



Letter to Editor: “A Comparative Study of the Amount of Bleeding and Hemodynamic Changes between Dexmedetomidine Infusion and Remifentanyl Infusion for Controlled Hypotensive Anesthesia in Lumbar Discopathy Surgery; A Double-Blind, Randomized, Clinical Trial”

Seyed Hossein Khademi^{1,2,*}

¹Department of Anesthesiology, Mashhad University of Medical Sciences, Mashhad, Iran

²Pain Research Center, Iran University of Medical Sciences, Tehran, Iran

*Corresponding author: Seyed Hossein Khademi, Department of Anesthesiology and Pain Research Center, Tehran, Iran. E-mail: khademih1@thums.ac.ir

Received 2018 May 22; Accepted 2018 May 31.

Dear Editor,

I read, with great interest, the article that you published in your journal entitled; a comparative study of the amount of bleeding and hemodynamic changes between dexmedetomidine infusion and remifentanyl infusion for controlled hypotensive anesthesia in lumbar discopathy surgery (1). In their study, Javaherforooshzadeh et al. concluded that administration of dexmedetomidine plus propofol, in comparison with remifentanyl plus propofol, did not show any significant difference regarding blood loss and hemodynamic changes. They administered dexmedetomidine infusion at 0.3 - 0.7 $\mu\text{g}/\text{kg}/\text{h}$ intraoperatively (1). In the study by Gousheh et al. on the effect of dexmedetomidine to prevent bleeding during functional endoscopic sinus surgery (FESS), they observed that intravenous infusion of dexmedetomidine, during the FESS, reduced the amount of bleeding more significantly. In addition, they administered 1 $\mu\text{g}/\text{kg}$ dexmedetomidine during 10 minutes just before the induction and then infusion 0.5 $\mu\text{g}/\text{kg}/\text{h}$, intraoperatively (2). Furthermore, they used dexmedetomidine loading dose with infusion dose plus remifentanyl and propofol in FESS in comparison with the above article where only infusion dose of dexmedetomidine with propofol are administered. The results of this study was in contrast with the above article that may be due to different drugs, different dosage of drugs, or different surgeries. Rokhtabnak et al. compared the effect of dexmedetomidine with magnesium sulfate on controlled hypotension during rhinoplasty. They showed that dexmedetomidine was more effective than magnesium to controlled hypotension and provide a favorable surgical field condition (3). In this study, patients

received 1 $\mu\text{g}/\text{kg}$ dexmedetomidine in 10 minutes before induction of anesthesia, followed by 0.4 - 0.6 $\mu\text{g}/\text{kg}/\text{h}$ during the maintenance of anesthesia. Taghipour Anvari et al. evaluated the effect of clonidine premedication on blood loss in spine surgery and the results demonstrated that clonidine can reduce surgical blood loss in lumbar spine posterior fusion surgery, even at the same levels of mean arterial pressure with the control group (4). Patients received a 200 μg oral clonidine tablet 60 - 90 minutes before anesthesia. Dexmedetomidine is an anxiety reducing, sedative, and pain medication. It is an agonist of a 2-adrenergic receptor, that is capable to reduce the mean arterial pressure (MAP) and heart rate (1). I think the study of Javaherforooshzade did not show any significant differences in blood loss and hemodynamic changes between dexmedetomidine with remifentanyl due to the fact that they compared dexmedetomidine plus propofol with remifentanyl plus propofol, where they have potent hypotensive properties as well administered dexmedetomidine infusion without a loading dose. Other things such as dosage of anesthetic drugs, range of hydration before the induction of anesthesia, kind of surgery, and position of patient may explain the differences between the studies.

Footnote

Conflict of Interests: The author declare that he has no conflict of interest.

References

1. Javaherforooshzadeh F, Monajemzadeh SA, Soltanzadeh M, Janatmakan F, Salari A, Saeed H. A Comparative study of the amount of

- bleeding and hemodynamic changes between dexmedetomidine infusion and remifentanyl infusion for controlled hypotensive anesthesia in lumbar discopathy surgery: a double-blind, randomized, clinical trial. *Anesth Pain Med.* 2018;8(2). doi: [10.5812/aapm.66959](https://doi.org/10.5812/aapm.66959).
- Gousheh SMR, Olapour AR, Nesioonpour S, Rashidi M, Pooyan S. The effect of intravenous infusion of dexmedetomidine to prevent bleeding during functional endoscopic sinus surgery: a clinical trial. *Anesth Pain Med.* 2017;7(4). e12682. doi: [10.5812/aapm.12682](https://doi.org/10.5812/aapm.12682). [PubMed: [29637043](https://pubmed.ncbi.nlm.nih.gov/29637043/)]. [PubMed Central: [PMC5883081](https://pubmed.ncbi.nlm.nih.gov/PMC5883081/)].
 - Rokhtabnak F, Djalali Motlagh S, Ghodrati M, Pournajafian A, Maleki Delarestaghi M, Tehrani Banihashemi A, et al. Controlled hypotension during rhinoplasty: a comparison of dexmedetomidine with magnesium sulfate. *Anesth Pain Med.* 2017;7(6). e64032. doi: [10.5812/aapm.64032](https://doi.org/10.5812/aapm.64032). [PubMed: [29696129](https://pubmed.ncbi.nlm.nih.gov/29696129/)]. [PubMed Central: [PMC5903392](https://pubmed.ncbi.nlm.nih.gov/PMC5903392/)].
 - Taghipour Anvari Z, Afshar-Fereydouniyan N, Imani F, Sakhaei M, Alijani B, Mohseni M. Effect of clonidine premedication on blood loss in spine surgery. *Anesth Pain Med.* 2012;1(4):252-6. doi: [10.5812/aapm.2197](https://doi.org/10.5812/aapm.2197). [PubMed: [24904810](https://pubmed.ncbi.nlm.nih.gov/24904810/)]. [PubMed Central: [PMC4018704](https://pubmed.ncbi.nlm.nih.gov/PMC4018704/)].