Screening Nutritional Status of Hospitalized Patients With Nutritional Risk Screening 2002 and Subjective Global Assessment Tools

Document Date: December 1, 2016

Materials and methods

Participants

The study was conducted with 134 adult patients (male/female: 59/75) who were hospitalized in the clinics (hematology, neurology, gastroenterology, nephrology, endocrine, pulmonary disease and cardiology) of Malatya Training and Research Hospital between January 1 and August 30, 2016.

The exclussion criteria included: patients were (i) < 18 years old, (ii) hospitalized due to surgical operation, (iii) pregnant women, (iv) breastfeeding women, (v) bed-dependent, (vi) suffered an advanced disease that required palliative care.

The study was approved by the Ethics Committee of [removed for blind peer review]. A written informed consent was obtained from the patients.

Study design

In the cross-sectional study demographic data (age, gender), BMI, cause of hospitalization and hospital LOS were recorded. For the nutritional assessment all patients were screened with NRS 2002 and SGA within the first days of admission to the patients. And also the edema and the acid were evaluated by the physician. The primary predictors of interest in our study were the NRS 2002 and SGA results of paients.

In the begining 168 patients were included to study but, 34 patients did not complete scanning procces by the reason of missing data and excluded from the study. Finally 134 patients completed the nutritional scanning (Fig.1).

BMI classification

BMI as an objective measurement, refers to the weight for height, which is valid for both genders and all age groups. BMI classification according to WHO refers to, <16,5 kg/m² severe malnourished, 18.5 kg/m² malnourished, 18.5-24.9 kg/m² normal, 25-29.9 kg/m² overweight, ≥30 kg/m² obese in adults [9]. ESPEN recognises malnutrition as, patient has (i) weight loss > % 10 – 15 of body weight in last 6 months; (ii) BMI < 18.5 kg/m²; (iii) level B and C (mild-to-moderate and severe malnourished) accordig to SGA or score ≥3 according to NRS 2002; (iv) serum albumin < 30 g/L (out of hepatic and renal disfunction) [10].

Nutritional status

Nutritional status of all patients were screened both NRS 2002 and SGA within the first days of admission to the patients.

The patients were classified as being nutritionally risk (NRS+): total score ≥ 3 or nutritionally risk-free (NRS-): total score < 3 according to NRS 2002 results.

The SGA screening normally provides three alternative categories for nutritional classification: well nourished (A); mild-to-moderately malnourished (B); or severely malnourished (C).

In order to facilitate the analysis of the influence of the nutritional status on the outcomes, to allow comparison with the NRS 2002 and SGA, patients were grouped as being either non-malnourished (A) or malnourished (B or C; included mild-to-moderately malnourished and severely malnourished according to SGA results). And according to the results of two screening tools, patients were grouped as being malnourished [included patients on (NRS+) or SGA (B or C)] and non-malnourished [included patients on (NRS-) or SGA (A)].

Statistics

The sample size was calculated as minimum 88 patients based on the primary outcome variable: the detection of a 5% difference between the nutritional status and NRS 2002 and SGA tools and statistical power of 95%. Continuous variables were expressed as the mean and standard deviation. Statistical differences between groups were assessed using Chi-Square and Fisher exact tests for categorical variables, while the Student's t-test was used for continuous variables. In order to analyze which variables affected the prevalence of malnutrition, a logistic regression analysis was performed, in which malnutrition according to the NRS 2002 and SGA was considered the dependent variable seperately. The level of significance used was 0.05. Statistical analysiswas carried out with IBM SPSS Statistics 22.0.