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Prevalence of undernutrition on admission to a short-stay acute care unit

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Undernutrition occurs frequently among patients on admission to hospital, although prevalence depends on the criteria used in its assessment and in the case-mix of patients evaluated[1]. Routine nutritional risk screening, to detect patients who are malnourished or at risk of malnutrition, has been recommended by the British Association for Enteral and Parenteral Nutrition[2]. This university hospital contains an acute care unit with a proposed maximum length of stay of approximately 5 d. This thirty-nine bed unit employs one full-time dietitian.

The primary aim of the present study was to assess the prevalence of undernutrition among patients admitted to the Acute Care Unit. The study also sought to evaluate whether anthropometric measurements or use of screening tools (malnutrition universal screening tool (MUST), malnutrition screening tool (MST) and subjective global assessment (SGA)) can best identify those patients with undernutrition. Finally, two validated screening tools (MUST and MST) were compared with the 'gold standard' SGA screening tool to determine the most appropriate tool for use on the Acute Care Unit.

During a 2-month period, nutritional assessment was carried out on fifty-one randomly-selected patients within 48 h of admission. BMI, % weight loss and body composition measurements (triceps skinfold thickness (TSF), mid-arm circumference (MAC), mid-arm muscle circumference (MAMC)) were recorded. Undernutrition was defined as (a) BMI $<18.5\,kg/m^2$ or (b) BMI $<20\,kg/m^2$ with co-existing TSF or MAMC <15th percentile[1]. Each patient was also screened using three different screening tools (SGA, MST and MUST). Regression analysis was carried out using Minitab statistical package (Minitab Inc., State College, PA, USA).

The Table shows the differences in prevalence of undernutrition depending on the method of assessment used.

Method used to detect undernutrition	Prevalence of undernutrition (%)
BMI alone	2
BMI + TSF or MAMC	10
SGA	35
MUST	22
MST	22

BMI alone underestimated the prevalence of undernutrition. A large percentage of patients had a TSF and MAMC below the 15th centile (24 and 20 respectively). In total 41% of patients had some extent of weight loss on admission, ranging from 1.4% to 18% over the previous 3–6 months. Only 48% of these patients with weight loss were referred to the dietitian.

SGA screening tool detected the presence of undernutrition in 22% of patients with a 'normal' BMI and in 4% of those with an 'overweight' BMI, suggesting that SGA seems to be a better indicator of disease-related malnutrition than anthropometric data alone. The MUST and MST correlated well with the SGA (r 0.07, $P=0.0001$ and r 0.58, $P=0.0001$ respectively). However, the MUST and the MST were in agreement with the SGA in only 56% and 67% of cases respectively. There was an 82% agreement between the MUST and MST screening tools.

Screening tools may detect undernutrition more effectively than anthropometry alone. Use of screening tools permits the detection of undernutrition in patients with a BMI within the normal to higher reference range. A significant or severe weight loss is not always apparent to healthcare staff; thus, use of a simple screening tool (such as the MUST or MST) may allow the timely identification of those at risk of undernutrition and thus facilitate early referral to the dietitian.

1. Planas M, Audivert S, Perez-Portabella C *et al*. (2004) *Clin Nutr* **23**, 1016–1024.
2. Elia M (2003) *Screening for Malnutrition: a multidisciplinary responsibility. Development and use of the 'Malnutrition Universal Screening Tool' (MUST) for adults.* Redditch, Worcs.: BAPEN.