To evaluate the efficacy of using internal jugular vein variability (IJVV) as an index of fluid responsiveness in mechanically ventilated patients after cardiac surgery" Ma et al (2018).

Abstract

Background: To evaluate the efficacy of using internal jugular vein variability (IJVV) as an index of fluid responsiveness in mechanically ventilated patients after cardiac surgery.

Methods: Seventy patients were assessed after cardiac surgery. Hemodynamic data coupled with ultrasound evaluation of IJVV and inferior vena cava variability (IVCV) were collected and calculated at baseline, after a passive leg raising (PLR) test and after a 500-ml fluid challenge. Patients were divided into volume responders (increase in stroke volume ≥ 15%) and non-responders (increase in stroke volume < 15%). We compared the differences in measured variables between responders and non-responders and tested the ability of the indices to predict fluid responsiveness.

Results: Thirty-five (50%) patients were fluid responders. Responders presented higher IJVV, IVCV and stroke volume variation (SVV) compared with non-responders at baseline (P <

0.05). The relationship between IJVV and SVV was moderately correlated (r = 0.51, P < 0.01). The areas under the receiver operating characteristic (ROC) curves for predicting fluid responsiveness were 0.88 (CI 0.78–0.94) for IJVV compared with 0.83 (CI 0.72–0.91), 0.97 (CI 0.89–0.99), 0.91 (CI 0.82–0.97) for IVCV, SVV, and the increase in stroke volume in response to a PLR test, respectively.

Conclusions: Ultrasound-derived IJVV is an accurate, easily acquired noninvasive parameter of fluid responsiveness in mechanically ventilated postoperative cardiac surgery patients, with a performance similar to that of IVCV.

Full Text

Reference:

Ma, G-G., Hao, G-W., Yang, X-M., Zhu, D-M., Liu, L., Liu, H., Tu, G-W. and Luo, Z. (2018) Internal jugular vein variability predicts fluid responsiveness in cardiac surgical patients with mechanical ventilation. Annals of Intensive Care. 8:6.

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