

Accurate assessment of intravascular fluid status and measurement of fluid responsiveness have become increasingly important in peri-operative medicine and critical care” Ansari et al (2015).

Summary:

Accurate assessment of intravascular fluid status and measurement of fluid responsiveness have become increasingly important in peri-operative medicine and critical care. The objectives of this systematic review and narrative synthesis were to discuss current controversies surrounding fluid responsiveness and describe the merits and limitations of the major cardiac output monitors in clinical use today in terms of usefulness in measuring fluid responsiveness.

We searched the MEDLINE and EMBASE databases (2002–2015); inclusion criteria included comparison with an established reference standard such as pulmonary artery catheter, transthoracic echocardiography and transoesophageal echocardiography. Examples of clinical measures include static (such as central venous pressure) and dynamic (such as stroke volume variation and pulse pressure variation) parameters. The static parameters measured were described as having little value; however, the dynamic parameters were shown to be good physiological determinants of fluid responsiveness. Due to heterogeneity of the methods and patient characteristics, we did not perform a meta-analysis. In most studies, precision and limits of agreement (bias $\pm 1.96SD$) between determinants of fluid responsiveness measured by different devices were not evaluated, and the definition of fluid responsiveness varied across studies. Future research should focus on the physiological principles that underlie the measurement of fluid responsiveness and the effect of different volume expansion strategies on outcomes.

Reference:

Ansari, B.M., Zochios, V., Falter, F. and Klein, A. (2015) Physiological controversies and methods used to determine fluid responsiveness: a qualitative systematic review. October 13th. .

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