

## Preface



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Guest Editor

From the early recognition of altered hemodynamics in severe sepsis and septic shock, practitioners have sought new and improved ways to optimize convective oxygen transport, to establish important end points for resuscitation, and to assess the effect of various interventions on organ function and survival. In this regard, investigations of animal models of sepsis have provided unequivocal support for the central role of hemodynamics in determining outcome.<sup>1</sup> Unfortunately, the human experience has been checkered with positive and negative trials, providing clinicians with little certainty about how best to proceed when faced with patients suffering from severe sepsis and septic shock.<sup>2-5</sup> Notwithstanding The Surviving Sepsis Campaign's endorsement of early goal-directed therapy, targets such as mean arterial pressure, central venous pressure, hemoglobin levels, and central venous saturation remain controversial goals and await validation in large, multicentered randomized trials.<sup>6</sup>

Progress in our understanding of the pathophysiology of sepsis and the introduction of new technologies have added to the clinician's dilemma. Which of the available and emerging monitoring devices and techniques offers the best assessment of the state of the circulation? What role does microcirculation play in the development of organ dysfunction? Will changes in the macrocirculation influence microcirculatory blood flow? Does this have any effect on tissue use of oxygen?

In this issue of the *Clinics*, we have attempted to address these and other questions that clinicians routinely face. Articles addressing static and dynamic preload indices, echocardiography, venous blood gas analysis, and the like are meant to provide practitioners with a balanced overview of the topics and seasoned opinions about the current role of these approaches and technologies in the care of patients.

I would like to thank the many contributors for their efforts in reviewing and condensing a large body of work in the area of hemodynamics and oxygen transport.

In addition, special consideration goes out to Dr Richard Carlson, who has been a sage voice and source of inspiration to me throughout my career.

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