

Letter to the Editor

Commentary specifically on the article by S. Harling et al

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Dear Editor,

Quantification of left-to-right shunting through a patent ductus arteriosus by colour Doppler is an interesting idea, but I am not quite convinced that the technique as outlined in the paper by Harling S¹ can be a reliable tool in an *in vivo* setting; I am aware that flow can be accurately determined by colour Doppler.^{2,3} However, these studies were carried out in controlled settings (*in vitro*) in which the sizes, shapes, and actual velocities of the streams were known. The size of the jet, its temporal resolution, and extent of aliasing velocities can be significantly affected by the angle of Doppler interrogation, transducer frequency, and instrument settings such as gain, output power, Nyquist limit, size, and depth of the image.⁴ In *in vivo* settings, these variables vary with each patient and are highly operator dependent, which ultimately may have a negative impact on the reproducibility and accuracy of quantitative estimation. In addition, assessing the degree of shunting based on a single two-dimensional still frame can be misleading. The jets of ductal artery can be central or eccentric (wall hugging) and the sizes of the jets may vary significantly depending on the planes of interrogation. The wall-impinging jets are significantly

smaller than centrally directed jets of similar haemodynamic severity, mainly because they flatten out on the wall of the main pulmonary artery. To fully appreciate the severity of shunting, one needs to examine the patent ductus arteriosus by colour Doppler in multiple sweeping planes and windows.

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References

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