

NEWS RELEASE

Experts endorse value of early enteral nutrition to improve ICU patient outcomes and economic efficiency

- *Early enteral feeding, within 24hrs, shown to reduce mortality*
- *Focus required on patients at risk of prolonged ICU stay*
- *Overall, adherence to treatment guidelines is improving patient outcomes*
- *More evidence needed on how to feed complicated patients in the ICU*

Vevey, Switzerland – October 2011. At a Nestlé Nutrition Institute Satellite Symposium held on Monday 3 October 2011 at the European Society of Intensive Care Medicine (ESICM) in Berlin, Germany, experts explored the nutritional challenges in the management of patients with prolonged stay in the ICU. The effect of feeding ICU patients within the first 24hrs was shown to reduce mortality. In addition, the need to focus on patients who might be at risk of a prolonged stay in the ICU was suggested as a means of improving resource allocation. The speakers also brought into sharp focus the growing importance of targeted nutrition in critically ill patients admitted to the ICU and the need for more evidence to change clinical practice.

Early enteral nutrition (EN) key to reducing mortality

Dr Gordon Doig, Associate Professor in Intensive Care, University Hospital and North Shore Hospital, Sydney, Australia, focused on improving ICU feeding practices using change management theory. Dr Doig referred to a meta-analysis investigating the role of early enteral nutrition⁽¹⁾. This showed that survival rates may improve in critically ill patients who received early EN within 24 hours of injury or intensive care admission, however up to 40% of eligible patients may not receive early EN appropriately. Bringing to the fore the arguments for increased use of early EN, Dr Doig said, “We wanted to understand the effects associated with the use of early enteral nutrition and from every single meta-analysis that we reviewed, there is no evidence of patient harm from the use of early enteral nutrition. So, if we have good evidence of benefit and very little or no evidence of patient harm, perhaps this is something we should be doing in clinical practice”.

By following change management implementation practice in the Australia and New Zealand (ANZ) Nutrition Guidelines trial⁽²⁾, early enteral feeding rates increased from 46% of eligible patients to 65%. Commenting upon the significance of this study, Dr Doig added, “This shows us what can be achieved if we use a little bit of implementation science to get the evidence from the research publication to the bedside”. He went on to point out that Change Management encompasses a broad set of theories and structured processes aimed at helping to transition individuals, teams and organisations from a current state to a desired state and an efficient combination of two structured processes, namely audit and one-on-one academic detailing, can be used to improve the provision of early EN. So the target he recommends using for this metric is 65% of patients receiving early EN within 24 hours of ICU admission.

Focus upon allocation of resources in the ICU

Looking at the broader picture of resource allocation, Dr Hans Ulrich Rothen, Bern University Hospital (Inselspital), Switzerland, highlighted that patients with a prolonged stay in the ICU use a disproportionately high share of resources. He noted an example that 10% of ICU patients – those staying seven days or more – accounts for approximately 50% of the ICU resources⁽³⁾.

Commenting upon the importance of resource allocation he said, “If we focus on optimising the process of care of patients with a prolonged length of stay in the ICU this could help to reduce or to keep resource use under control”.

Adding to the debate he cited two examples, one focusing upon care protocols and the other one on ICU staffing. There is accumulating evidence that increasing staffing or having high intensive care physician staffing in the ICU helps to reduce length of stay and even could help to save costs⁽⁴⁾. Using the APACHE II scoring system (an estimate of ICU mortality based on a number of laboratory values and patient signs) with the sickest patients that were admitted at night-time in a high intensive staffing unit, it was possible to reduce costs of these patients by slightly more than \$10,000⁽⁵⁾.⁽⁶⁾ Although the additional cost of intensive staffing has to be taken into account, this still represents a significant saving.

Are guidelines useful in clinical practice?

During the symposium much debate centred on the implementation of National and International treatment guidelines and bundles in the ICU setting. Dr Jean-Daniel Chiche, Medical ICU, Dept of Host-Pathogen Interaction, Cochin Hospital, Paris, France, endorsed the overall value of guidelines, but reiterated the importance of a case-by-case approach. He said, “If you conduct a review on 24 guidelines you can find that the clinical applicability now is roughly defined in 92% of cases, but in only 75% of the cases we defined the clinical flexibility, which is basically the situation in which guidelines may not apply⁽⁷⁾. So, every patient should probably be considered as a suitable candidate for guidelines that explicitly express both clinical applicability and flexibility”.

He then explored the arguments for putting all these practice guidelines into bundles – a group of measures that could be systematically adopted in the ICU. The justification for these bundles is quite simple he said, “The whole team knows what to do and not only the boss, it's good because the boss is often not there. So this is an important argument, it reduces complexity, it may aid some decision-making and facilitate detection of errors or omissions, but at the same time the other side of the coin is that there are also arguments against bundles. Not everything in the bundles may be good, a classic example is that we do not understand why low molecular weight heparin is good for VAP prevention, I still don't know why. It may be potentially harmful and some of the elements of the bundle may also be unnecessarily expensive”.

Managing complex patients in the ICU

Dr Richard Beale, Kings Health Partners, London, UK, provided insights into the evolving issue of how much nutrition ICU patients should get and how that nutrition should be delivered. He explained, “There are two ways to look at this issue. One is a better understanding of the requirements, the dosages, the ingredients, the roots and the disease states. Because, just as in every other area, we realise that you can't meaningfully treat all patients as the same. It seems a little bit surprising to imagine that you can provide nutrition therapy as if everyone were the same”.

Drawing attention to current practice today, he noted that recommendations favour enteral nutrition for most patients and that regimens are typically graduated. This means that patients will have a nutritional deficit before targets are achieved. If the patient is in a complicated group then probably that deficit will continue to be there and may even get worse. It is well understood that patients receive less nutrition than is prescribed routinely. Typically, a prescription of 25 kilocalories per kilo per day for EN will result in around 15 kilocalories being ingested. It may be plausible that the initial nutritional deficit and its subsequent reinforcement may have a detrimental effect. In addition, long-staying ICU patients are at risk of cumulative energy and protein deficiency, which relate to worse clinical outcomes⁽⁸⁾.

Dr Beale also discussed the arguments for and against using parenteral feeding as an additional and/or alternative early nutrition intervention in the ICU. He said that more clinical trials are required to establish the optimum protocol. He concluded, "I would say that despite current dogma, key questions about how to feed complicated patients optimally in 2011 remain unanswered. The importance of feeding is recognised though, which is a wonderful thing because that wasn't always the case, and much effort is being expended in a number of different ways to try and get to the bottom of this".

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