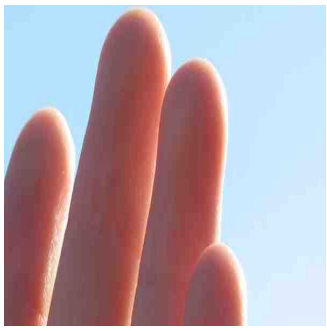
ICU
MANAGEMENT & PRACTICE

Fingertip Blood Sensor Can be Used for Trauma Patients



A spot check device that can give readings within 20 seconds has been tested in 525 critically injured patients. Trauma surgeons at the University of Arizona, Tucson, analysed use of the Spot check Pronto-7® Pulse CO-oximeter.

Using this device was a valid alternative to taking blood and typically waiting 10 minutes or longer for lab analysis of blood level or haemoglobin count, said lead study author Bellal Joseph, MD.

Joseph noted that the device was originally meant for outpatient settings to use to get readings for people who were anaemic. Their interest was sparked by its ability to get haemoglobin readings, which enables quick medical decision-making on where the patient needs to go, whether it's the intensive care unit or the operating theatre, without waiting for lab results.

Previous studies documented that up to three-quarters of deaths among trauma patients occurred within the first 24 hours of admission. 30-40 percent of trauma deaths are caused by severe blood loss. Thus fast, early detection and treatment of haemorrhage is extremely valuable in caring for critically injured patients.

In this study, published in the JACS, 450/525 (86 percent), underwent the Spot check measurements successfully. Each patient had three Spot check measurements with each invasive blood draw. The study authors found the Spot check readings had a strong correlation with the lab readings of blood samples.

Of the unsuccessful measurements, reasons ranged from nail polish on the patient's fingernails or dust or soot on the patient's fingers, or because the sensor did not fit - the research team only had access to one size.

According to Joseph, the other advantages of using the fingertip sensor include sparing the discomfort and efforts of placing a central line and making reading easier for children and elderly trauma patients.

A third method of checking blood levels, continuous noninvasive monitoring, was the subject of a previous study by the University of Arizona researchers. However, it did was not found to be suitable for trauma patients, as it did not give consistently accurate readings, and can be impractical in trauma patients.

The costs of the three methods were not investigated, but will be the subject of future studies. The team also plan to implement a protocol for nurses to use it, extract readings into the patient's electronic medical record and use it to continually monitor blood levels in patients with severe organ injuries at set time intervals.

The device tested is manufactured by Masimo, who did not provide any funding, compensation or devices for the study. However, Dr. Joseph noted that the company will supply devices for a second study to learn more about how the monitor can be used in the trauma bay.

Source: ScienceDaily
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