

Sepsis – follow the guidelines

Sepsis is an ever-present foe in the intensive care unit (ICU). Sepsis and septic shock account for 11% of admissions to general ICUs.^[1] Mortality exceeds 10% for sepsis, and sits at 40% in patients with septic shock.^[2] A further 15% of ICU patients acquire infection in the unit, and have a 32% mortality.^[1] Some survivors of sepsis face long-term physical, cognitive and emotional disability.^[3]

Recently, the terms sepsis and septic shock have been redefined and simplified, doing away with the older terms ‘SIRS’ (systemic inflammatory response syndrome) and ‘severe sepsis.’^[2] The Sepsis-3 definition now defines sepsis as a ‘life-threatening organ dysfunction caused by a dysregulated host response to infection’. Evidence-based clinical parameters that predict increased mortality from sepsis were identified from a large electronic database. ICU patients who are likely to have sepsis can be identified by a two-point increase in the Sequential Organ Failure Assessment (SOFA) score. For patients in emergency units or hospital wards, the more convenient but slightly less specific Quick SOFA (qSOFA) score has been developed. The score uses three parameters, and any two of the following are indicative of sepsis and carry a 10% risk of death: hypotension (systolic blood pressure <100 mmHg), a decrease or alteration in the level of consciousness, or an increase in respiration rate of more than 22 breaths per minute.^[2]

In this issue of *SAJCC*, Chausse *et al.*^[4] review the complex pathophysiology of sepsis, and then go on to discuss several promising therapeutic options, as well as several controversial old therapies. Understanding the pathology of a condition is the scientific basis for developing any new therapy. Over the past six decades, numerous molecules and devices have been developed and tested in an attempt to find the ‘magic bullet’ that would stop sepsis in its tracks.^[5] However, when these treatments were studied using multi-centred, prospective, randomised controlled trials, the results were disappointing. This could be because the complex network of mediator activation is too advanced by the time patients present for treatment to allow a single therapy to block the inflammatory process, or because these large trials are too heterogeneous to detect an outcome difference.^[5]

However, all is not lost. Recent studies *have* shown a reduction in mortality due to sepsis. The Australian and New Zealand Intensive Care Society adult ICU patient database showed a steady reduction in mortality due to severe sepsis: from 35% in 2000 to 18.4% in 2018.^[6] Progress is being made in the earlier detection of sepsis, and in implementing evidence-based bundles of care. One hospital managed to reduce sepsis mortality from 29% to 21% by implementing nurse-

led screening and detection, followed by protocol-guided intervention delivered by nurse practitioners.^[7]

The Surviving Sepsis Campaign guidelines were first published in 2004, and have been updated every 4 years subsequently. These are international evidence-based consensus documents that emphasise the early recognition of sepsis, early administration of antibiotics and control of the infection source. The latest version (Campaign for Sepsis 2016) actually simplifies management, as several old ideas, such as improving oxygen delivery to tissues, have fallen by the wayside.^[8]

How good are we at treating sepsis in South Africa (SA)? We do not know, and it is one of the reasons why we need a national ICU database. One study in SA reported that the majority of the Surviving Sepsis Campaign guidelines are frequently ignored.^[9]

Sepsis mortality is unlikely to be reduced by some new magic molecule in the short term. We know it can be reduced by ensuring that systems are in place that will detect sepsis at an early stage, and ensuring that management guidelines are adhered to. Just do it!

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