Reviewer's report

Title: Comparison of tricuspid inflow and superior vena caval Doppler velocities in acute simulated hypovolemia: New noninvasive indices for evaluating right ventricular preload.

Version: 1 Date: 7 April 2006

Reviewer: William Culp Jr

Reviewer's report:

General
This research attempts to ascertain non-invasive Doppler indices of right ventricular preload. Much work has already been done in this arena for left ventricular preload through transmitral and pulmonary venous Doppler studies, but the right heart has received much less attention. For this reason, this study has merit and obvious potential clinical implications. However, the paper needs to be copy-edited well before publication.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)
(1) None.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
(1) The authors should specify that this is transthoracic echocardiography (rather than transesophageal, for instance) in both the abstract and the paper.
(2) The use of Lower Body Negative Pressure (LBNP) is an interesting device to model human hypovolemia. The authors should describe the approximate blood loss simulated by the various degrees of applied negative pressure in their subjects. (See Table 1, page 1250 in Cooke WH, et al. J Appl Physiol 2004.)
(3) Please format the references exactly to the style of Cardiovascular Ultrasound.
(4) Were Doppler studies performed as the subjects were restored to normal pressure? If so, did the S, D, AR, and E waves return to baseline or at least increase in velocity as compared to the "hypovolemic" values? This could be interesting data and would add to the study- not just assessing the changes to hypovolemia, but also to the therapeutic "fluid challenge" of volume restoration.
(5) Copy editing will make this paper more readable. For instance, in the first sentence of the paper body, "In many clinical critical situations, such as septic shock, cardiac surgery, the hypovolemia which decreases the cardiac preload often leads to the cardiovascular failure." This should be corrected as follows," In many critical clinical situations such as septic shock or cardiac surgery, hypovolemia may lead to cardiovascular failure by decreasing cardiac preload." Minor corrections such as this throughout the paper will allow the reader to focus on the content of the study.

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Discretionary Revisions (which the author can choose to ignore)
(1) None.

What next?: Accept after minor essential revisions

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Needs some language corrections before being published

Statistical review: No, the manuscript does not need to be seen by a statistician.