Acute Pain Management

Pain Assessment in Critical Illness, G. Chanques

Sedation, Analgesia and Respiratory Drive in Mechanically Ventilated Adults, A. Tejpal, S. M. Pereira, M.C. Sklar

Pain Management Specificities in Critically Ill Patients With Obesity, A. Cuny, A. De Jong, G. Chanques


Pain Management in Paediatric Critical Care, S. Huerta-Calpe, R. Suárez, M. Balaguer, E. Esteban

Delirium: How Can We Protect Our Patients? Detection and Treatment Strategies, B. Lobo-Valbuena, R. Molina, L. L. de la Oliva Calvo, F. Gordo

Ten Overlooked Mistakes During Early Mobilisation in the Intensive Care Unit, A. Gómez-González, M. A. Martínez-Camacho, R. A. Jones-Baro et al.

Nutrition Monitoring and Patient Data Management Systems

An overview of nutritional targets and their impact on critically ill patients and the need to use a systematic approach to nutritional support for optimal patient outcomes.

Critically ill patients are often hypermetabolic and catabolic and are at a higher risk of underfeeding. Nutritional support for these patients can prevent energy deficits and improve outcomes (Villet et al. 2005). Underfeeding critically ill patients may cause harm to some patients who require a longer stay in the ICU (Wei et al. 2015).

The primary goals of nutrition support are to preserve or restore lead body mass, maintain immune function and avert metabolic complications. Ultimately, the aim of nutritional support is to reduce disease severity, reduce the risk of complications, decrease the length of stay in the ICU and improve patient outcomes (van Schijndel et al. 2009).

Protein loss, in particular, has been observed in all critically ill patients and is associated with increased morbidity and mortality. Muscle mass depletion is also associated with impaired function and poor clinical outcomes. Adequate protein delivery to critically ill patients is essential for optimal nutrition therapy (Hurt et al. 2017). Unfortunately, ICU patients worldwide fail to receive protein within the SCCM-ASPEN recommended range of 1.2–2.0 g/kg/d (McClave et al. 2016).

Caloric deficit in critically ill patients is associated with an increase in ventilator days, complications and increased length of stay (Villet et al. 2005). Protein deficit, in particular, is associated with increased mortality (Allingstrup et al. 2012; Hurt et al. 2017; Nicolo et al. 2016; Weisj et al. 2017). Evidence shows that greater nutritional intake during the first week in the ICU is associated with longer survival and faster physical recovery in patients requiring prolonged mechanical ventilation (Wei et al. 2015).

Findings from an international multicentre observational study that explored the relationship between nutritional support and clinical benefits showed that the energy and protein intake of critically ill patients was significantly lower than prescribed (Alberda et al. 2009). This could be due to multiple factors, including interruptions for surgery or routine procedures, other critical care procedures or a lack of tracking of nutritional intake.

There is a need to use a systematic approach to nutritional support for critically ill patients as this can improve patient outcomes. A patient’s nutritional needs should be individually determined, and a tailored nutritional therapy should be used to clearly identify the type of solution, delivery site and access devices, and administration rate and method (Boullata et al. 2017).

It is important to keep in mind that nutritional monitoring can be complex and may require manual calculations and tracking, which can be time-consuming and susceptible to human error (Berger et al. 2006). However, there are solutions that can help facilitate this process. Computerised patient data management systems can help standardise nutritional care and facilitate patient monitoring. There is evidence that such systems improve data visibility and are associated with a significant improvement in adequate nutrition delivery (Berger et al. 2006).

One such example is the Compat Ella® enteral feeding pump, which makes it easier to monitor nutrition. The device can be connected to a hospital Patient Data Management System (PDMS) to allow real-time tracking of nutrition and improve patient outcomes. PDMS connectivity allows automated data collection and control and helps reduce the workload associated with manual data entry and computation (Berger et al. 2006). This allows healthcare providers to spend more time with the patient and less time calculating nutritional requirements. PDMS connectivity also makes the feeding process visible (Berger et al. 2011; Strack Van Schijndel et al. 2007) and facilitates metabolic monitoring (Berger et al. 2006; Berger et al. 2011).

Key Points

- Critically ill patients are often hypermetabolic and catabolic and are at a higher risk of underfeeding.
- The primary goals of nutrition support are to preserve or restore lead body mass, maintain immune function and avert metabolic complications.
- Protein loss has been observed in all critically ill patients and is associated with increased morbidity and mortality.
- Caloric deficit in critically ill patients is associated with an increase in ventilator days, complications and increased length of stay.
- Computerised patient data management systems can help standardise nutritional care and are associated with a significant improvement in adequate nutrition delivery.
- The Compat Ella® enteral feeding pump makes it easier to monitor prescribed nutrition. It can be connected to a hospital Patient Data Management System (PDMS) to allow real-time tracking of nutrition.

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References

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