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Original article

Nutrition therapy for critically ill patients across the Asia–Pacific and Middle East regions: A consensus statement

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SUMMARY

Background & aims: Guidance on managing the nutritional requirements of critically ill patients in the intensive care unit (ICU) has been issued by several international bodies. While these guidelines are consulted in ICUs across the Asia–Pacific and Middle East regions, there is little guidance available that is tailored to the unique healthcare environments and demographics across these regions. Furthermore, the lack of consistent data from randomized controlled clinical trials, reliance on expert consensus, and differing recommendations in international guidelines necessitate further expert guidance on regional best practice when providing nutrition therapy for critically ill patients in ICUs in Asia–Pacific and the Middle East.

Methods: The Asia–Pacific and Middle East Working Group on Nutrition in the ICU has identified major areas of uncertainty in clinical practice for healthcare professionals providing nutrition therapy in Asia–Pacific and the Middle East and developed a series of consensus statements to guide nutrition therapy in the ICU in these regions.

Results: Accordingly, consensus statements have been provided on nutrition risk assessment and parenteral and enteral feeding strategies in the ICU, monitoring adequacy of, and tolerance to, nutrition in the ICU and institutional processes for nutrition therapy in the ICU. Furthermore, the Working Group has noted areas requiring additional research, including the most appropriate use of hypocaloric feeding in the ICU.

Conclusions: The objective of the Working Group in formulating these statements is to guide healthcare professionals in practicing appropriate clinical nutrition in the ICU, with a focus on improving quality of care, which will translate into improved patient outcomes.

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1. Introduction

International bodies, including the American Society for Parenteral and Enteral Nutrition (ASPEN), the European Society for Clinical Nutrition and Metabolism (ESPEN), Society of Critical Care Medicine (SCCM) and Canadian Critical Care Nutrition Group at the Clinical Evaluation Research Unit (CERU), have formulated guidelines on when and how nutrition therapy should be administered to critically ill patients in the intensive care unit (ICU) [1–4]. These guidelines have been developed following comprehensive reviews and analyses of available data at the time of drafting, but technical and ethical difficulties in performing randomized controlled trials of nutrition therapy in the ICU mean the evidence is relatively weak compared with other areas of medicine. Many of the latest recommendations in the 2016 ASPEN/SCCM Guidelines for the Provision and Assessment of Nutrition Support Therapy in the Adult Critically Ill Patient rely on 'expert consensus' [4]. These guidelines and expert consensus, are largely developed in the context of North American and European practices. However, critically ill patients in the ICU in the Asia–Pacific and Middle East regions may not be subject to the same principles of nutrition management due to differences in culture, nutrition prior to entering the ICU and overall healthcare accessibility [5].

A recent study in China indicated that nutrition therapy in the ICU is being guided by a heterogeneous mixture of international and local guidelines [6]. While >80% of respondents to a survey indicated that they rely on the guidelines issued by ASPEN, >40% refer to more than one set of guidelines, including guidelines issued by ESPEN and the Chinese Society of Intensive Care Medicine [6]. However, half of the survey respondents did not believe that the ASPEN guidelines represented "best practice" for critically ill patients in China [6]. Similar difficulties in applying multiple sets of international guidelines have been reported in India [7].

In India and Jordan, enteral nutrition (EN) is prescribed almost exclusively by physicians [7,8]. Only around 40% of Jordanian ICU nurses report having guidelines on administering EN, and while 70% of nurses reported having a nutritional team within their hospital, only 15–28% had a nutritional team within their ICU [8,9]. Qualitative evidence suggests that nurses in Jordan are developing evidence-based protocols for administering EN when formal guidelines are absent, and are aware of the potential benefits of working within a multidisciplinary nutritional support team in the ICU [5,9].

The Asia–Pacific and Middle East Working Group on Nutrition in the ICU was formed to identify, examine and address local (unit-level) challenges and barriers to optimal nutrition therapy in the ICU. The Working Group convened in April 2016 to develop tailored guidance for ICUs in the region by developing a series of consensus statements for managing nutrition therapy for critically ill adult patients in the ICU.

2. Consensus statement development methodology

To identify current gaps in knowledge and practice across the region, a survey was developed and disseminated to ICU healthcare professionals in the region. The questions and answers from the survey, supplemented with a literature review, provided the basis for the questions posed to the Working Group to aid the development of consensus statements.

Members of the Working Group were divided into four groups, with each group researching and developing preliminary consensus statements in response to a subset of questions. The full Working Group reviewed, discussed and edited the preliminary consensus statements on the basis of the currently available data and their individual practical experience as experts in the Asia–Pacific and Middle East region.

The final statements were created via a Delphi method. If >70% of the Working Group accepted the final statement in the form that it was voted on, then it was considered to have been adopted. If <70% agreement occurred, the reasons for disagreement were to be identified and addressed before a second ballot was undertaken on the revised final consensus statements. If consensus was not reached in the second ballot, it was to be accepted that it was not possible to reach consensus and the question would instead be highlighted as an area requiring additional research.

3. Consensus statements

The full series of questions, consensus statements and the rationale behind these statements is detailed below. For all statements, unanimous agreement amongst the Working Group was achieved in the first vote.

3.1. Nutritional risk assessment in the ICU

Question: Should all patients admitted to the ICU undergo nutritional risk assessment?

Answer: All patients admitted into ICU should have nutritional risk assessment, preferably within 24 h of admission, or as soon as feasible. Nutrition risk assessment should be performed using a validated tool, such as Nutrition Risk Screening (2002 version; NRS-2002) or modified Nutrition Risk in Critically ill (NUTRIC) score. Formal risk assessment should not delay initiation of nutritional therapy.

Supplementary statement: While compromised baseline nutritional status or high nutritional risk should mandate timely nutritional provision as a clinical priority, assessment as well-nourished or low nutritional risk should not prohibit the early initiation of nutrition therapy provision.

Rationale: Patients entering the ICU have a higher nutrition risk than patients undergoing general admission to hospital. Malnutrition is associated with poorer clinical outcomes, including post-operative complications and mortality, although it must be noted that the definition of 'malnutrition' is likely to differ between institutions and healthcare professionals [4,10,11]. Therefore, it is recommended that a patient's nutritional risk be assessed as soon as feasible, ideally at the time of admission to the ICU, and preferably within 24 h, to facilitate timely initiation of EN within a timeframe of 24–48 h [4]. Assessment within 24 h is particularly important given the higher rates of malnutrition in many Asian countries compared with other regions [12], and as such, this should be factored into early nutritional risk assessments of critically ill patients.

While results from the survey indicate that the majority of respondents (55%) use subjective global assessment (SGA) to determine if a patient is malnourished, and some studies support the use of SGA in predicting nutritional outcomes in the ICU [13,14], a tool previously validated for assessing nutritional risk in the ICU should be used to assess the risk of malnutrition. While NRS-2002 score can be used for screening, the modified NUTRIC score (http://www.criticalcarenutrition.com/resources/nutric-score) is considered to be the optimal method of assessing nutritional risk in the ICU because it considers both nutritional status and disease severity [4,15–17]. Furthermore, as interleukin (IL)-6 measurement is not required for the 'modified' NUTRIC score [17], these tests should be feasible in many ICUs in the Asia–Pacific and Middle East regions. NRS-2002 was also developed to predict the outcomes of nutritional intervention in critically ill patients, and experience in Turkey has indicated its utility in identifying malnourished patients

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