



Service Priorities and Programmes Electronic Presentations

Convention ID: 964

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Implementing an Enteral Nutrition Protocol to Improve Nutritional Care for the Critically Ill

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Keywords:

enteral nutrition

feeding protocol

nutritional support

intensive care unit

Introduction

Enteral nutrition (EN) is of pivotal importance in ensuring appropriate nutrition for critically ill patients. Protocol-driven administration of EN can reduce practice variation and optimize nutrition delivery to critically ill patients in intensive care setting.

Objectives

To evaluate the impact of EN protocol in a critically ill population in the Adult Intensive Care Unit (AICU) of Queen Mary Hospital in Hong Kong.

Methodology

From Jan to Dec 2015, a protocol for EN administration was developed and implemented using evidence-based practice model and multidisciplinary approach. Management of gastric residual volume (GRV), use of prokinetic agents and positioning of patients were standardized to facilitate critically ill patients' tolerance to enteral feeding. Interruptions to EN, daily calorie intake, calorie intake target achievement, pattern of dietetic assessment and adverse events were measured. Comparisons were made with matched historical controls before protocol implementation. Protocol compliance and implementation logistics were evaluated. Student's t-test and chi-square test were used to analyze numerical and categorical data, respectively.

Result

A total of 160 patients in the AICU were recruited. No between-group difference was found between the pre-implementation and post-implementation cohort regarding mean length of stay (days) in intensive care unit (9.2 ± 8.7 versus 10.8 ± 11.6 , $p=0.37$) and ICU mortality (20.2% versus 17.9%, $p=0.72$). Interruption to EN related to GRV management was lower in the post-implementation cohort (8.9% versus 23.1%, $p=0.027$). Calorie intake target achievement was higher in the post-implementation cohort (79.6% versus 51.3%, $p=0.0037$). No significant differences were identified in

daily calorie intake (kcal/kg/day) and incidence of adverse events (18.3 ± 7.8 versus 19.7 ± 8.2 , $p=0.31$; 10.6% versus 10.7%, $p=0.98$). The results confirmed that Implementation of EN protocol in intensive care setting can reduce practice variation and unnecessary interruption to EN delivery as well as improve calorie intake target achievement for the critically ill patients without causing significant adverse events.