Comparison of subjective global assessment with objective nutrition parameters and outcome variables

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Traditionally, dietitians have relied on objective nutrition parameters, such as anthropometric and biochemical parameters, to assess nutritional status. The usefulness of these parameters has been questioned in view of the many non-nutritional factors affecting the results. Hence, subjective assessment of nutritional status has been investigated. Subjective global assessment (SGA) assesses nutritional status based on the features of a history (weight change, dietary intake change, gastrointestinal symptoms that have persisted for greater than two weeks and changes in functional capacity) and physical examination (loss of subcutaneous fat, muscle wasting, ankle oedema, sacral oedema and ascites) (1). Features are combined subjectively into an overall or global assessment, where patients are rated as being well nourished, moderately (or suspected of being) malnourished, or severely malnourished. The aim of this study was to compare the subjective global assessment with objective nutrition parameters and outcome variables.

Four hundred and eighteen patients admitted to The Wesley Hospital (excluding paediatric, psychiatric and maternity patients) were included in the study. SGA was performed in addition to anthropometric measurements (weight, weight loss, body mass index, triceps skinfold thickness, midarm muscle circumference and area), biochemical parameters (albumin, prealbumin, c-reactive protein, total protein, total lymphocyte count, haemoglobin and haematocrit) and functional parameters (hand grip strength). All measurements were obtained within two days of admission. SGA was performed by the same observer without prior knowledge of the objective parameters. Outcome variables (length of stay, number of complications and death) were obtained retrospectively from the medical record. Nutrition parameters and outcome variables were analysed using logistic regression analysis, correlation analysis, analysis of variance, students t test and chi-square test.

According to subjective global assessment, 86% of patients were well nourished, 6% were moderately malnourished and 9% were severely malnourished at hospital admission. There was a reduction in the mean values of objective nutrition parameters with the progressive worsening of nutritional status as determined by SGA. The results of logistic regression analysis comparing SGA with objective parameters showed a significant correlation with all parameters except total lymphocyte count and total protein ($P<0.05$). The length of stay of patients who were severely malnourished (12.1 ± 12.1 days) was significantly longer ($F=11.2$, $P<0.001$) than patients who were moderately malnourished (7.9 ± 10.8 days) or well nourished (4.6 ± 7.4 days). There was a higher mortality rate amongst the patients who were malnourished than the patients who were well nourished. Six of the seven patients that died were malnourished. SGA is a reliable tool for the diagnosis of malnutrition of hospitalised adult patients.

1. Detsky AS, McLaughlin JR, Baker JP. What is subjective global assessment of nutritional status? Journal of Parenteral and Enteral Nutrition. 1987;11(1):8-13.