Letter to the Editor

Is high-flow nasal cannula better for children with bronchiolitis?

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Comment on: Cao J, Cai Q, Xing Y, *et al.* Efficacy and safety analysis of high-flow nasal cannula in children with bronchiolitis: a systematic review and meta-analysis. Transl Pediatr 2022;11:547-55.

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With great interest, we carefully read recent paper on "*Efficacy and safety analysis of high-flow nasal cannula in children with bronchiolitis: a systematic review and meta-analysis*" (1), written by Cao and colleagues which was published in the latest issue of *Translational Pediatrics*.

The study revealed that using high-flow nasal cannula (HFNC) improves arterial oxygen partial pressure similarly to standard oxygen therapy or transnasal positive airway pressure treatment, a significant improvement in respiratory rate can be achieved with HFNC for children with bronchiolitis. Having carefully read this study, we want to highlight several critical points that may need clarification in order to make the conclusions more credible. First of all, the literature search in this study has some flaws. To begin with, the investigators did not describe their search strategy and manual search protocol in detail. There is a possibility that their search strategy did not find all the articles related to this topic. Furthermore, only two electronic databases were searched for articles on this topic (PubMed and Web of Science). Therefore, for the sake of the robustness of this meta-analysis, we recommend that the authors include a complete search protocol and select more electronic databases to search for eligible studies.

Secondly, there are some methodological flaws in this study. The Cochrane Risk of Bias Tool was used to evaluate the quality and risk of bias of the included studies in the results section. According to the Cochrane manual, the Cochrane Risk of Bias Tool was used to access randomized controlled studies (RCTs). Nevertheless, upon careful review, we noticed that the authors appeared to have made an apparent error in this meta-analysis. The reference 10 is not a RCT study, we recommend use Newcastle-Ottawa Scale (NOS) to access the quality of reference 10 (2). Moreover, this meta-analysis lacked essential data, such as quality assessment and detailed scores for selected studies, as recommended by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) standardized guidelines (3). More than that, in the results section, the investigators used a funnel plot to access publication bias in the included studies in *Fig. 6*. However, funnel plot usually used to evaluate publication bias in more than 10 articles. Additionally, although the publication bias was qualitatively evaluated using the funnel plot, in order to make it more reliable and legible, statistical testing to be a more quantitative method to assess it (e.g., Begg's or Egger's test). Lastly, a sensitivity analysis is essential for meta-analysis, and we noticed that the author didn't conduct one to strengthen the results.

We appreciate the authors' contribution of a meta-analysis evaluating the effectiveness of HFNC for children with bronchiolitis. Nevertheless, there are limited high-quality clinical trials available, which could unavoidably lead to bias. In our opinion, larger samples are needed for further validation.

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Footnote

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Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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