

Putting the Wedge under Pressure

Dear Editor,

We would like to thank Dr Huck Chin Chew et al¹ for sharing their findings and we are appreciative of their work, “Oesophageal Doppler Ultrasound in the Assessment of Haemodynamic Status of Patients Admitted to the Medical Intensive Care Unit with Septic Shock”. In their paper, Dr Chew and colleagues evaluated the comparison between pulmonary artery catheter (PAC) and oesophageal doppler (OD) cardiac output monitoring in an Asian population of patients with severe sepsis. However, some concerns exist regarding the conclusions of their paper.

Although the PAC is traditionally recognised as the “gold standard” for cardiac output and preload monitoring, the use of PAC as the benchmark for accuracy has some limitations. Dr Chew et al¹ set out to correlate pulmonary artery wedge pressures (PAWP) with corrected flow time (FTc), a commonly used OD preload metric. However, haemodynamic literature increasingly suggests filling pressures such as the central venous pressure (CVP) and PAWP do not aid in predicting cardiac output or fluid responsiveness.²⁻⁵ Although Guidelines such as the Surviving Sepsis Campaign incorporate the utilisation of CVP and PAWP, the current body of evidence does not support CVP or PAWP as accurate measures of preload.

In fact, we should perhaps consider the comparison in reverse. Some literature suggest PAWP and CVP should probably be compared to FTc to gauge accuracy.⁶ Some clinicians may be wary of the accuracy of FTc. However, FTc is only intended to give clinicians an indication for the changes in stroke volume. Stroke volume (SV) (and stroke distance) is the preferred index for guiding and monitoring haemodynamic optimisation, provided that peak velocity (contractility measure) is corrected at first. It is actually SV that was utilised as the primary “vital sign” in the haemodynamic optimisation algorithms of several randomised trials that consistently demonstrated improved length of stay and decreased complication rates.

Once again, we would like thank Dr Chew and colleagues for their well designed paper and their study toward improving flow-directed haemodynamic monitoring.

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