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ORIGINAL ARTICLE

Validity of subjective global assessment as a screening method for hospital malnutrition. Prevalence of malnutrition in a tertiary hospital☆

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Abstract
Introduction: Hospital malnutrition is a highly prevalent problem that affects patient morbidity and mortality resulting in longer hospital stays and increased healthcare costs. Although there is no single nutritional screening method, subjective global assessment (SGA) may be a useful, inexpensive, and easily reproducible tool.
Methods: A cross-sectional, observational, randomized study was conducted in 197 patients in a tertiary hospital. SGA, anthropometric data, and biochemical parameters were used to assess the nutritional status of study patients.
Results: Fifty percent of subjects were malnourished according to SGA. A higher prevalence of malnutrition was found in medical (53%) as compared to surgical departments (47%). Half the subjects (50%) had malnutrition by SGA, but only 37.8% received nutritional treatment during their hospital stay. Mean hospital stay was longer for patients malnourished (13.5 days) or at risk of malnutrition (12.1 days) as compared to well nourished subjects (6.97 days). SGA significantly correlated ($P < 0.012$) with anthropometric and biochemical malnutrition parameters.
Conclusions: Prevalence of hospital malnutrition is very high in both medical and surgical departments and is inadequately treated. SGA is a useful tool for screening hospital malnutrition because of its high degree of correlation with anthropometric and biochemical parameters.

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PALABRAS CLAVE
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Validez de la valoración subjetiva global como método de despistaje de desnutrición hospitalaria. Prevalencia de desnutrición en un hospital terciario

Resumen
Introducción: La desnutrición hospitalaria es un problema de alta prevalencia que afecta a la morbimortalidad de los pacientes, lo que comporta una mayor estancia y un incremento de los costes sanitarios. Aunque no existe un único método de despistaje nutricional, la valoración subjetiva global (VSG) puede ser una herramienta útil, económica y fácilmente reproducible.
Métodos: Estudio transversal, observacional y aleatorio realizado en 197 pacientes de un hospital terciario. Se utilizó la VSG y se determinaron datos antropométricos y parámetros bioquímicos para evaluar el estado nutricional de los pacientes estudiados.
Resultados: El porcentaje de sujetos desnutridos fue del 50% según la VSG. Se observó una mayor prevalencia de desnutrición en los servicios médicos (53%) que en los quirúrgicos (47%). La mitad de los sujetos estudiados (50%) presentó desnutrición mediante la VSG, de los cuales solo un 37,5% recibió tratamiento nutricional durante su estancia hospitalaria. La estancia media de los pacientes desnutridos (13,5 días) o en riesgo de desnutrición (12,1 días) fue mayor que la de aquellos sujetos bien nutridos (6,97 días). La VSG se correlacionó de forma significativa ($p < 0,012$) con los parámetros antropométricos y bioquímicos de desnutrición.
Conclusiones: La prevalencia de desnutrición hospitalaria es muy alta, tanto en servicios médicos como quirúrgicos y, sin embargo, es incorrectamente tratada. La VSG es una herramienta útil de despistaje de desnutrición hospitalaria por su alto grado de correlación con parámetros bioquímicos y antropométricos.

Introduction

Malnutrition is defined as a syndrome characterized by impaired body composition resulting from a negative balance in the energy and/or protein compartment. Malnutrition is associated with physiological, biochemical, and immune changes which increase morbidity and mortality, hospital stay,[1–3] and healthcare costs.[3–6] The significance of inflammation has also been noted in recent years, because it is increasingly identified as an important factor that increases the risk of malnutrition and mortality, and may contribute to a suboptimal response to nutritional intervention.[7]

The early detection of malnutrition should therefore be a priority throughout the hospital stay. There is, however, no universally accepted tool for such detection. In 2001, the Council of Europe concluded that there was no standard nutritional assessment method allowing for total screening of the inpatient population.[8] The Committee of Ministers of the Council, in its Resolution ResAP(2003)3 on food and nutritional care in hospitals,[9] stated that nutritional assessment is an indispensable tool in the evaluation of hospitalized patients. Assessment should be early, simple, based on the best scientific evidence, and adaptable to clinical circumstances such as age, sex, and disease severity. Different screening methods are currently used, including subjective global assessment (SGA),[10] the screening method recommended by the American Society of Parenteral and Enteral Nutrition (ASPEN).[11]

On the other hand, the European Society of Parenteral and Enteral Nutrition (ESPEN) recommends the use of valid, simple, and rapid screening methods such as Nutritional Risk Screening (NRS 2002) for hospitalized patients.[12,13] NRS has high sensitivity, specificity, and a concordance coefficient between expert observers. It consists of two parts, the first of which, pre-screening, requires the collection of four simple data: the body mass index (BMI), dietary intake, weight loss, and disease severity, which may easily be recorded by non-specialized staff. The second part includes a score depending on the disease, nutritional status (weight loss, calculation of energy requirements and dietary intake), and patient age. Depending on the result of pre-screening, the second part, requiring some nutritional training, may have to be performed. Computer tools for hospital malnutrition screening have also been designed, including the CONUT® (from the Spanish *Control Nutricional*) project, which uses test parameters related to malnutrition (albumin, total cholesterol, and total lymphocyte count) together with general and diagnostic databases of hospitalized patients.[14] The recent multidisciplinary consensus on the approach to hospital malnutrition states that the screening method used is not relevant,[15] but it is recommended that it include weight, height, BMI, weight changes, and intake changes as basic tools.

After screening, anthropometric data (BMI, percent weight loss, tricipital fold, etc.) and biochemical parameters (albumin, prelbumin, transferrin, cholesterol, etc.), which cannot be considered diagnostic by themselves but represent complementary data in complete assessment, are used for the complete assessment of nutritional status. Given our experience at our center in the use of SGA as a screening method, we decided to conduct a study to ascertain its validity and to examine the prevalence of malnutrition at our hospital with the following objectives: to ascertain the validity of SGA as a hospital malnutrition screening method through its correlation to anthropometric data and biochemical parameters of malnutrition, to examine the prevalence of malnutrition at a third-level hospital