



## Letter to the article by Juri et al.

Jianming Yue<sup>1</sup> · Mengjun Wu<sup>2</sup>

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To the Editor:

We read with great interest the recent article by Juri et al. [1]. Their inspirational study on this important topic deserves further discussion. In particular, we have some concerns in regard to their study conclusion. The authors have claimed that changes in the corrected carotid flow time by the Trendelenburg position could serve as a good predictor of spinal anesthesia-induced hypotension for cesarean delivery. However, the percentages of elevated levels of sensory block ( $\geq T4$ ) in both groups were not reported, respectively.

It is known that, a specific level of sensory block is required in patients undergoing cesarean delivery under spinal anesthesia [2]. In a cesarean section (CS), the level of T4–T6 anesthesia is appropriate [3]. An elevated level of sensory block ( $\geq T4$ ) will cause hypotension, bradycardia, nausea and vomiting, and a decreased level of consciousness [4]. In the article by Juri et al. [1], the level of block height (mean) was T4 (T2–T5). However, an important question is raised: what were the percentages of patients with elevated levels of sensory block ( $\geq T4$ ) in both groups?

If the percentage of patients with an elevated level of sensory block ( $\geq T4$ ) in both groups was too high, a potential bias in both groups was identified. The stability of hemodynamics would weaken, and the incidence of hypotension after spinal anesthesia for CS in both groups would increase. So, under the setting of a high level of sensory block, the value of FTc-2 in the current study by Juri et al. after spinal

anesthesia would be increased. Most importantly, the high level of block height T2 would directly inhibit myocardial contractile function, leading to decreased cardiac output. Therefore, under such a high incidence of hypotension and a decreased cardiac function setting, changes in the corrected carotid flow time induced by the Trendelenburg position might not be accurate.

From the discussion above, the current study did not provide convincing evidence that changes in the corrected carotid flow time induced by the Trendelenburg position could serve as a good predictor of spinal anesthesia-induced hypotension for CS.

### Declarations

**Conflict of interest** No conflict of interest exists in the submission of this manuscript, and manuscript is approved by all authors for publication.

### References

1. Juri T, Suehiro K, Yasuda S, Kimura A, Fujimoto Y, Mori T. Changes in the corrected carotid flow time can predict spinal anesthesia-induced hypotension in patients undergoing cesarean delivery: an observational study. *J Anesth.* 2024;38:105–13.
2. Ghaffari S, Dehghanpisheh L, Tavakkoli F, Mahmoudi H. The effect of spinal versus general anesthesia on quality of life in women undergoing cesarean delivery on maternal request. *Cureus.* 2018;10: e3715.
3. Kocarev M, Watkins E, McLure H, Columb M, Lyons G. Sensory testing of spinal anaesthesia for caesarean section: differential block and variability. *Int J Obstet Anesth.* 2010;19:261–5.
4. Manouchehrian N, Rahimi-Bashar F, Pirdehghan A, Shahmoradi F. Comparison between 10 and 12 mg doses of intrathecal hyperbaric (0.5%) bupivacaine on sensory block level after first spinal failure in cesarean section: a double-blind, randomized clinical trial. *Front Med (Lausanne).* 2022;9:937963.

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✉ Mengjun Wu  
3400164739@qq.com

<sup>1</sup> Department of Anesthesiology, West China Hospital, Sichuan University, Chengdu 610041, Sichuan Province, China

<sup>2</sup> Department of Anesthesia, Chengdu Women's and Children's Central Hospital, School of Medicine, University of Electronic Science and Technology of China, Chengdu 610019, Sichuan Province, China