Hospital Malnutrition and its Impact on 30-day Mortality in Hospitalized General Medicine Patients in a Tertiary Hospital in South India

Authors : Vineet Agrawal, Deepanjali S., Medha R., Subitha L.

Abstract : Background. Hospital malnutrition is a highly prevalent issue and is known to increase the morbidity, mortality, length of hospital stay, and cost of care. In India, studies on hospital malnutrition have been restricted to ICU, post-surgical, and cancer patients. We designed this study to assess the impact of hospital malnutrition on 30-day post-discharge and in-hospital mortality in patients admitted in the general medicine department, irrespective of diagnosis. Methodology. All patients aged above 18 years admitted in the medicine wards, excluding medico-legal cases, were enrolled in the study. Nutritional assessment was done within 72 h of admission, using Subjective Global Assessment (SGA), which classifies patients into three categories: Severely malnourished, Mildly/moderately malnourished, and Normal/well-nourished. Anthropometric measurements like Body Mass Index (BMI), Triceps skin-fold thickness (TSF), and Mid-upper arm circumference (MUAC) were also performed. Patients were followed-up during hospital stay and 30 days after discharge through telephonic interview, and their final diagnosis, comorbidities, and cause of death were noted. Multivariate logistic regression and cox regression model were used to determine if the nutritional status at admission independently impacted mortality at one month. Results. The prevalence of malnourishment by SGA in our study was 67.3% among 395 hospitalized patients, of which 155 patients (39.2%) were moderately malnourished, and 111 (28.1%) were severely malnourished. Of 395 patients, 61 patients (15.4%) expired, of which 30 died in the hospital, and 31 died within 1 month of discharge from hospital. On univariate analysis, malnourished patients had significantly higher morality (24.3% in 111 Cat C patients) than well-nourished patients (10.1% in 129 Cat A patients), with OR 9.17, p-value 0.007. On multivariate logistic regression, age and higher Charlson Comorbidity Index (CCI) were independently associated with mortality. Higher CCI indicates higher burden of comorbidities on admission, and the CCI in the expired patient group (mean=4.38) was significantly higher than that of the alive cohort (mean=2.85). Though malnutrition significantly contributed to higher mortality on univariate analysis, it was not an independent predictor of outcome on multivariate logistic regression. Length of hospitalisation was also longer in the malnourished group (mean= 9.4 d) compared to the well-nourished group (mean= 8.03 d) with a trend towards significance (p=0.061). None of the anthropometric measurements like BMI, MUAC, or TSF showed any association with mortality or length of hospitalisation. Inference. The results of our study highlight the issue of hospital malnutrition in medicine wards and reiterate that malnutrition contributes significantly to patient outcomes. We found that SGA performs better than anthropometric measurements in assessing under-nutrition. We are of the opinion that the heterogeneity of the study population by diagnosis was probably the primary reason why malnutrition by SGA was not found to be an independent risk factor for mortality. Strategies to identify high-risk patients at admission and treat malnutrition in the hospital and post-discharge are needed.

Keywords : hospitalization outcome, length of hospital stay, mortality, malnutrition, subjective global assessment (SGA)