Impact of early nutrition and feeding route on clinical outcomes of neurocritically ill patients

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Objective

The primary goal of this paper is to investigate the association of early nutrition with clinical outcomes in neurocritically ill patients admitted to the neurosurgical intensive care unit (ICU). By doing so, the authors attempt to determine the optimal feeding timing, route, and formula, with a specific focus on the effects of early enteral nutrition (EEN) and early parenteral nutrition (EPN) This paper assess if early nutrition per se was linked to poor prognosis when controlling for severity and other factors via propensity score matching (PSM) .

Reason

Early nutrition is often underestimated and considered a lower priority than other medical problems in neurocritically ill patients, despite its potential to improve neurological prognosis and clinical outcomes. This paper emphasizes the importance of early nutrition may help improve neurological conditions.

Methodology & Instrument

Data was collected from a single-center observational study conducted at the Samsung Medical Center, Seoul, Republic of Korea. Inclusion criteria were patients hospitalized in the neurosurgical ICU for more than 5 days due to neurocritical illness or neurosurgical postoperative management. Data was collected from January 2013 to December 2019.

Findings

In the table below there is a summary of the outcome variable, whether or not the patients got an infection after early nutrition. The covariates are listed as X0, x2, x3 as Female(yes or no), having other infections(yes or no), and being over the age of 25(yes or no).

Summary Statistics

Variable	Controls (N_c=969) Mean	S.d.	Treated (N_t=384) Mean	S.d.	Raw-diff
Y	0.085	0.278	0.083	0.277	-0.001

Variable	Controls (N_c=969) Mean	S.d.	Treated (N_t=384) Mean	S.d.	Nor-diff
X0	0.472	0.499	0.492	0.501	0.041
X1	0.934	0.248	0.969	0.174	0.162
X2	0.813	0.390	0.852	0.356	0.103

Data

A total of 12,743 patients were admitted to the neurosurgical ICU during the study period, with 1,353 patients included in the final analysis. Early nutrition was administered to 384 (28.4%) patients: 152 (11.2%) received EEN, and 232 (17.1%) received EPN.

Results

In the overall study population, the rate of in-hospital mortality was higher in patients with late nutrition compared to those with early nutrition. No significant differences in in-hospital mortality and infectious complications between the late and early nutrition groups in the PSM and PSOW adjusted population In this image, the overlap between the two distributions suggests that the matching process was relatively successful, meaning that the treatment and control groups are comparable in terms of the covariates included in the propensity score model. This allows for a more accurate estimation of the effect of early nutrition on the clinical outcomes being studied.