HealthManagement
Promoting Management and Leadership

CRT Kinetics After Fluid Infusion

Peripheral tissue hypoperfusion is a strong predictor of poor outcomes in patients suffering from severe conditions, such as sepsis, cardiac arrest or cardiogenic shock. The evaluation of peripheral tissue perfusion is very important in identifying shock patients. This can be done at the bedside with either semi-quantitative tools such as the mottling score, or quantitative tools, such as skin temperature and the capillary refill time (CRT).

CRT measures the time necessary for the skin to return to baseline colour after applying pressure on the fingertip. It is a valuable tool for assessing the severity of an acute illness at both early and late stages. In the emergency ward, persistent, prolonged fingertip CRT (> 3 s) is associated with more severe organ failure, more frequent use of organ support therapy and higher in-ICU mortality. In the ICU, prolonged CRT (> 4.5 s on the index finger) may be associated with hyperlactataemia and a high SOFA score. In septic shock patients, persistent, prolonged finger CRT after resuscitation is predictive of 14-day mortality. The ANDROMEDA-SHOCK trial provided evidence that CRT can be used to guide treatment and resuscitation. In septic shock patients, a strategy based on CRT monitoring led to organ failure recovery. Hence, CRT is a valuable tool for triage and to guide resuscitation. However, there is very little information about CRT kinetics after fluid infusion.

In this study, the researchers analysed the kinetics of CRT variations after a fluid challenge in sepsis patients. They monitored fingertip CRT in sepsis patients during volume expansion within the first 24 h of ICU admission. This was measured every 2 minutes during 30 minutes following crystalloid infusion.

The accuracy of repetitive fingertip CRT measurements was evaluated on 40 critically ill patients. A CRT variation larger than 0.2 s was considered significant. Variations of CRT during volume expansion were also evaluated on 29 septic patients. Twenty-three patients were responders, defined by a CRT decrease > 0.2 s at 30 minutes after volume expansion, and six were non-responders. Among the responders, fingertip CRT quickly improved with a significant decrease at 6–8 minutes after the start of crystalloid infusion. Maximal improvement was observed after 10–12 minutes and maintained at 30 minutes. CRT variations significantly correlated with baseline CRT measurements.

These findings show that CRT improved during volume expansion with a significant decrease 6–8 minutes after the start of fluid infusion and a maximal drop at 10–12 minutes.

Click here for more Sepsis news.

Source: **Annals of Intensive Care**
Image Credit: **iStock**

Published on : Mon, 29 Aug 2022