

123 NutritionDay in European ICU's

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POIC (M Hiesmayr)
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MENN (JC Preiser)

Partner Organisations:

European Society for Clinical Nutrition and Metabolism (ESPEN)

Summary

The aim of this research project is to develop the tools and infrastructure to run a multi-centre cross-sectional audit in all national languages about nutritional care and outcome in European ICU's. After a 9 month development period the project should allow a pilot in 200 ICU's.

Background & Significance

Nutrition care is an integrated part of any ICU treatment. Nevertheless there are several aspects of nutritional care where little consensus exists and where practical implementation may vary between ICU's. Disagreement exist about the tolerable energy deficit, the route of administration, the actual energy

needs, the composition of artificial nutrition given and the role of specific nutrients such as glutamine, arginine, omega-3 fat or micronutrients.

An intensive care unit patient presents a number of nutritional challenges. The case mix of patients admitted may range from those admitted electively after major elective surgery to those admitted as emergencies after some surgical catastrophe, major trauma, sepsis or respiratory failure.

About 30% of all patients in hospital are undernourished¹. The majority of these patients are already undernourished when admitted to hospital and in many patients undernutrition develops further while in hospital². It has been shown that a relevant energy deficit develops usually in the first week in the ICU and is related to an increased complication rate³.

Enteral nutrition is the preferred way of feeding the critically ill patient and an important way of counteracting the catabolic state induced by severe illness. 2006 new guidelines on enteral nutrition were released by the ESPEN³ intended to give detailed evidence-based recommendations for the use in patients who have a complicated course during their ICU stay. Enteral nutrition should be given to all ICU patients who are not expected to be taking a full oral diet within three days. It should be begun during the first 24h using a standard high-protein formula. During the acute and initial phases of critical illness an exogenous energy supply in excess of 20-25kcal/kg BW/day should be avoided, whereas during recovery, the aim should be to provide values of 25-30 total kcal/kg BW/day. Supplementary parenteral nutrition remains a reserve tool and should be given only to those patients who do not reach their target nutrient intake on enteral nutrition alone. Although there are detailed guidelines on feeding patients, malnutrition is still an important issue concerning all hospitalised patients.

The target caloric intake depends on the specific situation and changes for example for patients with sepsis or trauma. It is very important to identify the patient's needs to determine the energy requirement. The use of stress factors may introduce substantial error into estimations of energy expenditure, since there is no definitive guide as to the stress factors that should be used in different clinical situations.^{4 56789}

Specific aims

The aim of this project is to increase knowledge and awareness about nutrition of ICU patients among the staff by evaluating nutrition care on a European level. Consecutively knowledge and best practice information will be shared with the participating institutions and associations. It is planned to organise annually meetings of special interest groups within the annual congress of the ESICM to assess the situation and discuss and agree on opportunities for change. The forum should be given by the sections already involved in the development of the project (POIC + HSRO + MENN). The results of the survey will be promoted to increase the clinical interest in nutrition. By drawing attention to health care services and approaches to patient

feeding, hospitals could adopt a health promoting approach to patient care complementing the current curative approach.

In order to be able to facilitate bench-marking of ICU's with a European standard and actual best practice, we intend to develop in the proposed project a multi-lingual data acquisition tool to determine actual nutrition care in an ICU's.

There are five necessary steps:

1. Definition of an basic ICU nutrition data set
2. Develop a prototype set of questionnaires to be used at the bedside
3. Use these questionnaires in a pilot trial to optimise workflow
4. Translation of the harmonised datasheets into all European languages
5. Develop a multilingual web-based data collection tool

Preliminary research & research synergies

The multinational project "NutritionDay in European hospitals" (www.nutritionday.org) is the basis for the new started "NutritionDay on the ICU". In January 2006 the "NutritionDay" project took place in 23 European countries including 15 000 patients. Data from the NutritionDay 2006 countries provides a clear picture of the current situation in relation to malnutrition, nutrition practice and therefore to patient's safety.

The NutritionDay was developed by a group of ESPEN members at the Medical University of Vienna, where a small team build up a network, which now unites some hundred European hospitals and different professional groups involved in nutritional care. Many professionals involved in the actual NutritionDay project for wards are directly or indirectly involved in nutritional care in The ICU. Our intention is to use this existing network of competence and experience for the development of a specific NutritionDay for the ICU.

Research design & methods

The survey will have 4 parts:

- Part I: structure and organisation of the ICU (one page)
- Part II: patient's present status and medical history (one page)
- Part III: patient's nutritional care (precisely on NutritionDay and with less precision for the preceding days). (one page)
- Part IV: patient's outcome 30 day + hospital + major complications (one line /patient)

The questionnaires will be available for each participating country in the proper language. The questionnaires will be freely accessible for a web-based download. After "NutritionDay on the ICU" units can either send us a paper version of the data or transfer the data via internet. As before in the "NutritionDay 2006" project there will be a database with possibility to get

access via internet. Communication will be web based. All information and necessary training for participation will be done electronically.

It is planned to choose a total of three days per year for assessing the present state within the participating countries. The date for this day will be decided by consent of all participants and will be the same date for all. In contrast to the preliminary study of "NutritionDay 2006" we want to repeat the survey on a second and a third day in the following 2 weeks. This is a question of data safety because populations on ICUs are rather small and a – one - day-survey may not be representative for a unit. Thus the repetition of the survey improves the data internal validity. The typical patient sample will be 20-30 patients. This workload appears to be feasible even in busy ICU's if the workflow has been well designed and adequate preparation was possible.

Ethical aspects:

The project "NutritionDay on the ICU" has two ethical aspects. Firstly it is an ethical obligation to address malnutrition of hospitalised patients as a safety issue. Secondly the anonymity of the participating unit and all assessed patients will always be protected.

Anticipated results / deliverables

First there will be a harmonised set of data collection questionnaires in all European languages that can be used for regular benchmarking of ICU's (e.g. annual intervals). ICU will be able to communicate and compare performance at a European level.

Second there will be a multi-lingual electronic data collection tool that will facilitate the data transfer into a European database on ICU nutrition Care.

Third the knowledge transfer between the NutritionDay for wards and ICU's will be a steps towards a continuous nutrition care plan throughout hospitalisation.

References

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