Hypotension during induction: prediction or prevention?

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To the editor:

With interest, we read the study by Okamura et al. which suggested that internal jugular vein area (IJV-A) in the Trendelenburg position was an independent predictor of hypotension during induction [1]. However, we have some comments.

First, area under the curve (AUC) of IJV-A in the Trendelenburg position was only 0.595 and the cut-off value was 1.475 cm², with a sensitivity of 75.7% and a specificity of 44.4%. Therefore, IJV-A might not be an ideal predictor, particularly in terms of its poor specificity. The authors should go one step further to provide the Youden index, which is a direct measure of diagnostic accuracy at the optimal cut-off value [2].

Second, hypotension during induction is not a rare phenomenon in anesthesia settings, which originates from the cardiovascular depressant and vasodilatory effects of anesthetic agents, lack of surgical stimulation and preexisting hypovolemia [3]. Accordingly, a quick fluid therapy before induction, using etomidate alone or combination of etomidate and propofol, multi-staged injection of agents with reduced dose at each time are common maneuvers to weaken or counteract the trend of hypotension.

In all, we thank Okamura et al. for their innovative work on providing us a predictor of hypotension though its

diagnostic accuracy is relatively low, as well as urging us to seek effective strategies to prevent hypotension during induction of general anesthesia.

Compliance with ethical standards

Conflict of interest No competing interest declared.

References

1. Okamura K, Nomura T, Mizuno Y, Miyashita T, Goto T. Pre-anesthetic ultrasonographic assessment of the internal jugular vein for prediction of hypotension during the induction of general anesthesia. *J Anesth*. 2019;33:612–9.
2. Yin J, Tian L. Joint confidence region estimation for area under ROC curve and Youden index. *Stat Med*. 2014;33:985–1000.
3. Zhang J, Critchley LA. Inferior vena cava ultrasonography before general anesthesia can predict hypotension after induction. *Anesthesiology*. 2016;124:580–9.

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