Original Article

Prevalence of Malnutrition and Use of Oral Nutritional Supplements in Older Internal Medicine Inpatients

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Abstract

Background: Malnutrition is common and is a major clinical health problem. The frequency of malnutrition and of the risk of developing malnutrition is typically high amongst older acute care inpatients. A close relation between malnutrition of the hospitalised patient and poor outcome (e.g. complications such as infections and pressure ulcers) is well documented. Malnutrition should be timely recognized by a validated screening tool and appropriate nutritional care should be provided to malnourished and at risk of malnutrition patients.
Aim: The present research aims to provide an estimation of the prevalence of malnutrition in older inpatients admitted to the internal medicine department of a Greek public hospital. Another objective of the present research is to estimate the percentage of patients identified as malnourished that were offered Oral Nutritional Supplements (ONS).
Methodology: During the first trimester of 2018, 147 older patients >65yrs (mean age 78.2 + 7.2 yrs, 61.4% women) were screened for malnutrition with the standardized screening tool Mini Nutritional Assessment-Short Form (MNA-SF). Patient's medical records were reviewed in order to assess the use of Oral Nutritional Supplements (ONS).
Results: According to MNA-SF, 20% of patients were malnourished (MNA-SF score 0-7) and 52% were at risk of malnutrition (MNA-SF score 8-11). Amongst 25 (20%) malnourished patients only 8 received ONS.
Conclusion: Our research findings confirm the relevant research literature on the high prevalence of malnourished or at risk of malnutrition amongst older internal medicine inpatients. Moreover, our findings also demonstrate the increased likelihood of inadequate nutritional intervention as exhibited by the limited number of malnourished patients provided with ONS for enhancement of energy and protein intake.

Keywords: Malnutrition, Screening, Older Inpatients, Oral Nutritional Supplements

Introduction

Malnutrition is common and is a major clinical health problem, nevertheless it often remains unrecognized. The frequency of malnutrition and the risk of developing malnutrition are typically high in the elderly and the polymorbid internal medicine patient (Agarwai E., 2013). Disease related factors that reduce intake despite availability, increased nutritional requirements related to disease and other factors such as poor quality or/and presentation of foods in the hospital setting, reduce dietary intake and thus lead or worsen malnutrition of hospitalized patients (Agarwai et al., 2013). After hospital admission, deterioration in nutritional status

often occurs unless action is taken to prevent it (Cederholm et al., 2017). Nutritional support (ONS, enteral and/ or parenteral nutrition) is often not used early enough or frequently enough to prevent or treat malnutrition, despite a large and growing evidence base that suggests benefits when nutritional support is used appropriately(National Institute if Clinical Excellence., 2006). A close relation between malnutrition and poor outcome, e.g. increased rates of infections and pressure ulcers, delayed wound healing, increased length of hospital stay, increased duration of convalescence after acute illness as well as increased mortality is well documented in older persons (Starke et al., 2011, Vanderwee et al., 2011).

Research questions and Hypothesis

The present research aims to describe the identification of malnutrition and the provision of nutritional support in older adults in a Greek Public Internal Medicine ward. Research objectives are to estimate the prevalence of malnutrition in older inpatients admitted to the internal medicine department and to estimate the percentage of patients identified as malnourished who were offered ONS.

Background

Nutrition is an important modulator of health and well-being in older persons. Due to many factors, nutritional intake is often compromised in older persons and the risk of malnutrition is increased. Reported prevalence rates greatly depend on the definition used, but are generally below 10% in independently living older persons and increase up to two thirds of older patients in acute care and rehabilitation hospitals (Cereda et al., 2016).

Particularly in case of acute and chronic illness nutritional problems are widespread and a reduced dietary intake in combination with effects of catabolic disease rapidly leads to malnutrition. Older internal medicine patients have inadequate nutritional intake to meet nutritional requirements due to either reduced intake when food is available (anorexia due to disease, gastrointestinal symptoms related to drug use e.g. nausea, anxiety or depression, difficulty getting food to mouth e.g. muscle weakness, coordination or oral problems, difficulties chewing e.g. no dentures, tasting, oral intake contraindicated e.g. intestinal failure, enforced fasting for diagnostic tests or treatments), due to increased nutritional requirements, malabsorption, reduced intake due to inadequate availability, quality or presentation of food in the hospital setting, lack of recognition of malnutrition and treatment (Agarwai et al., 2013, National Institute of Clinical Excellence, 2006).

By identifying older persons who are malnourished or at risk of malnutrition at hospital admission the nutritional support team can intervene earlier to provide adequate nutritional support, prevent further deterioration of malnutrition , and improve patient outcomes (Lamb et al., 2009).

Independent of specific diagnosis and also in overweight and obese persons, malnutrition and its risk should be systematically and routinely screened at admission to acute care hospital using validated tools and thereafter in regular intervals depending on the patient's condition (Kodrup et al., 2002).

Methodology

147 elderly patients >65yrs (mean age 78.2 + 7.2 yrs, 61.4% women) were screened for malnutrition with the standardized screening tool Mini Nutritional Assessment- short form (MNA-SF). MNA-SF is a validated screening tool developed for older adults (Vellas et al., 1999, Kaiser, et al., 2011, van Bokhorst-de van der Schueren, et al., 2014). In addition to standard screening parameters (low body mass index, non-volitional weight loss, reduced food intake, disease burden, (Kodrup, et al., 2002) it includes two important parameters often afflicting older adults that may lead to the development of malnutrition, namely immobility and dementia/ depression- and thus, besides malnutrition also considers an existing risk of malnutrition. If BMI is not obtainable, calf circumference can be used. The MNA short form can be completed in a few minutes and be applied in all geriatric settings (Cereda, et al., 2016). Body Mass Index was calculated according to the formula weight in kilograms/ height in meters* height in meters). Height and weight were measured according to standard techniques when possible. If the patient was unable to stand, height was measured using the indirect method of knee height with a sliding knee height calliper according to standard techniques and the use of population-specific formula to calculate height from standard formula (Elderly Italian men13 [SEE = 4.3 cm]=94.87 + (1.58 x knee height)– (0.23 x age) +

4.8 Elderly Italian women13 [SEE = 4.3 cm]=94.87 + (1.58 x knee height) – (0.23 x age). (Donini, et al., 2000, Rubenstein, et al., 2001)

Results

According to MNA-SF, 20% of patients were malnourished (MNA-SF score 0-7) and 52% were at risk of malnutrition (MNA-SF score 8-11). As far as food intake is concerned, 8.7% of patients experienced severe decrease of food intake and 2% moderate decrease in food intake. As far as non volitional weight loss is concerned 19.7% of patients experienced involuntary weight loss during the last 3 months greater than 3 kg, 7.9% did not know and 21.3% experienced weight loss between 1 and 3 kg, while 51.2% of patients did not experience any weight loss. 10.2% of patients were bed or chair bound, 18.9% were able to get out of bed/chair, but did not go out, and the rest 70.9% were able to leave their home and go out. 90.6% of patients suffered psychological stress or acute disease in the past three months and only 9.4% did not. According to careful review of the patient's medical record, the use of professional judgment and after asking the patient, the nursing staff and/ or the caregiver the researchers full filled question no 5 of the MNA-SF. Among participants 12.6% did not experience severe dementia or depression, 52.8% experienced mild dementia and only 27.6% did not experience any psychological problems. 3.1% of patients had BMI <19kg/m^2, 7.9% of patients had 19 kg/m^2≤BMI<21 kg/m^2, 5.5% of patients had 21 kg/m^2≤BMI<23 kg/m^2 and 83.5% had BMI ≥23 kg/m^2. Amongst 25 malnourished patients only 8 received ONS.

Discussion

Large scale studies show that about 1 in 4 adults patients in hospital are at risk of malnutrition or are already malnourished (Jensen & Cederholm, 2018, Kaiser, et al., 2010). Malnutrition is common across a variety of hospital wards and is especially prevalent in geriatric wards (Meijers, et al., 2009, Cereda, et al., 2016). Our research findings relatively to prevalence of malnutrition (20% of patients classified as malnourished (MNA-SF score 0-7) and 52% classified as at risk of malnutrition (MNA-SF score 8-11) are in accordance with the existing literature. It is important to underscore that ''risk of malnutrition'' as it is identified by the screening tools is in itself a condition related to increased morbidity and mortality (Cederholm, et al., 2017, Jensen & Cederholm, 2018) According to our findings 11% of research participants have BMI <21 kg/m^2. There is substantial regional variation in the use of the BMI as a phenotypic criterion for malnutrition diagnosis (Cederholm, et al., 2018). Nevertheless most existing approaches used in screening and assessment of malnutrition and cachexia (MNA-SF, Nutritional Risk Screening-2002, MUST, European Society of Parenteral Enteral Nutrition 2015, Subjective Global Assessement etc) include BMI. (Cederholm, et al., 2018) According to GLIM criteria for the diagnosis of malnutrition the cut off point of the phenotypic criterion of low body mass index is <22kg/m^2 for older adults (>70years). Taken the above into consideration our findings exhibiting only 11% of the research participants with BMI<21 are in accordance with previous existing literature (Kaiser, et al., 2010).

In individuals who are identified as malnourished or at risk of malnutrition by screening, a comprehensive nutritional assessment should follow, providing information on kind and severity of malnutrition and its underlying causes as well as on individual preferences (regarding food and beverages as well as enteral and parenteral nutrition) and resources (e.g. chewing and swallowing ability, eating dependence, gastrointestinal function, severity of disease, general prognosis) for nutritional therapy (Volkert, et al., 2018, Volkert & Schrader, 2013).

Dietary counselling, food fortification, additional snacks and ONS are options to increase daily dietary intake by the oral route (Baldwin, et al., 2016). According to evidenced based recommendations hospitalized older persons with malnutrition or at risk of malnutrition should be offered ONS, in order to improve dietary intake and body weight, and to lower the risk of complications and readmission (Volkert, et al., 2018). Oral Nutritional Supplements are energy and nutrient dense products designed to increase dietary intake when diet alone is insufficient to meet daily nutritional requirements. Compared to usual care, high protein ONS demonstrated a range of effects across settings and patient groups including reduction in mortality of up to 24% vs standard care (Cawood, et al., 2012), reduction in complication rates vs routine care (Milne, et al., 2009, NICE, 2006) and weight gain (Stratton, et al., 2013, Cawood, et al., 2012).

The results of the present study confirm previous findings that pinpoint to the reality that

nutritional support (ONS, enteral an parenteral nutrition) is often not used early enough or frequently enough to prevent or treat malnutrition, despite a large and growing evidence base that suggests benefits when nutritional support is used appropriately. (Nieuwenhuizen, et al., 2010) The limited use of ONS may be attributed to frequent lack of interest in nutrition on behalf of health professionals, to inadequate referrals to dietitians, to inadequate training and knowledge of doctors and nurses in nutrition, to lack of resources or inadequate management of nutrition services in the hospital setting. (Vanderwee, et al., 2011) (Lamb, et al., 2009) This is increasingly an issue as current economic constraints mean budget holders may choose to withhold prescribed nutritional care, failing to recognize that greater costs result when leaving malnutrition untreated (namely, increased costly hospital admissions and complications such as infections and pressure ulcers). (Elia, et al., 2016)

Conclusions

Malnutrition is not seen as a priority in patients; their underlying pathologies take priority. Health professionals need to realise that poor nutritional status is part of the underlying disease, not an accidental finding, and that addressing nutritional status is also important. In fact, without proper nutritional care, malnutrition will lead to increased complications and longer recovery stays amongst patients. Our findings complement existing literature and pinpoint to the need health professionals to understand that when patients are unable to drink or consume enough food and sufficient nutrients for health and healing, it is of paramount importance to provide for all their hydration and nutritional needs in order to sustain life or improve their health status.

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