MALNUTRITION FOLLOWING STROKE IN A REHABILITATION UNIT: FREQUENCY AND ASSOCIATED RISK FACTORS

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Introduction: Prevalance of malnutrition following stroke is reported to vary widely between 6% and 62%.

Purpose: The aim of this cross-sectional study was to investigate the frequency of malnutrition and its associated risk factors in stroke patients admitted for rehabilitation in a rehabilitation unit of a university hospital.

Methods:

Patients’ nutritional status was determined by the amount of weight loss and body mass index (BMI):

- Patients were defined as severely undernourished: BMI<18.5 (or BMI <20 for patients age≥65 years) and/or >5% unintentional weight loss in the past month and/or >10% unintentional weight loss in the past 6 months.
- Patients age≥65 years were defined as moderately undernourished: BMI 20-22 and/or 5-10% weight loss in the past 6 months.
- Patients age<65 years were defined as moderately undernourished: BMI 18.5-22 and/or 5-10% unintentional weight loss in the past 6 months

Malnutrition risk was determined by Nutritional Risk Screening-2002 (NRS 2002).

All patients were questioned and evaluated regarding parameters which might be associated with malnutrition:

- Demographic: Age, sex, education, marital status
- Clinical: Time since stroke, previous history of pneumonia, dysphagia and pressure ulcers, comorbidities, smoking, alcohol use, stroke type, hemiplegic side, mid-upper arm circumference, triceps skinfold thickness, feeding method
- Biochemical: Albumin, prealbumin, transferrin, protein, 25(OH)Vitamin D, Vitamin B12, zinc
- Function: Functioning by Functional Indepence Measure=FIM™, global disability level by Modified Rankin Scale.

Results:

71 stroke patients were included:

- Mean age was 60.2±13.8 years, 43% were male, median time since stroke was 6.2 months (range: 0.3-130 months)

22.5% (n=16) of the patients were found to be malnourished, 7% severely and 15.5% moderately malnourished.

29.6% of the patients were at the risk of malnutrition according to NRS 2002. All patients with malnutrition risk were malnourished. In addition 5 people without malnutrition were at risk according to NRS 2002.

In the malnourished group, time since stroke was shorter, motor functioning (motor FIM) and global disability levels (Modified Rankin scores) were worse (p<0.05).

Patients who had previous history of pneumonia or pressure sores, whose feeding method was Nasogastric/PEG and whose mid-upper arm circumference (MUAC) and serum prealbumin levels below the cut-off were more prevalant in the malnourished group (p<0.05).

In univariate regression analysis, time since stroke (≤12 months), educational level (university or higher), previous history of pnemonia or pressure sores, MUAC (≤25.5 cm), method of feeding (Nasogastric/PEG) and serum prealbumin (≤0.18g/L) were found to be significant risk factors.

Multiple regression analysis revealed that time since stroke ≤12 months (p=0.010), MUAC ≤25.5 cm (p=0.007) and serum prealbümin levels ≤0.18 g/L (p=0.012) were independent risk factors which could predict malnutrition risk.

Conclusion:

- Frequency of malnutrition was 22.5% in a group of stroke patients, admitted for rehabilitation at acute, post-acute and chronic stages.
- Time since stroke less than 12 months, MUAC and serum prealbumin levels below the cut-off points were found as independent risk factors for malnutrition following stroke.

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