Summary of the 2016 International Surviving Sepsis Campaign

A Clinician's Guide

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KEYWORDS

• Sepsis • Septic shock • Surviving Sepsis Campaign (SSC) International Guidelines • Organ dysfunction • Management • Clinician

KEY POINTS

- Facilitate earlier recognition.
- Sepsis and septic shock are medical emergencies; therefore, recommendations for treatment and resuscitation should start immediately.
- Timely intervention and management of patient with sepsis/septic shock improves outcomes; each hour delay in administration of appropriate antimicrobials is associated with a measurable increase in mortality.

INTERNATIONAL SEPSIS GUIDELINES 2016

The Surviving Sepsis Campaign (SSC): International Guidelines for Management of Sepsis and Septic Shock: 2016 provides updated recommendations, rationales, and evidence tables for best care of patients with sepsis.[1] "Sepsis is a life-threatening organ dysfunction caused by a dysregulated host response to infection.[2–4] Septic shock (sepsis-3) is a subset of sepsis with circulatory and cellular/metabolic dysfunction associated with a higher risk of mortality than with sepsis alone."[4] Patients with septic shock can be clinically identified by vasopressor requirement to maintain a mean arterial pressure (MAP) of 65 mm Hg or greater and a serum lactate level greater than 2 mmol/L (>18 mg/dL) in the absence of hypovolemia.[2] Vasopressor requirement and elevated lactate levels are associated with hospital mortality rates greater than 40%.[2] Patients with sepsis are 8 times more likely to die during hospitalization.[5] Sepsis and septic shock are major health care problems, affecting millions of people around the world each year and killing as many as 1 in 4 and often more.[6–8] Early identification and evidence-based management of sepsis and septic shock in the initial

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hours after sepsis develops, improves outcomes as much as polytrauma, myocardial infarction, or stroke.[1]

The SSC is the leading organization responsible for educating health care professionals on the most current scientific evidence on the timely and appropriate treatment. The 2016 SSC guidelines were generated by 55 international experts, with expertise in specific aspects of sepsis, formulating the executive and steering committees, with 2 guideline committees, the oversight group and the group heads, and[1,2] lastly, the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) methodology group. The panel consisted of 5 sections: hemodynamics, infection, adjunctive therapies, metabolic, and ventilation.[1] The GRADE system assessed the quality of evidence from high to very low, and formulated recommendations as weak or strong, or when a best practice statement (BPS) was warranted.[1,9] The BPS represent ungraded strong recommendations and are used under strict criteria, when the benefit or harm is equivocal; meaning the new guidelines are guided by dynamic variables and ongoing evaluation of clinical response to treatment.[1] The GRADE method was applied in selecting only outcomes that were considered critical from the patient's perspective, based on 6 categories: (1) risk of bias, (2) inconsistency, (3) indirectness, (4) imprecision, (5) publication bias, and (6) other criteria, followed by assessment of the balance between benefit and harm, patients' values and preferences, cost and resources, and feasibility and acceptability of the intervention.[9] The Surviving Sepsis Guideline panel provided 93 statements, 32 strong, 39 weak, 18 best practice statements, and 4 unanswered questions, on the early management and resuscitation of patients with sepsis or septic shock.[1] The guidelines are a resource document of 67 pages of recommendations, rationales, evidence tables, and 655 references with approaches to treat the sepsis patient from initial diagnosis, resuscitation, antimicrobial therapy, source control, fluid/vasoactive therapy, and progressing through organ support and adjunctive therapy recommendations.[8] The recommendations are guidelines and are not intended as standards of care, but more of an individualized, "patient-centered" approach guide.

The 2016 consensus eliminated the terms "severe sepsis" and "systemic inflammatory response syndrome" (SIRS). Components of SIRS include tachycardia, tachypnea, hyperthermia, and abnormalities in peripheral white blood cell count.[10,11]Previous studies have shown the presence of SIRS is nearly ubiquitous in hospitalized patients and occurs in benign conditions, both related to and not related to infection, and not adequately specific to the diagnosis of sepsis.[10] The new definitions focus on organ dysfunction and hypoperfusion in the presence of infection, than on inflammation, specifically SIRS.[2] Furthermore, the term "severe sepsis" is also no longer recommended.[2] Singer and colleagues[2] (2016) stated severe sepsis is hard to define clinically and is not helpful in guiding clinical interventions. Clinically, the septic shock subset includes patients with refractory hypotension despite adequate fluid resuscitation requiring vasoactive medications to maintain an MAP greater than 65 mm Hg. With an understanding of sepsis and the pathobiology of this life-threatening condition, it is essential that the clinician stay abreast of the changes to sepsis management with the most updated guidelines. There were numerous important changes and major advances made in the revised guidelines; initial resuscitation and antibiotic therapy are the domains with the most important changes and advances.[12]

The patient with sepsis could have any or all of the following symptoms related to infection: altered mental status (AMS); tachycardia (heart rate [HR] >90 beats/min); hypotension (systolic blood pressure [SBP] <90 beats/min, MAP <90 mm Hg, or