a large proportion of GERD patients do not have extra-esophageal reflux disease (LPR), and, consequently, no pepsin deposit in the upper aerodigestive tract mucosa, and related inflammation [5,6]. It is commonly recognized that <50 % of LPR patients have GERD [5,6], while laryngopharyngeal findings are found in 32 % to 39 % of GERD patients [6–9]. GERD and LPR are two distinct conditions with interconnected findings in some patients.

In the same vein, GERD and LPR also differ regarding the therapeutic response. GERD patients commonly report significant improvement of symptoms with proton pump inhibitors (PPIs) [10], while the superiority of PPIs over placebo in LPR patients is still not demonstrated [11]. This difference of effectiveness may be attributed to the weakly acid or alkaline nature of reflux disease in LPR [12,13], which, consequently, does not match with antacid medications [13]. According to the significant differences between GERD and LPR, the study of association between OME and reflux needs to consider LPR and not only GERD [9]

through the identification of pharyngeal reflux events at the hypopharyngeal-esophageal intraluminal impedance-pH monitoring (HEMII-pH) or the identification of pepsin or bile salts in middle ear [14,15]. The study of the prevalence of LPR in children or adults with OME requires future investigations considering LPR rather than GERD. The consideration of pepsin, bile salts or other enzymes in the middle ear fluids of OME patients may undoubtedly improve the knowledge about the development of chronic otitis media.

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