

# Comment on the intravenous tranexamic acid use in revision total joint arthroplasty

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## Dear editor

Kuo et al thoroughly evaluated the safety and efficacy of intravenous tranexamic acid in revision total joint arthroplasty (TJA) via aspects of blood loss and transfusion, events of venous thromboembolism.<sup>1</sup> We consider application of this drug of great value in revision TJA. However, we would like to address several concerns related to this meta-analysis.

First, the conclusion of no increased risk of venous thromboembolism was drawn through assessment of five studies, according to the description in the context, yet data of only two studies were extracted in Figure 6, in the form of a forest plot. We carefully read the other five studies selected in this meta-analysis, and found three more of them that contained data of thromboembolic events.<sup>2-4</sup> Two of them showed favorable results for no related event occurrence,<sup>2,3</sup> and the third found increased incidence of thrombotic complications without statistical significance ( $P=0.3$ ).<sup>4</sup> We suggest these results should be included in the analysis, so as to raise the reliability of this conclusion.

Second, there were some deficiencies in the literature search. Only three electronic databases (PubMed, Scopus, and Cochrane Central Register of Controlled Trials) were systematically searched. The small number of studies included might be a limitation of this meta-analysis. Since most of the investigators came from China, a more comprehensive search should also include Chinese databases, such as CBM on Disc and CNKI.

We appreciate the investigators' contribution in supplying us with an excellent safety and efficacy evaluation of intravenous tranexamic acid in revision TJA. If possible, we hope the investigators can make proper revisions to this meta-analysis to make it more credible. Moreover, for the disadvantages of unavoidable risk of bias caused by the limited number of qualified clinical trials or retrospective studies, further prospective randomized controlled trials are required, just as the investigators pointed out in the conclusion.

## Disclosure

The authors report no conflicts of interest in this communication.

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## Authors' reply

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## Dear editor

We read the letter from He and Liu in response to our recently published article entitled "Intravenous tranexamic acid use in revision total joint arthroplasty: a meta-analysis"<sup>1</sup> with interest.

He and Liu were concerned that five studies were included in the manuscript regarding the assessment of venous thromboembolism (VTE), but only two were listed in the forest plot (Figure 6). However, three studies did not report VTE events in their articles.<sup>2-4</sup> When these results were analyzed using our statistical software (Comprehensive Meta-Analysis version 2; Biostat, Englewood, NJ, USA), these studies were automatically excluded, since they had zero events in both arms. This is consistent with the standard-practice recommendation from the Cochrane handbook,<sup>5</sup> where trials with zero events in both arms are not included in the meta-analysis, as odds ratios are calculated. A study from Kazi et al<sup>6</sup> was not included in the analysis for the following reasons: 1) the authors did not provide the number of true episodes of VTE events in their study, 2) the evaluation of thromboembolic complications was diagnosed based on clinical

suspicion, not routine duplex scans or venography exam, which might have resulted in a higher but inaccurate incidence of thromboembolic complications, and 3) when we contacted the author to obtain the raw data, they could not provide it to us because the data had expired the 6-year window and been destroyed due to patient confidentiality and data protection.

He and Liu criticized that only three databases (PubMed, Scopus, and Cochrane Central Register of Controlled Trials) were used in the systematic search, and suggested that we should include Chinese databases, such as CBM on Disc and CNKI. We then expanded the search to include the following databases during the study period: Ovid, Embase, Google Scholar, CBM on Disc, and CNKI. However, we did not find any additional English literature according to the inclusion and exclusion criteria listed in our study, and thus our conclusion is unchanged.

In conclusion, we are grateful to Drs He and Liu for their interest in our study. We want to thank them for sharing their knowledge with us and other readers to make this study and future studies better.

## Disclosure

The authors report no conflicts of interest in this communication.

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