



ORIGINAL ARTICLE

Nutritional Screening of Pulmonology Department Inpatients



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Received 27 November 2013; accepted 4 January 2014

Available online 20 March 2014

KEYWORDS

Screening;
Undernutrition;
Nutritional screening;
*Malnutrition
Universal Screening
Tool*;
Pulmonology

Abstract Undernutrition is associated with worse clinical outcomes and so screening is recommended. Given the paucity of information on nutritional status and on the clinical impact of undernutrition in Pulmonology patients who have been hospitalized, it is of the utmost importance that it is studied.

Through a longitudinal study conducted of 323 patients consecutively admitted to a Pulmonology hospital department, undernutrition was screened using the Malnutrition Universal Screening Tool and the association between length of hospital stay, pathology type, discharge destination and undernutrition risk was quantified.

There was found to be a high proportion of patients at risk of undernutrition, with 18.3% at high risk and 15.5% at moderate risk. Patients at risk of undernutrition had a higher risk of dying during hospitalization (OR = 2.72, 95% CI: 1.48- 4.97).

One in three patients admitted to this unit is at risk of undernutrition; chronic obstructive pulmonary disease was the pathology most strongly associated with undernutrition risk. Present data reinforces the need for screening for undernutrition on admission.

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PALAVRAS-CHAVE

Rastreio;
Desnutrição;
Risco Nutricional;
*Malnutrition
Universal Screening
Tool*;
Pneumologia

Rastreio nutricional dos doentes internados no departamento de pneumologia

Resumo A desnutrição encontra-se associada a uma evolução clínica mais desfavorável e, por isso, é recomendado o seu rastreio. Dada a escassez de informação sobre o estado nutricional e sobre o impacto clínico da desnutrição nos doentes respiratórios que estiveram hospitalizados, é da maior importância que este seja estudado.

Através de um estudo longitudinal realizado em 323 doentes, consecutivamente hospitalizados no departamento de pneumologia de um hospital, avaliou-se o risco de desnutrição com recurso ao *Malnutrition Universal Screening Tool* e foi quantificada a associação entre

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o tempo de permanência no hospital, o tipo de patologia, o destino da alta e o risco de desnutrição.

Verificou-se existir uma elevada percentagem de doentes em risco de desnutrição, 18,3% com risco elevado e 15,5% com risco moderado. Os doentes em risco de desnutrição apresentaram um risco mais elevado de morrerem durante a hospitalização (OR=2,72; 95% IC: 1,48-4,97).

Um em cada 3 doentes admitidos nesta unidade está em risco de desnutrição; a doença pulmonar obstrutiva crónica foi a patologia mais fortemente associada ao risco de desnutrição. Os dados actuais reforçam a necessidade de um rastreio para a desnutrição, na admissão.

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Introduction

It is increasingly widely recognized that hospitalized patients are undernourished and that circa 30% of patients are at nutritional risk on admission to hospital.¹⁻³ Chronic Obstructive Pulmonary Disease (COPD),⁴⁻⁶ lung cancer^{7,8} and tuberculosis⁹ are pathologies that tend to be associated with undernutrition. Although the frequency of undernutrition risk in these pathologies has been studied, the data on the nutritional status of patients admitted to Pulmonology departments is very limited. A multicenter study conducted recently by Fang *et al.* in China revealed a frequency of 55.9% of undernutrition risk in a Pulmonology unit,¹⁰ which justified the need to clarify whether the extent of this problem is confirmed in Portugal.

Some of the factors that increase undernutrition risk have already been mentioned, namely female gender and advanced age.^{11,12} The presence of the disease is critical since it is associated with increased risk of infection, organ dysfunction and pharmacological therapy.^{3,12-14} In the past not enough attention was given to the importance of evaluating and monitoring parameters related to nutritional status, however the need to conduct undernutrition screening has now been widely recognized.^{11,12}

Screening for undernutrition is justified by the fact that undernutrition is associated with adverse consequences for health as it increases predisposition to disease and inhibits recovery.¹¹ It has been reported that undernourished patients stay in hospital approximately 1.5-1.7 times longer than normal weight patients.^{10,15,16} Undernutrition also increases the risk of infections and multiorgan dysfunction, the pressure on health care facilities and mortality, all of which have strong economic consequences.^{3,14,17-19}

To the best of our knowledge, the association between undernutrition risk and hospital admission pathology, time of admission and clinical outcomes has not been quantified for pulmonology patients, hence the need to conduct this research to improve our understanding of the extent of the problem and to confirm whether the associations already described for other classes of diseases can be confirmed in Pulmonology patients. The present study aims to contribute to the characterization of the risk of undernutrition of patients admitted to Pulmonology units and to quantify the possible associations between undernutrition risk, assessed by the Malnutrition Universal Screening Tool

(MUST) and admission pathology, length of hospital stay and discharge destination.

Methods

Design and participants

We conducted a longitudinal study in the Department of Pulmonology at the Hospital Centre of Vila Nova de Gaia/Espinho, Entidade Pública, which included all the patients, aged 18 and above, who were admitted between February and July 2013.

This study was approved by the Ethics Committee and the Board of Directors of this Hospital Center and the anonymity of the participants was guaranteed. All information was obtained according to Declaration of Helsinki recommendations.²⁰

Data Collection

Data on demographics (age and sex), clinical characteristics, the condition that prompted admission, length of hospital stay (number of days between admission and discharge) and also destination post-hospital (home, transfer to Continuing Care Unit (CCU) or death) were obtained from the clinical files.

The assessment of undernutrition risk was conducted using the MUST in the first 72 hours after admission. This tool is based on three criteria, namely Body Mass Index (BMI), unintentional weight loss over the previous three to six months and significant decrease in food intake associated with acute illness for a period of more than five days.^{15,21} This tool is validated for use in hospitals,^{15,17} Stratton *et al.* compared different screening and nutritional evaluation tools with MUST, including the Mini Nutritional Assessment, the Patient - Generated Subjective Global Assessment, the Malnutrition Screening Tool, the Malnutrition Risk Score and Nutrition Risk Score in hospital, and showed that MUST compared to the other tools reviewed had reasonable to excellent validity, as well as being quick and easy to use and it also demonstrated excellent reproducibility among different users.¹⁷

Anthropometric evaluation was performed according to standard procedures.²² Height and weight were measured

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