CLINICAL ASPECTS
Nutritional Evaluation of Alcoholic Inpatients Admitted for Alcohol Detoxification
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INTRODUCTION
Nutritional status is known to directly influence the clinical outcome in patients hospitalized for acute illness (Stratton et al., 2006; Raslan et al., 2010) and the chance of them developing complications (Lelovics et al., 2008).

Malnutrition is common in all care settings, all diagnostic categories and all age groups and is frequently underestimated in hospitalized patients, being associated with a longer length of stay and higher mortality rates (García Duque et al., 2008; Pasquinelli and Solaro 2008; Scott, 2008a; Scott, 2008b; Baron et al., 2009; Lamb et al., 2009; Burden et al., 2010; Jaafar et al., 2010; Ruiz and Kamerman, 2010; Ben-Ishay et al., 2011).

As patients at nutritional risk can be easily identified, screening for malnutrition, with a validated screening nutritional tool should be carried out as a routine in hospitalized patients. (Kyle et al., 2005; Anthony, 2008; Raslan et al., 2010; Ben-Ishay et al., 2011)

At present, there is no nutritional screening tool considered to be the gold standard for identifying nutritional risk. (Platek et al., 2011; Velasco et al., 2011) However, in studies comparing malnutrition screening tools, Malnutrition Universal Screening Tool (MUST) and Nutritional Risk Screening-2002 (NRS-2002) produced the best results and therefore should be considered in order to allow alcoholic patients admitted to hospital on Friday afternoon to be screened for nutritional risk on the next Monday morning by the same trained medical doctor to reduce assessment bias.

The MUST has been designed to help to identify adults who are underweight and at risk of malnutrition as well as those who are obese. Although MUST does not detect deficiencies in or excessive intakes of vitamins and minerals (Todorovic et al., 2003), it can detect protein-energy malnutrition and is easy to use, having been developed for all health care settings and patients groups (Godfrey, 2004; Karsegard et al., 2004; Stratton et al., 2004; Harris et al., 2008; Lelovics et al., 2009).

MUST considers three independent criteria—current weight assessed by body mass index (BMI), unintentional weight change and acute disease effect—and determines a malnutrition risk score. The malnutrition risk score can range between 0 and 6 and is obtained by adding the BMI score, the weight loss score and the acute disease effect score. The BMI score may be 0 (BMI >20.0 or >30), 1 (BMI 18.5–20.0) or 2 (BMI <18.5). The weight loss score rates unplanned weight loss in 3–6 months and may be 0 (weight loss <5%), 1 (weight loss 5–10%) or 2 (weight loss >10%). The acute disease effect score may be 0 (if there has been nutritional intake) or 2 (if there has been or is likely to be no nutritional intake for >5 days) (Todorovic et al., 2003).

Alcoholic patients have an increased risk of malnutrition (Gonzalez-Reimers et al., 2011), but we are unaware of any population-based prevalence study of malnutrition in alcoholic patients in any stage of the disease including when they are admitted for alcohol detoxification.

The aim of our study is to assess nutritional risk of alcoholic patients admitted for alcohol detoxification using the MUST screen tool.

MATERIALS AND METHODS
Patients admitted to an alcohol specialized unit of Psychiatric Hospital Centre for alcohol detoxification were screened for malnutrition using the MUST tool in the first 72 h after admission, by a trained medical doctor. A maximum of 72-h period after patient admission was considered in order to allow alcoholic patients admitted to hospital on Friday afternoon to be screened for nutritional risk on the next Monday morning by the same trained medical doctor to reduce assessment bias.

The sample collected was a convenience one. The patient’s inclusion criteria were: (i) to be male or female, (ii) to be 18 years old or older, (iii) live in the Psychiatric’s Hospital Centre area of mental health influence and (iv) were admitted for alcohol detoxification. The patient’s exclusion criteria were: (i) patients who were in no condition to stand to be weighted and/or to have their height measured, (ii) patients who had already been assessed for our study in a previous hospitalization and (iii) patients who could not be assessed within the first 72 h after hospital admission.

Weight was measured with patients wearing only undergarments, using a digital balance with one decimal precision scale, in kilograms (kg), and height was measured with a tape measure with metric scale, in centimetres (cm), without shoes, and then registered in metres (m).
height assessments, BMI was calculated for each patient using the formula \( \text{BMI} = \frac{\text{weight (kg)}}{\text{height}^2 \text{(m)}} \). All patients were asked about their alcohol consumption in the last 4 weeks before admission, namely what type of drinks and how much they had drunk, and it was then converted to grams of alcohol per day, assuming that one standard drink of each drink type contains 10 g of alcohol.

All patients gave informed consent to be included in this study.

**RESULTS**

The study included 51 patients, 35 male and 16 female. Mean age for male was 46 years and for female was 49 years.

Our results show that 22 patients (43%) presented low risk, 6 (12%) presented medium risk and 21 (41%) presented high risk of malnutrition (Table 1).

Table 2 shows the distribution of patients on the three categories considered in MUST to determine the risk score of malnutrition. Most patients (45 (88% of total sample patients)) presented with BMI >20 kg/m² being normal or overweight. However, a significant number of patients (13 (26% of total sample patients)) had significant weight loss of >10% of their body weight and 12 patients (24% of total sample patients) presented with a positive acute disease effect score having had no nutritional intake for a period of >5 days.

The patients’ alcohol consumption was found to be between 40 and 500 g/day and was not directly related to the assessed MUST score, both for males and females.

**DISCUSSION**

Our results showed that 53% of patients were rated at medium or high risk of malnutrition. Our results are similar to the highest values of prevalence of malnutrition found in studies of other authors investigating non-alcoholic patients admitted in hospital for acute disease to whom MUST was applied and they found prevalence of malnutrition to be between 20 and 60% (Todorovic et al., 2003).

The management guidelines after nutritional risk screening with MUST recommend that when MUST score is 0 routine care should be applied, when MUST score is 1 the patient should be under observation and when MUST score is 2 the recommendations are to treat the patient—unless there is no benefit from nutritional support (Todorovic et al., 2003).

The results showing 53% of patients at medium or high risk of malnutrition indicate that nutritional intervention is essential (observation and/or treatment).

Malnutrition can have many consequences, namely impaired immune responses increasing the risk of infection, reduced muscle strength and fatigue, delayed recovery from illness, apathy, depression and self-neglect and increased risk of admission to hospital and length of stay (Todorovic et al., 2003; Kramme et al., 2011; González-Reimers et al., 2011). All these effects of malnutrition increase the costs to Health Systems and impair patient’s recovery.

Although weight is usually assessed by nurses at the patient’s admission to hospital, nutritional scales are not generally applied (Lelovics et al., 2008; Schindler et al., 2010; Boléo-Tomé et al., 2011). Recognition and treatment of malnutrition in hospitalized patients should be a priority in clinical practice.

When we look separately at the three categories evaluated with MUST, it is remarkable that the majority of patients are normal or overweight. This could lead one to think that there are few or no malnourished patients in our group whereas we found a prevalence of 53% of medium and high risk of malnutrition in our sample. This value is explained by the high number of patients presenting with high scores in the categories of weight loss (26% patients lost >10% of total body weight) and acute disease effect (24% patients eat nothing for at least 5 consecutive days). We can conclude that although BMI values were adequate, alcoholic patients admitted to hospital for alcohol detoxification can be at risk of malnutrition. According to our results, one in two alcoholic patients admitted for alcohol detoxification is at least at medium risk of malnutrition.

Although alcohol dependence is a chronic disease, at times of severe acute decompensation, with massive alcohol intake and the need for hospital admission for alcohol detoxification, patients should be considered to be acutely ill. Therefore, although most of patients present an adequate BMI, all patients admitted for alcoholic detoxification should be screened for nutritional risk with MUST. According to the score obtained, patients must be properly treated with nutritional intervention, if necessary, to have an adequate recovery time in hospital, thereby improving the patient’s clinical recovery, with consequent decrease in future costs for the Health System.

**CONCLUSIONS**

Our results show that alcoholic patients admitted to hospital for alcohol detoxification should be screened for malnutrition because of its high prevalence and all of the benefits which result from its treatment.
REFERENCES


