

SPECIAL SUPPLEMENT
Aspen Symposium
during ESICM 2018

Imaging

Imaging and intensive care medicine: an evolving partnership, *A. McLean*

Whole-body ultrasound in the intensive care unit: bedside ultrasound of the whole body, *A. Denault et al.*

Clinical assessment of critically ill patients by whole-body ultrasonography, *R. Wiersema et al.*

Using ultrasound to prevent diaphragm dysfunction, *T. Schepens & E.C. Goligher*

Imaging and ICU: advice from a radiologist, *M. Sánchez*

Abdominal point-of-care ultrasound in critical care: the secrets of the abdomen, *J. Wilkinson et al.*

Multimodal neuromonitoring catheter insertion: secondary complications, *I. González & D. Santamarta*

Required and preferred scanner features for different ultrasound applications: executive summary, *ECRI Institute*

PLUS

Advances in monitoring expired CO₂ in critically ill patients, *M. Mezyd & JC Richard*

How to manage severe dengue infection, *S. Jog et al.*

Antifungal treatment in the ICU: best practice in managing fungal infections, *A. Cortegiani & M. Bassetti*

Interprofessional teamwork in the ICU: panacea or illusion? *A. Xyrichis*

Dr. Theodoros Kyprianou joins Editorial Board, *K. Theodoros*



Imaging

Our cover story this issue is Imaging. The radiology armamentarium is vast, with many imaging modalities available to aid diagnosis and monitoring of therapy in critically ill patients—both at the bedside (x-ray, ultrasound) and in the radiology department (MRI, CT and PET). Research is underway to image even deeper, such as the PROTEUS collaboration in the UK, which is investigating molecular imaging to detect bacteria deep in the lungs. Hand-held microscopes which can assess the microcirculation at the bedside may come into more widespread use in management of tissue perfusion (Uz et al. 2018).

The days of the daily routine chest x-ray for ICU patients on mechanical ventilation are (mostly) gone. A recent study found that negative sentiment by intensivists in the written notes in the electronic medical record was associated with increased use of imaging (Ghassemi et al. 2018). As with any procedure or treatment, imaging should be performed for the right patient at the right time. With the advent of point-of-care ultrasound, intensivists, with the right training and experience, can perform many US examinations at the bedside.

Anthony McLean outlines the evolving partnership between intensive care and radiology, with an explanation of advances in functional neuroimaging and cardiac imaging. Clear communication with the Imaging department about the need and potential benefit from an imaging procedure is essential, he emphasises.

Next, André Denault, David Canty, Milène Azzam, Alex Amir and William Beaubien-Souligny describe the current impact of the integration of whole-body ultrasound into clinical care including specific clinical conditions that are common in the ICU. Renske Wiersema, Geert Koster, Iwan C.C. van der Horst explain why whole body ultrasonography for hypotension or shock is needed in the ICU. They argue that a mono-organ focus in unravelling disease states results in less clear understanding of the pathophysiological state in critically ill patients.

Ultrasound can be used to diagnose and prevent ventilator-induced diaphragm dysfunction. Tom Schepens and

Ewan C. Goligher explain its use to assess the diaphragm structure and function and its potential to improve outcome by optimising ventilator management.

Collaboration with the radiology department is vital, and radiologist Marcelo Sánchez gives some tips next.

The secrets of the abdomen as revealed by POCUS are discussed by Jonathan Wilkinson, Adrian Wong, Angel Augusto Perez-Calatayud and Manu L.N.G. Malbrain, who describe the potential diagnoses and findings common to the critical care patient population.

Isabel González and David Santamarta report on secondary complications arising from insertion of a multimodal monitoring sensor using a dual lumen introducer kit in patients with subarachnoid haemorrhage, head injury or intracranial haemorrhage. CT scans showed bone fragments in some of the patients studied.

Information useful when considering purchase of ultrasound systems is provided by ECRI Institute - minimum requirements, preferred features, and other advantageous features for ultrasound systems for common exam types.

Mehdi Mezidi, Jean-Christophe Richard highlight the advances in capnography and the benefit of using it to monitor expired CO₂ in the ICU. They encourage intensivists to use and study this technology.

Around half the world's population is at risk from dengue and severe dengue. In our Matrix section, Sameer Jog, Payal Kalyani, Anuja Kulkarni explain how to diagnose and treat severe dengue infection. Andrea Cortegiani and Matteo Bassetti describe best practice in antifungal treatment, and advise on the clinical approach.

On Management, Andreas Xyrichis asks if inter-professional teamwork in the ICU is a panacea or an illusion, with reflections on research insights and suggestions for how to improve. ■

As always, if you would like to get in touch, please email JLVincent@icu-management.org.

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