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An evaluation of the goal directed feeding protocol on improvement in caloric intake of patient in ICU

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Introduction

Evidence suggested enteral feeding protocol can improve the delivery of nutrition support to ICU patient. Provision of optimal nutrition relies on anthropometric measurement as nutrition requirement is estimated based on body weight. Since it is often impossible to take measurement in ICU patients, a reliable estimation method is warranted. An ICU enteral feeding protocol was developed and implemented, using fibula length measurement to estimate patient weight and daily calories requirement.

Objectives

1.To assess the inter-rater reliability of fibula length measurement. 2.To evaluate the average daily caloric intake after the implementation of feeding protocol 3.To assess the actual calorie intake (percentage of estimated target) after the use of the feeding protocol

Methodology

Only adult mechanical ventilated patients were included. Exclusion criteria included 1. Patients were malnourished or morbid obese 2.Patients undergone gastrointestinal operation 3. Patients were using jejunostomy for feeding 4. Patients admitted to ICU because of pancreatitis Daily caloric requirement was targeted as 25kcal/kg. Using a local validated equation, fibula length was measured to estimate body height, and further converted to ideal body weight by BMI equation (using chosen BMI 20.7). Data were collected pre and post protocol implementation during the period of Jun to Dec 2011 and May to Dec 2012. Reliability of fibula length measurement was analyzed by intra-class correlation using SPSS version 18

Result

107 patients were involved (n=43 pre and n=64 post protocol).Their feeding began a median of 2 days (IQR, 2 to 3 days) after ICU admission. Reliability of fibula length

measurement was good (ICC, 0.765) and the difference in measurement range from -3 to 5cm. Higher median daily calorie intake was noticed after using the target orientated protocol (1178.5kcal; IQR 1054-1315 vs 1008kcal, IQR 846-1130), Median actual calorie intake (percentage of the estimated target) was also improved when compared with period before using protocol (86%; IQR 73-97 vs 74%; IQR 61-81) Using a goal directed feeding protocol; with fibula length measurement to project the daily caloric requirement can effectively improve the nutrition support in ICU patient.