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Nutritional Adherence towards International Guideline in Intensive Care Unit (ICU) setting and its Benefit on Clinical Outcomes: A Restrospective Observational Study

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Introduction

Nutrition Support is essential in improving clinical outcomes of critically ill patients and reducing their mortality rate. According to American Society for Parenteral and Enteral Nutrition (ASPEN), the actual calorie delivery of >60% of enteral nutrition (EN) goal within the first week of hospitalization is associated with fewer infectious complications in critically ill adult patients. In 2014, a nutrition audit was carried out at TKOH to examine current practice in ICU setting.

Objectives

(1) To evaluate current practice regarding ICU patients' energy intake achievement during their ICU stay; (2) To compare the differences in energy intake achievement with their clinical outcomes; (3) To facilitate an evidence-based protocol development in ICU nutrition support.

Methodology

Patients were recruited if (1) they were admitted to ICU between 1 July and 30 Oct 2014 and (2) the length of stay was greater than or equal to 7 days. Two groups of patients were identified. Group 1: achieved 50% or more of goal calories within the first week of ICU stay; Group 2: unachieved 50% goal calories. Body Mass Index (BMI) levels were categorized as <18.5, 18.5-22.9, 23-24.9, 25-29.9 and 30 or above. Differences and their correlations in these characteristics across BMI levels were evaluated by chi-squared test and one-way ANOVA.

Result

37 patients were recruited during the above-mentioned period. 31 patients were under nutritional support [31% oral feeding; 51% nasogastric feeding; 8% parenteral feeding]; 17 patients (54%) received 50% or more of goal calorie nutrition by the end of first week of ICU stay. Statistical analysis showed a significant reduction in length

of stay (LOS) in those who achieved 50% or more of goal calories with BMI range 18.5-22.9 [mean LOS in the achieved group was 29.6 days; in the unachieved group was 72.8 days. $p = 0.021$]. Conclusion: Sufficient calorie provision did indeed relate to better clinical outcomes in critically ill patients. However, earlier parenteral nutrition should be considered when patients' nutritional requirement could not be achieved with enteral nutrition alone. Early dietetic referral should be initiated for optimizing nutrition support.