

New Sepsis Guidelines - What Clinicians Need to Know



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Abstract

Sepsis and septic shock are life-threatening conditions requiring early identification and prompt treatment. Recently published guidelines provide clinicians with treatment recommendations and goals of therapy. This mini-review summarizes major pharmacotherapeutic recommendations for the management of sepsis and septic shock based on the 2016 Surviving Sepsis Campaign International Guidelines.

Keywords: Sepsis; Septic shock; Guideline; Update

Abbreviations: SSC: Surviving Sepsis Campaign; SCCM: Society of Critical Care Medicine; ESICM: European Society of Intensive Care Medicine; GRADE: Grading of Recommendations Assessment, Development and Evaluation

Introduction

Sepsis is the life-threatening organ dysfunction due to an abnormal host response to infection. Septic shock is defined as a category of sepsis involving circulatory and cellular dysfunction accompanied by increased mortality risk. Over 1.5 million sepsis cases occur each year in the United States. Appropriate management of sepsis and septic shock requires prompt identification and treatment [1]. Early treatment has been associated with reduced mortality [2]. Recently published guidelines provide clinicians with treatment recommendations and goals of therapy. This mini-review provides a summary of major pharmaco-therapeutic recommendations for management of sepsis and septic shock based on the 2016 Surviving Sepsis Campaign International Guidelines [3].

Discussion

The 2016 Surviving Sepsis Campaign (SSC) International Guidelines for Management of Sepsis and Septic Shock were published in March 2017 and represent an update of the 2012 SSC Guidelines for Management of Sepsis and Septic Shock. These guidelines include updated literature published since the 2012 guideline. Sponsors included Society of Critical Care Medicine (SCCM) and the European Society of Intensive Care Medicine (ESICM). The consensus committee included international sepsis experts. The panel was divided into 5 subgroups including hemodynamics, infection, adjunctive therapies, metabolic, and

ventilation. The Grading of Recommendations Assessment, Development, and Evaluation (GRADE) system was used to evaluate the quality of evidence and guided the strength of guidelines recommendations.

The focus of the guideline is early management of sepsis and septic shock. The definition of sepsis and septic shock were revised according to the Sepsis-3 report, eliminating the “severe sepsis” category [4]. Sepsis-3 introduces clinical criteria that allow clinicians to quickly identify patients with sepsis utilizing the quick SOFA diagnostic tool. Once patients are identified, treatment and resuscitation should begin immediately. At least 30mL/kg of intravenous crystalloid should be administered within the first 3 hours and further fluids based on assessment of patient hemodynamic status. For septic shock patients requiring vasopressors, norepinephrine is the first-line drug and target mean arterial pressure is 65mmHg. Normalization of lactate is suggested as a resuscitation goal. Vasopressin or epinephrine may be added to norepinephrine to achieve target mean arterial pressure. Vasopressin addition to norepinephrine may assist in decreasing norepinephrine dosage. The use of dopamine is limited to select patients, and guidelines recommend against use of low-dose, renal protection dopamine.

In addition to fluid resuscitation, early antimicrobial therapy is crucial in management of sepsis and septic shock. The guidelines recommend intravenous antimicrobial therapy should be started

immediately and administered within 1 hour of recognition. Although specific antimicrobial recommendations are not provided, it is recommended patients with sepsis and septic shock receive empiric broad-spectrum antimicrobial treatment that will cover likely organisms. Antimicrobial therapy should be narrowed based on identification of pathogens and sensitivity results. Additional recommendations include avoiding the use of intravenous corticosteroids for the treatment of septic shock in patients who respond to fluid resuscitation and vasopressors. It is suggested to use intravenous hydrocortisone in patients who despite these therapies do not achieve hemodynamic stability. In adult patients with sepsis-induced acute respiratory distress syndrome and PaO₂/FiO₂ ratio less than 150mmHg, it is suggested to use neuromuscular blockers for 48 hours or less. Patients with sepsis are at risk for venous thromboembolism and stress ulcers. Patients should receive pharmacologic venous thromboembolism prophylaxis and low-molecular-weight heparin is recommended over unfractionated heparin. For stress ulcer prophylaxis, either proton pump inhibitors or histamine-2 receptor antagonists may be used.

Conclusion

The 2016 Surviving Sepsis Campaign International Guidelines provide important recommendations to help guide clinicians in appropriately managing patients with sepsis and septic shock.

References

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