Letter to the Editor

Probiotics in prevention and treatment of allergic rhinitis

To the Editor,

We read with great interest the article by Peng *et al.*[1] entitled, "The role of probiotics in prevention and treatment for patients with allergic rhinitis: A systematic review," which was published in July–August 2015. The effect of probiotics on chronic inflammatory disease has become a popular topic, with some positive findings in several studies.

In their article, the authors systematically reviewed the literature for randomized controlled trials (RCT) that analyzed the use of probiotics for both the prevention and treatment of allergic rhinitis. Our group published a similar review earlier this year in the *International Forum of Allergy and Rhinology* entitled, "A systematic review and meta-analysis of probiotics for the treatment of allergic rhinitis."[2] We appreciate the authors' work because it is always useful to evaluate data from multiple perspectives; however, we would like to point out some differences in the two studies that may be of interest to both the journal readership and the general public.

Systematic reviews have become an essential part of the medical literature, which allows for a thorough and unbiased analysis of published data. However, the way in which a systematic review is conducted can substantially alter data analysis and, ultimately, study conclusions. We noted that, in the study by Peng *et al.*[1] a total of six RCTs that analyzed the role of probiotics in allergic rhinitis treatment were identified and included for review. However, our study identified a total of 23 studies, including 21 RCTs and 2 crossover studies.[2] Despite a clearly described search algorithm and the use of similar databases, the reason for this discrepancy remains unclear. All studies not included by the authors were of fairly high quality, with a modified Jadad score of ≥3, and inclusion of these studies in our study resulted in analysis of >1900 patients, as opposed to the 306 reported by Peng *et al.*[1] We noted a lack of clear inclusion-exclusion criteria in the methods, and no limitations on date or year of publications was discussed. In addition, the article selection process did not include the reason for excluding articles at each step of the review, as is encouraged by standardized reporting guidelines.

Similar to the conclusions by Peng *et al.*,[1] our results were limited by study heterogeneity and the use of variable outcome measures, which thus prevented formal recommendations and highlighted the need for further study. However, the additional articles included for analysis did identify statistically significant differences in Rhinitis Quality of Life Questionnaire (RQLQ) symptom-specific outcome measures that were not identified by Peng *et al.*[1] In addition, the higher number of included studies certainly increases both the power and significance of the study results. We again thank the authors for their interesting study but wish for clarification regarding the mentioned discrepancies.

Justin H. Turner, M.D., Ph.D.
Austin S. Adams, M.D.
Alexander Zajac, M.D.

REFERENCES

1. Peng Y, Li A, Yu L, and Qin G. The role of probiotics in prevention and treatment for patients with allergic rhinitis: A systematic review. Am J Rhinol Allergy 29:292–298, 2015.
2. Zajac AE, Adams AS, and Turner JH. A systematic review and meta-analysis of probiotics for the treatment of allergic rhinitis. Int Forum Allergy Rhinol 5:524–532, 2015. □

To the Editor,

We appreciate the letter from Turner and colleagues, which gives us an opportunity to improve our study. We would like to clarify the discrepancies mentioned by Turner. Their article entitled, "A systematic review and meta-analysis of probiotics for the treatment of allergic rhinitis"[1] indeed had some differences with the study of Peng *et al.*[2]

Their study included 21 RCTs and 2 crossover studies in their article and found that the use of probiotics resulted in a significant improvement in RQLQ scores compared with placebo.[1] We compared the two studies as well as included articles carefully and found that several reasons may have led to discrepancies. First, Peng *et al.*[2] included all relevant articles up to March 2014; therefore, two articles incited by Zajac *et al.*[1] but published after that time were not included in our analysis. Second, Peng *et al.*[2] did not analyze total immunoglobulin E and Rhinoconjunctivitis Total Symptom Score; therefore, several articles about these two items were not included. Third, several articles about RQLQ and antigen-specific immunoglobulin E were excluded because some data could not be combined or extracted. For example, different detection methods, different types of allergen, or different units of measurement excluded those articles. As we know, the higher number of included studies certainly increases both the power and significance of the study results, but, if some articles with different detection methods and evaluation systems were included, then these data might influence the study outcomes or even mislead readers. Peng *et al.*[2] actually included six articles of >50 RCTs according to inclusion and exclusion criteria described in the article. The deadline of included articles was also mentioned in our article (March 2014). However, it would have been better if the detailed exclusion reasons were described. We will improve on this in our further studies.

The letter from Turner and colleagues actually reflected a problem of the meta-analysis, which is how we make the meta-analysis more standard and perfect, and avoid making discrepancies. Therefore, establishing more perfect and strict standards, which is suitable for various professional and study fields may bring benefits for future research.

Gang Qin, M.D.

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1. Zajac AE, Adams AS, and Turner JH. A systematic review and meta-analysis of probiotics for the treatment of allergic rhinitis. Int Forum Allergy Rhinol 5:524–532, 2015.
2. Peng Y, Li A, Yu L, and Qin G. The role of probiotics in prevention and treatment for patients with allergic rhinitis: A systematic review. Am J Rhinol Allergy 29:292–298, 2015. □