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

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Introduction

Enteral nutrition (EN) is of pivotal importance in maintaining wellbeing of 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 (ICU) of a local public hospital in Hong Kong.

Methodology

A multidisciplinary protocol for EN administration was developed and implemented using evidence-based practice model in Jan 2015. The protocol was refined in July 2017, which aimed to standardize practice of ICU doctors, nurses and dietitians to promote early EN initiation, minimization of interruption to EN and to improve nutrition intake of critically ill patients. Primary outcomes included frequency of interruptions to EN, EN initiation time and calorie intake target achievement. Process outcomes including pattern of dietetic assessment and adverse events were also measured. Comparisons were made with matched historical controls before protocol implementation. Student's t-test and chi-square test were used to analyze numerical and categorical data, respectively. Protocol compliance and implementation logistics were evaluated.

Result

A total of 765 patients were recruited. No between-group difference was found between the pre-implementation and post-implementation cohorts regarding length of stay (days) in ICU (8.98.3 versus 8.29.5, $p=0.55$) and ICU mortality (20.2% versus 15.9%, $p=0.36$). Interruptions to EN related to management of gastric residual volume

was lower in the post-implementation cohort (12.9% versus 23.1%, RR=0.56 [95% CI: 0.33, 0.95], p=0.03). Calorie intake target achievement was higher in the post-implementation cohort (65.8% versus 51.3%, RR=1.28 [95% CI: 1.00, 1.64], p=0.03). No significant differences were identified in early EN initiation (