Surviving Sepsis Campaign

Updated Bundles in Response to New Evidence

The leadership of the Surviving Sepsis Campaign (SSC) has believed since its inception that both the SSC Guidelines and the SSC performance improvement indicators (1) will evolve as new evidence that improves our understanding of how best to care for patients with severe sepsis and septic shock becomes available.

With publication of 3 trials (2,3,4) that do not demonstrate superiority of required use of a central venous catheter (CVC) to monitor central venous pressure (CVP) and central venous oxygen saturation ($ScvO_2$) in all patients with septic shock who have received timely antibiotics and fluid resuscitation compared with controls or in all patients with lactate >4 mmol/L, the SSC Executive Committee has revised the improvement bundles as follows:

TO BE COMPLETED WITHIN 3 HOURS OF TIME OF PRESENTATION*:

1. Measure lactate level
2. Obtain blood cultures prior to administration of antibiotics
3. Administer broad spectrum antibiotics
4. Administer 30ml/kg crystalloid for hypotension or lactate ≥4mmol/L

* *"Time of presentation" is defined as the time of triage in the emergency department or, if presenting from another care venue, from the earliest chart annotation consistent with all elements of severe sepsis or septic shock ascertained through chart review.*

TO BE COMPLETED WITHIN 6 HOURS OF TIME OF PRESENTATION:

5. Apply vasopressors (for hypotension that does not respond to initial fluid resuscitation) to maintain a mean arterial pressure (MAP) ≥65mmHg
6. In the event of persistent hypotension after initial fluid administration (MAP < 65 mm Hg) or if initial lactate was ≥4 mmol/L, re-assess volume status and tissue perfusion and document findings according to Table 1.
7. Re-measure lactate if initial lactate elevated.

TABLE 1

DOCUMENT REASSESSMENT OF VOLUME STATUS AND TISSUE PERFUSION WITH:

EITHER

- Repeat focused exam (after initial fluid resuscitation) by licensed independent practitioner including vital signs, cardiopulmonary, capillary refill, pulse, and skin findings.

OR TWO OF THE FOLLOWING:

- Measure CVP
- Measure $ScvO_2$
- Bedside cardiovascular ultrasound
- Dynamic assessment of fluid responsiveness with passive leg raise or fluid challenge

Of note, the 6-hour bundle has been updated; the 3-hour SSC bundle is not affected.

While no suggestion of harm was indicated with use of a central line in any trial, and published evidence shows significant mortality reduction using the original SSC bundles (5), the committee has taken a prudent look at all current data and, despite weaknesses as in all studies, determined the above bundles to be the appropriate approach at this time.

References:

1. Dellinger RP, Levy MM, Rhodes A, et al. Surviving Sepsis Campaign: International guidelines for management of severe sepsis and septic shock: 2012. Crit Care Med 2013; 41:580–637

2. ProCESS Investigators, Yealy DM, Kellum JA, Juang DT, et al. A randomized trial of protocol-based care for early septic shock. N Engl J Med 2014; 370(18):1683-1693

3. The ARISE Investigators and the ANZICS Clinical Trials Group. Goal-directed resuscitation for patients with early septic shock. N Engl J Med 2014; 371:1496-1506

4. Mouncey PR, Osborn TM, Power GS, et al for the ProMISe trial investigators. Trial of early, goal-directed resuscitation for septic shock. N Engl J Med 2015: DOI: 10.1056/NEJMoa1500896

5. Levy MM, Rhodes A, Phillips GS, et al. Surviving Sepsis Campaign: association between performance metrics and outcomes in a 7.5 –year study. Intensive Care Med 2014; 40: 1623-1633