Fighting Sepsis at the Point of Care

Every year, sepsis is diagnosed in over 1.5 million people in the United States and at least 250,000 die from sepsis.[1] Sepsis represents the biggest US hospital expense, totaling around 24 billion USD annually.[2] Nationwide, hospitals are adopting new screening programs to improve rates of early recognition and treatment of sepsis to prevent progression from severe sepsis to septic shock, and reduce the numbers of deaths and length of hospital stays due to sepsis.

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Huntsville Hospital, a 941-bed, publically owned facility in Huntsville, Alabama, has been among the leaders in improving protocols and education focused on sepsis. Kristie M. Campbell, Manager of Point of Care (POC) Testing and Outreach Operations for Huntsville Hospital Laboratory described how POC testing was integrated into the hospital’s sepsis protocol. “We wanted to expand its services to be truly competitive with other hospitals in the South East region of the U.S., and to ensure that testing was done as efficiently as possible,” she recalled.
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Kristie M. Campbell,
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Introduction of point of care testing

“POC testing has become integrated in how we care for our patients,” Campbell emphasizes. “Clinicians want it everywhere that we care for patients in our hospital.” For these “early adopters” of POC handheld technology, the epoc Blood Analysis handheld device represented a “natural progression” of the POC testing that was introduced 22 years ago. The hospital began using the device in cardiovascular operating rooms and the intensive care unit (ICU) in 2009, followed by a phased rollout in other departments and ICUs.

The POC lactate test was added to the epoc device as part of the hospital’s sepsis initiative. Decreasing the time between taking blood from the patient to the result being available to the clinician ("vein to brain time," as Campbell likes to call it) is critical. “For every hour you wait to give an antibiotic to a patient, the mortality risk of that patient increases 8%,” she noted. “With a handheld device, the nurse can get test results within 3 minutes.”

Campbell recalled that on the first floors where the sepsis program was introduced, mortality over the first three to six months decreased by almost 50%, “a very astounding number.” Huntsville Hospital also participated in a study which found that around 5% of patients with an initially negative lactate result (< 2.0 mmol/L) went on to develop septic shock. So the recommendation to do a repeat assay within hours after an initial negative assay was adopted.
The Society of Critical Care Medicine recently issued a new “sepsis bundle,” outlining the steps that should be taken within a critical window of one hour for early identification and appropriate management of sepsis.[3] The new bundle emphasizes how randomized controlled trials have shown that lactate-guided resuscitation leads to a significant reduction in mortality. It directs that measurement of lactate, along with blood cultures, administration of fluids and antibiotics, and, if necessary initiation of vasopressor therapy, all be started immediately. “There would be no way we could meet those milestones and criteria without using POC lactate,” Campbell concludes. “It is crucial to our care for all of our patients in our hospital.”

Linda Brookes is a freelance medical writer and editor who divides her time between London and New York, working for a variety of clients in the healthcare and pharmaceutical fields.

Reference


All Online sources last accessed Aug, 21, 2018

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