Original Research Article

Evaluation of nutrition status in critically ill patients

Rubal Singhal[1],Manu Seth[1*], Rajeev Kumar Das[2]

[1]Assistant Professor, Department of Anaesthesiology, TSM Medical College and Hospital Lucknow, U.P., India

[2]Associate Professor, Department of Anaesthesiology, TSM Medical College and Hospital Lucknow, U.P., India

Received: 08-11-2020 / Revised: 18-12-2020 / Accepted: 26-12-2020

Abstract

Background: The present study was conducted to assess nutrition status in critically ill patients.**Materials& Methods:**54 critically ill patients of both gender admitted to ICU was recorded. The nutritional status of all patients was evaluated by using SGA rating at admission. The date of initiation of enteral feeding with reasons for delay in initiation was noted. **Results:** APACHE II 0-9 was seen in 4, 10-19 in 22, 20-29 in 26 and >30 in 2 patients. Diagnosis was cardiovascular in 23, neurological in 14, hepatorenal in 10 and sepsis in 7 cases. The reasons for not initiating enteral feeds was haemodynamic instability in 27, started on oral feeds in 16, GI bleed in 6 and Drowsy/On NIBiPAP in 5 patients. The difference was significant (P< 0.05).**Conclusion:**Malnutrition is commonly present at admission among medical ICU patients.

Keywords: Nutrition, Critically ill patients, enteral feeds

Introduction

Malnutrition is a broad term which has been used to describe any imbalance in nutrition. It is commonly encountered in critically ill patients. Reported rates vary between about 39% and 50%.Nutrient deficiency has been correlated with a prolonged length of ICU/hospital stay and is strongly associated with increased morbidity and mortality among critically ill patients[1].Medical nutrition therapy may lessen morbidity, mortality, and length of ICU stay. Therefore, a timely assessment of nutritional status in critically ill patients is important to prevent or minimize nutritional crises and to monitor nutritional therapy. In addition, early nutritional screening is a key factor in appropriate nutritional intervention that may reduce the length of ventilator dependency, ICU/hospital stay, and mortality[2].Two tools have been described to assess malnutrition in the intensive care unit (ICU): subjective global assessment (SGA) and Mini-Nutritional Assessment (for the geriatric population) [3]. In addition, the Nutrition Risk in Critically ill score, helps in identifying patients who will benefit from aggressive nutrition by linking starvation, inflammation and outcomes. SGA is a screening tooldoes not need any laboratory data. SGA has the most diagnostic value for critically ill patientsamong the different nutrition screening tools[4]The present study was conducted to assess nutrition status in critically ill patients.

**Correspondence*

Dr. Manu Seth

Assistant Professor, Department of Anaesthesiology, TSM Medical College and Hospital Lucknow, U.P., India

E-mail: drsethmanu@gmail.com

Materials & methods

The present study comprised of 54 critically ill patients of both gender admitted to ICU. The consent for the study was obtained before starting it. Data such as name, age, gender etc. was recorded. The nutritional status of all patients was evaluated by using SGA rating at admission. Laboratory parameters such as haemoglobin, total lymphocyte count and serum albumin were noted. The date of initiation of enteral feeding with reasons for delay in initiation was noted. In patients who were initiated on enteral feeds, the volume of feeds given as compared to the prescribed daily feed volume was noted. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant (P< 0.05).

Results

Table 1:Distribution of patients

Total- 54		
Gender	**Males**	**Females**
Number	28	26

Table 1 shows that out of 54 patients, males were 28 and females were 26.

Table 2:Overall profile of patients

Variables	Number	P value
APACHE II		
0-9	4	0.01
10-19	22	
20-29	26	
>30	2	
Diagnosis		
Cardiovascular	23	0.05
Neurological	14	
Hepatorenal	10	
Sepsis	7	

Table 2 shows that APACHE II 0-9 was seen in 4, 10-19 in 22, 20-29 in 26 and >30 in 2 patients. Diagnosis was cardiovascular in 23, neurological in 14, hepatorenal in 10 and sepsis in 7 cases. The difference was significant (P< 0.05).

Table 3:Reasons for not initiating enteral feeds in patients

Variables	Number	P value
Haemodynamicinstability	27	0.02
Started onoral feeds	16	
GI bleed	6	
Drowsy/On NIBiPAP	5	

Table 3, Fig 1 shows that reasons for not initiating enteral feeds was haemodynamic instability in 27, started on oral feeds in 16, GI bleed in 6 and Drowsy/On NIBiPAP in 5 patients. The difference was significant (P< 0.05).

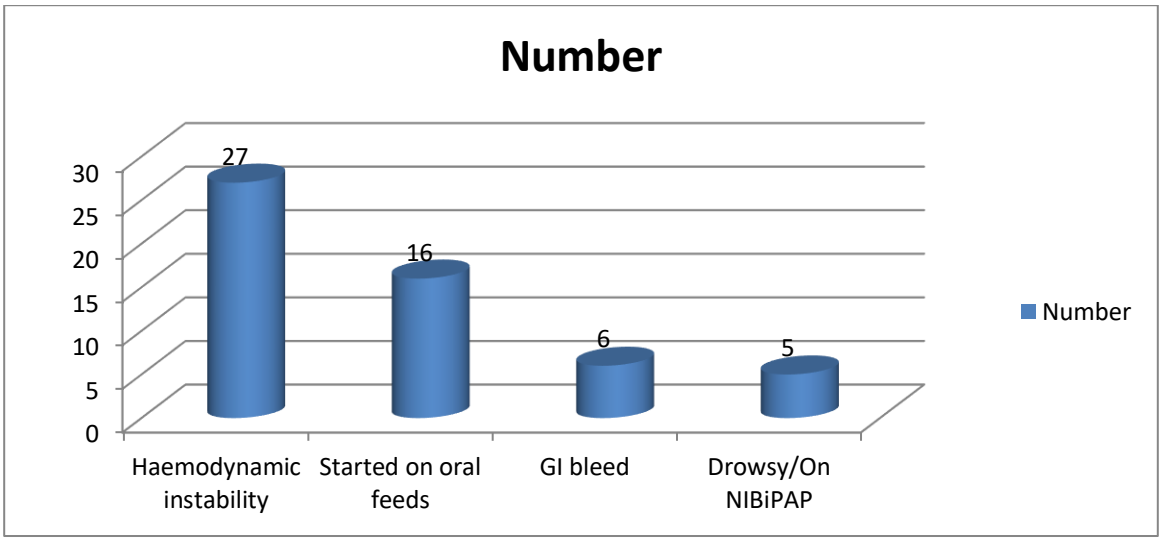

Fig 1:Reasons for not initiating enteral feeds in patients

Discussion

Nutrient deficiency has been correlated with a prolonged length of ICU/hospital stay and is strongly associated with increased morbidity and mortality among critically ill patients. Medical nutrition therapy may lessen morbidity, mortality, and length of ICU stay[5]. Therefore, a timely assessment of nutritional status in critically ill patients is important to prevent or minimize nutritional crises and to monitor nutritional therapy. In addition, early nutritional screening is a key factor in appropriate nutritional intervention that may reduce the length of ventilator dependency, ICU/ hospital stay, and mortality[6].The present study was conducted to assess nutrition status in critically ill patients.In present study, out of 54 patients, males were 28 and females were 26. Verghese et al[7] found that out of the 200 patients in our study, 45%, 48.5% and 9% of patients had mild, moderate and severe malnutrition, respectively, corresponding to subjective global assessment (SGA) rating A,B and C, respectively. The most common reasons for non-attainment of daily feeding goals were delayed feed procurement (17.57%), and feeds being held for procedures (16.36%). The overall mean length of ICU stay was 8.63 ± 7.26 days, and the ICU mortality rate was 47.5% (95/200). Patients with SGA rating B and C at admission had higher

risk of mortality in the ICU, with an adjusted odds ratio of 3.54 (95% confidence interval [CI]- 1.71–7.33, P = 0.001) and 11.11 (95% CI-2.26–54.66, P = 0.003), respectively.We found that APACHE II 0-9 was seen in 4, 10-19 in 22, 20-29 in 26 and >30 in 2 patients. Diagnosis was cardiovascular in 23, neurological in 14, hepatorenal in 10 and sepsis in 7 cases.Nematy et al[8] reported no significant changes in their patients' fat and lean mass during ICU stay. BIA-derived body cell mass also decreased in the ventilatordependent patients compared to an increment in fat mass in a study performed by Faisy et al[9] Although BIA is not considered the best method to measure the body composition in patients in the ICU because of their water and electrolyte imbalances, Robert et al recommended it as an easy adjunctive method to oversee the nutritional status of patients.

Sungurtekin et al[10]assessed whether subjective global assessment (SGA) is useful in identifying malnutrition and outcomes in the intensive care unit (ICU) in 124 consenting patients. Patients were evaluated at admission using clinical data, SGA, height, weight, triceps skinfold thickness (TSF), mid-arm circumference (MAC), Acute Physiology and Chronic Health Evaluation (APACHE II), and Simplified Acute Physiologic Score (SAPS). Patients were classified as well nourished, moderately malnourished, or severely malnourished with SGA. According to SGA, 62% (n = 77) of the patients were classified as well nourished, 26% (n = 33) as moderately malnourished, and 11% (n = 14) as severely malnourished. Body weight, body mass index (BMI), MAC, TSF, and mid-arm muscle circumference (MAMC) were lower, whereas APACHE II and SAPS II scores and mortality were higher in the malnourished groups compared with the well-nourished group. The SGA rating correlated significantly with age, body weight, percentage of weight loss, serum albumin level, APACHE II and SAPS II scores, and mortality. Anthropometrics data were correlated with SGA. Mortality rate was correlated with high APACHE II score, SAPS II score, days in the ICU and low BMI, MAMC, and serum albumin level.

Conclusion

Authors found that malnutrition is commonly present at admission among medical ICU patients.

Conflict of Interest: Nil
Source of support:Nil

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