
ICU Volume 13 - Issue 1 - Spring 2013 - Editorial

Organ Interaction

Author

Jean-Louis Vincent

Editor-in-Chief, ICU Management

Head Department of Intensive Care Erasme Hospital / Free

University of Brussels. Brussels, Belgium

jlvincen@ulb.ac.be

Organ interactions in critical illness may occur more often than we realise and physicians' failure to recognise and react to such scenarios is leading to a multitude of deaths worldwide. Management of bi-directional dysfunction and organ crosstalk has been evolving rapidly in recent years, however, meaning that increasingly complex illnesses are becoming treatable throughout geographically and economically disparate areas.

The severely injured, polytraumatised patient has taken centre-stage of late, both driving and benefiting from recent advances in trauma care. The first article in this issue of ICU Management, by Dr. Dieter Weber and Prof. Zsolt Balogh, discusses the importance of understanding organ crosstalk and polytrauma to assist clinical prediction of illness severity and diagnosis. The authors provide a definition for polytrauma and highlight the complex pathophysiology of inflammation, providing a specific focus on crosstalk between the kidney and other organs. Our second article, "How to Understand Organ-Organ Interactions" focuses on polycompartment syndrome (PCS) and offers a review of the different aspects of PCS and the interactions between individual compartments. In this in-depth article, Dr. Manu Malbrain describes the key role that the abdomen plays in PCS and the effect that intra-abdominal hypertension (IAH) has on different organ systems, along with recommendations to compensate for these effects. The final article in our Cover Story, from Drs. Samir Shah and Daniel Clair, discusses critical limb ischaemia (CLI), with an emphasis on revascularisation, undertaken via open surgery or endovascular intervention as the foundation of therapy.

Our series topic this year will be Sepsis Management, and in this issue Drs. Jared Greenberg and John Kress discuss an area that is insufficiently recognised by clinicians and healthcare practitioners: healthcare-associated bacterial infections as common sources of severe sepsis among people with HIV. The authors call to mind that patients are now presenting to ICUs with greater amounts of prior healthcare exposure and thus may be more likely to develop severe sepsis from antibiotic-resistant bacterial organisms than from opportunistic infections. They suggest that current recommendations for the prevention and management of healthcare-associated infections do not account for a patient's HIV status; thus, this is an area that requires further study.

In the first Matrix Feature of the year, Prof. Jean-Charles Preiser provides an analysis of the future of glucose control in the ICU. He puts forth that the question of whether outcome will be improved by maintaining BG within a narrow range can only be answered when rapid, accurate, interference-free, inert, and cost-effective continuous glucose monitoring (CGM) systems are validated for clinical use. He concludes that CGM systems and individualised insulin algorithms are promising tools that will enable us to avoid the three domains of dysglycaemia associated with increased mortality. The second of our Matrix Features is by Drs. Michael Casaer and Dieter Mesotten. The authors recognise that there is an important discrepancy between the amount of EN we think we are giving and what is really taken up by the patient. As such, in their article, "Nutritional Failure: An Adaptive Response to Critical Illness?" they discuss the importance of nutritional intake in critical illness as well as the incidence of nutritional interruption and nutritional loss.

In this issue, the area of focus for our Management section is early warning. Dr. Heather Duncan and Peter van Manen, Managing Director of McLaren Electronics, describe a software platform that is used for Formula One telemetry, which has been adapted for use in critically ill patients. This enables real-time principal component analysis and predictive modelling, which are promising solutions for developmental physiological changes and patient specific variations.

Our interview for this issue is with Dr. Sean Bagshaw, Clinician Scientist and Associate Professor in the Division of Critical Care Medicine at the University of Alberta, Canada. Dr. Bagshaw offers an overview into the most up-to-date research in the field of acute kidney injury and also continues on the topic of organ crosstalk by telling us which organ interactions he thinks are posing the greatest challenge to physicians.

Italy is the country of focus with Drs. Lorenzo Ball and Maria Vargas along with Prof. Paolo Pelosi discussing an area of intensive care in which Italy holds antique tradition: the tracheostomy. Optimisation of percutaneous and surgical tracheostomy techniques is one of the challenges of modern ICU management and different approaches have been developed throughout Europe. In this article, authors analyse the results of the Italian experience in tracheostomy practice, matching them with the European context.

Published on : Thu, 14 Mar 2013