



The Authors' Reply

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Reply to Commentary on “Role of Transcutaneous Electrical Nerve Stimulation in Treating Children With Overactive Bladder From Pooled Analysis of 8 Randomized Controlled Trials”

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To the editor,

Thank you for reaching out to us with the letter from a reader regarding our recent article [1]. We have responded to the reader's questions one-by-one and review the current progress in the treatment of overactive bladder (OAB) in children.

The inclusion criteria were as follows: (1) OAB in children treated by transcutaneous electrical nerve stimulation (TENS); (2) the full text could be obtained; (3) the data provided by the article were valid and relevant, mainly involving the number of cases and appropriate results for each indicator; and (4) the article was a randomized controlled study. Furthermore, if multiple studies described identical experiments, we included the most recently published study, although all studies would be included if different measures were evaluated.

The exclusion criteria were as follows: observational studies, editorials, commentaries, review articles, and research with incomplete data, as well as conference abstracts.

The visual analogue scale (response to urgency) from 0 to 10 was answered by parents as a way of evaluating their subjective perceptions of improvement in their children, with a score of 0 meaning “no improvement in voiding” and 10 meaning “the complete resolution of symptoms.” In comparison with the control group, parents' subjective views on the improvement of their children's symptoms were not significantly different in the TENS group. However, Lordêlo et al. [2] showed that in the TENS group, the lowest score was 5 and 13 parents provided a score of 10, corresponding to the highest therapeutic success

(10); instead, the highest score marked in the control group was 9 ($P < 0.002$). To show the true benefits and safety of this treatment method, more large-scale clinical studies are needed.

Although no clear relationship was found between bladder diseases and constipation, almost all children with OAB had constipation at the time of their clinical visits. Therefore, the medical management of constipation must be carried out at the same time [3]. According to an article by Loening-Baucke [4], the remission of chronic constipation led to the disappearance of urinary incontinence in 89% of patients during the day and 63% at night. Since parents were usually not able to provide an accurate assessment of a child's defecation habits, it was necessary to ask the child directly about this issue. At present, the Bristol scale is the most commonly used tool to evaluate constipation in children. At the same time, maintaining adequate hydration and a high-fiber diet is essential for good intestinal care, and initial cleansing of the intestine with laxatives is often necessary. In addition, after simple behavioral therapy such as regular urination and changing the urination posture, the improvement rate of urination frequency and urgency symptoms reached 50% [5]. The principle of fluid intake management is that it must be timed appropriately during the day and minimized at night. Furthermore, it is necessary to avoid beverages that may cause symptoms of urgency and frequent urination, such as caffeinated, chocolate-containing, or citrus beverages, as well as carbonated beverages more generally.

The prevalence of OAB in children was found to be quite

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high. For doctors, OAB may be challenging to treat. It is very important to evaluate children with lower urinary tract symptoms correctly, and to quickly identify and resolve correctable factors such as constipation. The first step in managing children with OAB should be conservative treatment measures, which should be adhered to throughout the treatment process.

Although the articles included in the study were all randomized controlled trials, which strengthen our findings, we must acknowledge the limitations of this study. Selection bias, subjective factors, and publication bias may have affected the final results of our study. A further limitation of our findings is the lack of consistent information on some variables, such as the intervention period, frequency, intensity, pulse width, and nerve stimulation scheme. We also note that the quality of some studies was flawed, primarily in terms of study design, patient selection, blinding, and outcome data. Therefore, the results of this meta-analysis should be interpreted carefully.

• **Conflict of Interest:** No potential conflict of interest relevant to this article was reported.

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