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LETTER

Dexmedetomidine versus Propofol Sedation for Prevention of Postoperative Delirium: Clarifications Required [Letter]

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Dear editor

We read with great interest the randomized controlled trial (RCT) published by Shi et al[1] which investigated the efficacy of dexmedetomidine in reducing the incidence and duration of postoperative delirium in older adults following cardiac surgery. While the results provided valuable insights, several clarifications are required in regards to the trial's methodology and conduct.

Firstly, the authors claimed that their RCT was registered in the Chinese Clinical Trial Registry (ChiCTR No. ChiCTR-IOR-17014122). However, the clinical trial associated with this registration number compared the efficacy of dexmedetomidine as an adjuvant therapy to ropivacaine in patients undergoing laparoscopic colon operations,[2] which is drastically different from the published RCT. Furthermore, we were unable to identify any registration associated with this trial following searches on ChiCTR using the authors' affiliations. Prospective registration of clinical trials is crucial for ensuring scientific transparency and integrity, and is an essential component of the CONSORT statement.[3] Therefore, it is concerning that the authors reported an invalid registration number as it is unknown whether this RCT was prospectively registered.

Moreover, it is unclear whether dexmedetomidine was used as an adjunctive therapy to propofol or a monotherapy. In the Results section, the authors referred to the experimental and control groups as "DEX" and "PRO", respectively. This implies that the RCT compared dexmedetomidine monotherapy against propofol monotherapy. However, the authors also claimed that both groups received propofol for general anesthesia and postoperative sedation in their methodology, which conflicts with the implications of the groups' naming schemes. Additionally, the authors did not clarify whether the dexmedetomidine regimen was continued upon ICU admission and only commented on the propofol regimens. The authors' discussion further complicated this as they concluded that dexmedetomidine might be both an "attractive adjuvant," as well as an "alternative" to propofol. This could suggest that their trial involved both dexmedetomidine adjuvants and monotherapy. We could not verify the exact intervention arms involved in this trial, as a valid trial registration number was not provided.

This unclear reporting may lead to errors in future reviews and treatment guidelines. For instance, this RCT was included in a recent meta-analysis by Abowali et al which investigated the efficacy of dexmedetomidine compared to

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propofol monotherapy for postoperative sedation.[4] Abowali et al concluded that dexmedetomidine could not reduce delirium incidence compared to propofol due to the inclusion of this RCT. A letter[5] in reply to the meta-analysis, noted that the inclusion of this RCT may have been erroneous, shifting the treatment effect towards null.

We believe that dexmedetomidine may have been administered as an adjuvant to propofol as the authors' conclusion contradicts the findings of previous RCTs in regards to postoperative delirium, which generally found dexmedetomidine monotherapy to be superior in reducing postoperative delirium incidence compared to propofol.[4] This may be due to propofol shifting the treatment effect of dexmedetomidine as it serves as a sedative-hypnotic agent. These concerns would need to be addressed by the authors to clarify the exact regimens utilized in this RCT.

Disclosure

The authors declare no competing interests in this communication.

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