

Central venous pressure and peripheral venous pressure, however correlated are still both in the gray-area

Sir,

In their prospective observational study Kumar *et al.* demonstrated an acceptable correlation between central venous pressure (CVP) and peripheral venous pressure (PVP), especially when CVP >10 cm H₂O.^[1] They proposed to use PVP measurement to guide fluid therapy in a wide variety of critically ill patients. Whereas being of very high interest for clinicians, we would like to underline some drawbacks that may prevent the efficient use of PVP.

First, several studies have shown that CVP was not a reliable indicator of cardiac preload and a review of literature concluded in 2008 that CVP should not be used to guide fluid management.^[2] This might be too restrictive because the physiology tells us that CVP reflects the

diastolic pressure of the right ventricle. Very low values of CVP <7 mm H₂O predicted a positive response to fluid loading.^[3] However, for values between 5 and 15 mm Hg the gray-zone approach should be applied, so as to increase the utility of diagnostic measures.^[4] This means that doctors should be aware that their measurements may be inconclusive in approximately 25% of patients for prediction of fluid responsiveness.

Second, as underlined by Peyton and Chong, a percentage error of 30% or less for cardiac output monitoring is unrealistic.^[5] The authors concluded that a percentage error in agreement with thermodilution of ±45% represented a more realistic expectation of achievable precision in clinical practice.

As regards as the golden hour concept in sepsis management, the methods presented by Kumar *et al.* have the advantage of being easy to use. In this view, an end-point clinical survey using PVP in early treatment of sepsis would be very interesting.

Financial support and sponsorship

Institutional grant from Begin Military Hospital.

Conflicts of interest

There are no conflicts of interest.

**Matthieu Pissot, Alexandre Salvadori,
Kevin Kearns, Clement Dubost**

Department of Anaesthesiology and Intensive Care Medicine, Begin Military Hospital, 69, Avenue de Paris, 94163 Saint-Mandé, France

Correspondence:

Dr. Clement Dubost,
Department of Anaesthesiology and Intensive Care Medicine, Begin Military Hospital, 69, Avenue de Paris, 94163 Saint-Mandé, France.
E-mail: clement.dubost@hotmail.fr

References

1. Kumar D, Ahmed SM, Ali S, Ray U, Varshney A, Doley K. Correlation between central venous pressure and peripheral venous pressure with passive leg raise in patients on mechanical ventilation. *Indian J Crit Care Med* 2015;19:648-54.
2. Marik PE, Baram M, Valid B. Does central venous pressure predict fluid responsiveness? A systematic review of the literature and the tale of seven mares. *Chest* 2008;134:172-8.
3. Dellinger RP, Levy MM, Rhodes A, Annane D, Gerlach H, Opal SM, *et al.* Surviving sepsis campaign: International guidelines for management of severe sepsis and septic shock: 2012. *Crit Care Med* 2013;41:580-637.
4. Cammesson M, Le Manach Y, Hofer CK, Goarin JP, Lehot JJ, Vallet B, *et al.* Assessing the diagnostic accuracy of pulse pressure variations

for the prediction of fluid responsiveness: A “gray zone” approach. *Anesthesiology* 2011;115:231-41.

5. Peyton PJ, Chong SW. Minimally invasive measurement of cardiac output during surgery and critical care: A meta-analysis of accuracy and precision. *Anesthesiology* 2010;113:1220-35.

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

Access this article online

Quick Response Code:



Website:

www.ijccm.org

DOI: 10.4103/0972-5229.173698

How to cite this article: Pissot M, Salvadori A, Kearns K, Dubost C. Central venous pressure and peripheral venous pressure, however correlated are still both in the gray-area. *Indian J Crit Care Med* 2016;20:58-9.