CORRESPONDENCE

In reply: Is ultrasound assessment of the inferior vena cava for fluid responsiveness unlikely to be helpful, or is it just too early to say?

Scott J. Millington, MD, FRCPC

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To the Editor,

I thank Drs Li, Yin, and Kang for their comment¹ on my article.² I am pleased to see a vigorous debate on this important issue. This is an area where reasonable people can disagree, and we certainly seem to have found healthy disagreement here.

The three steps they describe to help optimize inferior vena cava (IVC) measurement using ultrasound (US) are very sensible. Nevertheless, awareness of the many potential pitfalls is not a guarantee of success. Likewise, while it certainly seems wise to “incorporate right heart function, tricuspid regurgitation, the IVC short-axis shape, and intraabdominal pressures” into decision-making, I would argue that it is impractical to do so. There are simply too many variables, most of them unquantifiable, to design and test a working algorithm.

Li *et al.* also raise the poor evidence base supporting IVC measurement, a point of agreement between us. The report by Vignon *et al.*³ is by far the best study on the subject to date. When US assessment was tested on hundreds of critically ill patients under optimal conditions (such as we currently understand them), it was found to perform very poorly, and only slightly better than a coin toss. The authors of this study are recognized as some of the most experienced critical care echocardiographers in the world; it would be difficult to expect better results than their group achieved. While I appreciate the thoughtful

points raised by Li *et al.*, we'll have to agree to disagree and I remain of the opinion that measuring the IVC to determine fluid responsiveness is often a waste of time, and at times, even harmful.

Conflicts of interest None.

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References

1. Li Y, Yin W, Kang Y. Is ultrasound assessment of the inferior vena cava for fluid responsiveness unlikely to be helpful, or is it just too early to say? *Can J Anesth* 2020; 67: this issue. DOI <https://doi.org/10.1007/s12630-020-01574-y>
2. Millington SJ. Ultrasound assessment of the inferior vena cava for fluid responsiveness: easy, fun, but unlikely to be helpful. *Can J Anesth* 2019; 66: 633-8.
3. Vignon P, Repesse X, Begot E, *et al.* Comparison of echocardiographic indices used to predict fluid responsiveness in ventilated patients. *Am J Respir Crit Care Med* 2017; 195: 1022-32.

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S. J. Millington, MD, FRCPC (✉) ·
University of Ottawa, Ottawa, ON, Canada
e-mail: smillington@toh.ca