

Preface



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Guest Editor

The management of sepsis is a common challenge for anyone who works in a critical care setting. The diagnosis and management of sepsis, severe sepsis, and septic shock are a familiar process to clinicians who are in the emergency department, acting as part of a rapid response team taking care of patients who deteriorate on the wards, or are in the intensive care unit.

Over the past ten years, insights into the host response to infection have deepened. Multiple studies have identified specific genotypic variants associated with worse outcomes in patients who have sepsis. Also, many studies have evaluated the phenotypic expression of inflammatory markers in the evolution of the sepsis response. Over time, clinicians will likely be able to use this information in the diagnosis, risk assessment, and management of sepsis. More recently, new technology and bench studies have led to a greater understanding of the important role of the endothelium and microcirculation in the progression of sepsis. Although the clinical impact of these studies has to be determined yet, these studies offer promising new targets for ongoing trials. One of the most important advances in the field has been in clinical trials. Large-scale, multi-center trials, previously limited to industry-sponsored testing of new therapeutic agents, are no longer unusual. As a result, pathophysiologic insights may be tested now in large-scale clinical trials that sometimes are funded by national funding agencies and conducted on a global scale.

In this issue, an impressive line-up of scientists, clinical trialists, and experts in clinical practice have been assembled. The articles cover the gamut of sepsis, discussing the host response to infection from the molecular to the macroscopic level. In addition, although the results of sepsis trials still have yet to provide a definitive answer for the management of sepsis, there are enough data available in the articles to provide the basis for large scale quality improvement efforts that are focused on creating a minimum standard of care.

The last decade in sepsis research and clinical practice holds great promise for the future of sepsis management. As technology allows for better and more rapid identification of the molecular derangements that become prevalent in severe sepsis and septic shock, this information may be used more precisely to shape the clinical approach to caring for critically-ill patients. More careful titration of clinical interventions, supported by a deeper understanding of pathophysiology, may allow clinicians to provide better care and reduce mortality in this commonly-encountered illness in the intensive care unit.

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