Outcomes of Enteral Nutrition Supplementation of Severe Head Injury Adult Patients in Intensive Care Unit at Kenyatta National Hospital, Kenya

Mureithi, Hellen Wanjiku

Abstract:

Nutrition support in intensive care units (ICUs) is accepted as an integral part of patient care; however, feeding remains a low priority compared with other ICU treatments. Approximately 52,000 patients die of Traumatic Brain Injury each year in the United States and approximately 85% of the deaths occur within the first 2 weeks. Closed head injury is one of the most highly catabolic illnesses in ICU patients. Nutritional support for acutely head-injured patients is sometimes delayed until gastrointestinal function has returned to normal in the post injury period and these patients frequently have longer stays in the ICU, and causes of this beyond the severity of the brain injury include the presence of infectious complications, sepsis and acute malnutrition. A total of 21 Severe Head Injury (SHI) adult patients with a Glascow Coma Scale (GCS) score of 5-8, admitted at Critical Care Unit, Kenyatta National Hospital between January-March 2012, were included in the prospective quasi experimental, one group (pre-post test) study design. The study aimed at establishing the outcomes of Enteral Nutrition supplementation of SHI adult ICU patients. The patients were fed with two litres of a supplement which was high in fibre and mono unsaturated fatty acids (MUFA) and contained no glucose to ensure high glycemic control and reduced glucose levels among the patients (exposures). The day of initiation of feed, ICU Length of Stay, duration of Enteral Nutrition supplementation, the GCS scores, albumin, haemoglobin and random blood sugar levels of the patients on admission and at the end of the study were determined (outcomes). Clinical characteristics of the patients on admission and at the end of the study were determined. T-test was used to test the significant differences between the sample means at the beginning and at the end of the study. Correlation was used to test the relationship between the variables. The mean ICU Length of Stay (LOS) from this study was 10.29±3.02 days with a SD of 7.05 days, SEM 1.53862. This was compared to 12 days which was the mean ICU LOS of SHI adult patients admitted in year 2006 when exclusive EN supplementation of ICU patients had not been initiated. The mean difference in the ICU LOS was -1.71429 at 95% CI. There was a reduction in the ICU LOS although it was not statistically significant (p=0.278). There was a significant improvement in the GCS scores (p= 0.000). The albumin levels decreased significantly at the end of the study (p=0.002). The haemoglobin levels of the patients decreased significantly (p=0.532). No significant improvement was found in the RBS levels (p=0.846). A P value of < 0.05 was used as the criterion for statistical significance. The study therefore recommends the introduction of a high calorie Enteral Nutrition supplement with a 20% protein content which is tailored to meet the protein catabolism and hypermetabolic energy requirements of SHI adult ICU patients so as to further improve outcomes.