ICU
MANAGEMENT & PRACTICE
INTENSIVE CARE - EMERGENCY MEDICINE - ANAESTHESIOLOGY
VOLUME 18 - ISSUE 3 - AUTUMN 2018

SPECIAL SUPPLEMENT
in collaboration with CSL Behring

Shock

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SHOCK

Shock is an emergency, and if it is not treated, it will mostly be fatal. Early intervention and admission to the ICU is essential. Our cover story considers several aspects of shock, including pathophysiology and multi-organ dysfunction syndrome, as well as source control, fluids, differentiation using point-of-care ultrasound and vasoactive medication.

Francesco Forfori, Greta Giuliano and Gabriella Licitra elucidate the pathophysiology of endotoxic shock and the role of endotoxaemia. They suggest that although there are conflicting results from clinical studies on techniques to remove endotoxin, selected subgroups of patients could potentially benefit from their use.

Fluids are a key treatment for shock. Antonio Messina, Massimiliano Greco and Maurizio Cecconi explain which fluids, when, how much and how often. They emphasise that fluids should be administered after testing preload dependency and with continuous evaluation of preload dependency/CO response, together with timely monitoring of clinical and metabolic signs of shock. Fluid stewardship is also important, and Manu Malbrain, Todd Rice and Monty Mythen introduce a conceptual framework for institutional programmes and guidelines to enhance fluid stewardship, which includes appropriate selection, dosing, duration, de-escalation, and monitoring of fluid therapy.

Vasoactive medication is a cornerstone in shock treatment. Jon Gutteling and Armand R.J. Girbes outline the physiology and pharmacology of vasoactive drugs and explain how to decide on drug dose, the haemodynamic values to pursue, and how much fluid to infuse, by introducing the concept of "enough" for different cardiovascular parameters.

In the critical first hour of sepsis treatment, source control receives little attention, according to Jan De Waele and Ignacio Martin-Loeches, but should be considered. They outline the challenges, methods and timing. Next, John Prowle expands on the concept of 'organ cross-talk', which is often used to explain multi-organ dysfunction syndrome.

Point-of-care ultrasound is a useful tool to differentiate and manage shock. Adrian Wong and Jonathan Wilkinson provide an overview of how the various POCUS modules could be integrated and utilised in the shocked patient.

Our Series on Gases continues with a review by Mervyn Maze and Timo Laitio of the latest research on xenon, which shows promise in treating acute CNS injury, including after cardiac arrest.

In European ICUs, up to 15% of patients may be aged 80 or over, and this age group is increasing in the general population. Hans Flaatten reviews the outcomes for these patients and outlines geriatric syndromes that intensivists should be aware of as well as specific ICU care. Achieving good sleep in the ICU depends on many factors. Michael Reade and David Liu review how to achieve better sleep, including pharmacological and non-pharmacological treatments. Non-pharmacological methods to improve sleep are almost always preferable first-line alternatives in critically ill patients, they emphasise.

To admit or not to admit cancer patients to the ICU has been a dilemma in the past. As cancer treatments become more effective, thus improving prognosis, it is likely that the number of cancer patients requiring admission to ICU will continue to increase. Isidro Prieto del Portillo, Ignacio Sáez de la Fuente and Pujol Varela apprise us of key elements for successful patient management: new anti-tumour therapies, admission criteria, improved support measures in ICUs and ICU trial stays.

There is a medical aphorism "Don't just stand there, do nothing!" Do we sometimes do too much or continue with interventions that no longer benefit? Fernando Zampieri argues that intensivists should acknowledge that they are prone to several cognitive biases and asks "What should we stop doing in the ICU?"

Next, Elisabeth Esteban, Anna Solé-Ribalta, Iolanda Jordan expound on the diagnosis and treatment of sepsis in children. Rapid response to sepsis is crucial. But does having pre-prepared components, such as a sepsis box, assist? NHS Wales trialled and evaluated this, as described by Chris Hancock and Andrew Hermon.

In the multidisciplinary ICU team, increasingly psychologists are employed to work with patients, families and staff. Anne Rocher describes an initiative to train clinicians to break bad news and communicate with families about limiting therapy and transitioning to comfort care.

ECMO is feasible outside large academic hospitals, writes Klaus Kogelmann. Before setting up this service, centres should consider which patients, which therapy and which adverse events could be handled.

Our Interview features Jannicke Mellin-Olsen, President of the World Federation of Societies of Anaesthesiologists. When 5 out of 7 billion people do not have access to safe, timely affordable anaesthesia and surgery, anaesthetists need to lead and create awareness, advocate, educate and set standards, she says, as well as sharing her thoughts on ketamine, gender equity and airway management. ■

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