

Updates in Critical Care Medicine: Evidence-based Practice in 2020

GERARDO P. CARINO, MD, PhD
ANDREW T. LEVINSON, MD, MPH
GUEST EDITORS

INTRODUCTION

Welcome to this issue of the *Rhode Island Medical Journal* titled "Updates in Critical Care Medicine," which offers concise and comprehensive reviews on new and important issues that occur regularly in the critical care setting. Our distinguished Rhode Island colleagues, who are dedicated to improving the care and outcomes of critically ill medical patients, present the following topics:

Sepsis

Sepsis management has dramatically evolved over the last two decades. The multi-national Surviving Sepsis Campaign has driven much of the research and recommendations for sepsis care. We are fortunate that one of the campaign leaders is **MITCHELL LEVY, MD**, Chief of Brown's Division of Critical Care, Pulmonary and Sleep Medicine. He and **DR. JISOO LEE** provide an excellent review of the most recent clinical trials related to the management of sepsis and present current recommendations for patient management.

Acute Renal Failure

Renal failure is extraordinarily common in the critically ill and has been shown to predict mortality. The correct timing for starting renal replacement in the ICU remains an unanswered question. Recent studies have attempted to better describe appropriate timing of dialysis in patients who develop renal failure. **DR. KATHERINE COX**, et al review some of the most important literature in the field. Of note, Rhode Island and Miriam Hospitals are sites for the current STARRT-AKI trial which aims to better address this issue.

Transfusion of red blood cells

Less may be more in the case of the transfusion of red blood cells to critically ill patients. Many patients are anemic or become anemic in the ICU setting, yet multiple studies suggest that transfusion of red blood cells may be overutilized and does not achieve desired goals. **DR. CHANNING HUI**, et al review data regarding red blood cell transfusions and present recommendations for appropriate transfusion triggers in the ICU.

End-of-life care in the ICU

Despite clinical advances, ICU mortality remains significant. Communicating with patients and families about a patient's critical condition and facilitating decisions about end-of-life (EOL) are a fundamental aspect of critical care medicine. Over the last two decades there has been a significant increase in knowledge about how to best care for both patients and their families in this situation. **DR. SARAH**

RHODS, et al review current best practices for communicating with and supporting family members and patients, as well as reducing distress during EOL. The authors also discuss the role of the evolving specialty of palliative care in the ICU.

Point-of-care ultrasound (POCUS) for patients with acute respiratory failure

Very few things have changed critical care medicine in the recent past than the advent of bedside ultrasound to answer clinical questions in real time. Initially point-of-care ultrasound (POCUS) focused on assistance with vascular access, but currently includes diagnosis of pulmonary conditions. Diagnosing the cause of patients with severe respiratory failure can be a challenging dilemma and POCUS may significantly increase diagnostic accuracy. It is now widely taught in academic critical care medicine programs such as Brown's. **DR. MOHAMMAD ARABIAT**, et al review key findings of lung ultrasound and the evidence for its use in diagnosing patients with dyspnea and acute respiratory failure.

Extracorporeal life support (ECLS)

Extracorporeal life support (ECLS) has been rapidly adopted for use in adult patients with severe acute respiratory failure and can help sustain patients refractory to conventional mechanical ventilator support. The Rhode Island and Hasbro Children's Hospital ECLS program is the only one in Southern New England and has been awarded a Gold Center of Excellence by the Extracorporeal Life Support Organization. **DR. COREY VENTETUOLO** is the Medical Director, ECLS program, and **DR. NEEL SODHA** is the Surgical Director, ECMO and Mechanical Circulatory Support, at Rhode Island Hospital. They and **DR. ADEEL ABBASI**, et al provide an excellent state-of-the-art review about ECLS for respiratory failure.

Managing high-risk pulmonary embolism

The management of high-risk pulmonary embolism remains a rapidly evolving field in critical care medicine. Medical, interventional and surgical options can all be considered and makes decision-making quite complex. Multi-disciplinary Pulmonary Emergency Response Teams (PERTs) have been recently described as a way to assist in this complex decision-making. **DR. CHRISTOPHER MULLIN** is director of Rhode Island Hospital's PERT team. He and **DR. CHRISTOPHER THEROUX**, et al review the recent literature and treatment options for patients with pulmonary embolism at high risk of clinical decompensation or death.

In conclusion, we very much hope you enjoy this compilation and advance your knowledge about key current topics in critical care medicine both here in Rhode Island and globally.

Guest Editors

Gerardo P. Carino, MD, PhD, Associate Professor of Medicine,
Alpert Medical School of Brown University.

Andrew T. Levinson, MD, MPH, Assistant Professor of Medicine,
Alpert Medical School of Brown University.

Correspondence

Gerardo P. Carino, MD, PhD
The Miriam Hospital
164 Summit Avenue
Providence, RI 02906
401-793-4501
Fax 401-793-4511
gerardo_carino@brown.edu