

SPECIAL SUPPLEMENTS

Hamilton Medical symposium:
Optimising patient-ventilator synchronisation

Nestlé Nutrition Institute symposium:
Nutritional challenges in ICU patients

Multiple organ support

Introduction to multiple organ support, *D. Abrams et al.*

From multiple organ support therapy (MOST) to extracorporeal organ support (ECOS) in critically ill patients, *C. Ronco et al.*

Chronic respiratory dialysis, *D. Abrams et al.*

Understanding LVAD & artificial hearts, *N. Aissaoui et al.*

PLUS

CO₂ in the critically ill, *L. Morales-Quinteros et al.*

Immune dysfunction in sepsis, *V. Herwanto et al.*

Hypothermia in neurocritical care patients other than cardiac arrest, *R. Helbok & R. Beer*

Intracranial pressure monitoring devices, *S. Patil & F. Fadhilallah*

Complications of decompressive craniectomy in neurological

emergencies, *J. Gonzalez*

A novel communication device for tracheostomy ICU patients, *F. Howroyd*

The Critical Care Resuscitation Unit, *L.I. Losonczy et al.*

Variation in end-of-life care, *A. Michalsen*

Simulate or not to simulate? *M. Poggioli et al.*

Being an expert witness, *J. Dale-Skinner*

Role of the chaplain in the ICU, *K. Jones*

Developing new approaches to patient safety, *J. Welch et al.*

How to provide better intensive care? *J. Takala*

Caring for critically ill immunocompromised patients, *E. Azoulay*



Multiple organ support

Interventions intended to support one organ can have unexpected implications on the patient, presenting physicians with critical decisions. These can be aided with innovative technologies and new techniques, but only if well understood. We often come across multiple organ dysfunction syndrome (MODS), with incremental degrees of physiologic derangements in individual organs, which should be seen as a continual process, requiring a harmonised, multidisciplinary approach to management.

Darryl Abrams and colleagues start us off on our Cover Story journey into multiple organ support, with their discussion on the need to understand how devices intended for support of one organ can have an indirect impact on other organs—an important consideration given renewed interest in novel extracorporeal technologies as a means of supporting individual organ failures. As devices evolve to offer simultaneous support for multiple organ failure, it will be important to emphasise a multidisciplinary approach at centres capable of performing both extracorporeal and advanced non-extracorporeal management strategies.

This takes us to the next article in our Cover Story from Claudio Ronco and associates. They describe the concept of extracorporeal organ support (ECOS) for treatment of combined organ dysfunction in critical illness and suggest creation of a new generation of ECOS equipment with integrated features to avoid artificial organ negative cross-talk.

Darryl Abrams and cohorts then take us to the topic of chronic respiratory dialysis, providing us with a focus on the potential of extracorporeal carbon dioxide removal techniques to manage chronic hypercapnic respiratory failure. From here, we move on to devices for the heart, with Nadia Aissaoui and colleagues providing guidance for understanding the physiology of mechanical assist devices, their functioning, potential complications and their management.

In our Series section on gases, Luis Morales-Quinteros and cohorts provide a focus on the potent effects that carbon dioxide exerts on lung biology, which could be particularly relevant in patients with acute respiratory distress syndrome (ARDS).

Moving on to our Matrix, we start with an article from Velma Herwanto and associates, which provides an overview of the recent advances in the diagnosis and treatment of immune system dysfunction in sepsis. Following this, Raimund Helbok and Ronny Beer review the evidence supporting the use of hypothermia in neurocritical care

patients beyond care after cardiac arrest. Here, they look at ongoing clinical trials of targeted temperature management for neurocritical care and provide some thoughts for designing future studies.

Shashank Patil and Fiqry Fadhllillah then provide us with a review of invasive and noninvasive devices that can be used to monitor intracranial pressure, following which Isabel Gonzalez provides a brief report on complications of decompressive craniectomy in neurological emergencies. Finally, Fiona Howroyd details a multidisciplinary collaboration to develop a communication device for tracheostomy patients in the intensive care unit, moving from patient ideas and innovation through to readiness for clinical trial.

In our Management section, Lia Losonczy and colleagues provide us with a description of the framework they used to create a specialised unit, which operates with emergency department flow, and facilitates timely transfers of critically ill patients. Following this, Andrej Michalsen looks at variation in end-of-life care (EOLC), and asks whether we need yet another standard operating procedure, or whether a roadmap would be better to harmonise EOLC across institutions and, perhaps, healthcare systems. Miriam Poggioli and colleagues then engage in a brief discussion on the importance and the state of the art of simulation in anaesthesia and intensive care medicine, after which John Dale-Skinner moves our focus onto the practicalities of being an expert witness and what qualities are needed to succeed in this important role.

Our next article is from Karen Jones, who discusses the role of the chaplain as a resource for ethically competent support and compassionate caring for patients. After this, John Welch and colleagues present us with a focus on the joining of the International Society for Rapid Response Systems with the Patient Safety Congress in July 2018 to develop new approaches to managing patients at risk of deterioration.

In our Interview section, Jukka Takala discusses with us how to provide better intensive care with a systems approach and individualised care, followed by an interview with Elie Azoulay with a focus on whether we can do a better job caring for critically ill immunocompromised patients.

I hope you find this issue stimulating. If you would like to get in touch with me, please feel free to email me at JLVincent@icu-management.org.

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