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SCREENING AND PREDICTING MALNUTRITION IN LUNG CANCER PATIENTS: DEVELOPING NEW TOOLS.

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Purpose: The assessment and management of nutritional problems are crucial to support patients undergoing radiotherapy. Poor nutritional status may occur as a result of pre-existing problems, the age, the cancer itself or the side effects of treatment. Weight loss, anorexia and cachexia affect many patients with cancer of the lung, head and neck or gastro-intestinal tract. The altered nutritional status affects patients and families physically, psychologically and socially. Malnutrition impairs also the outcome of the disease with increased morbidity, mortality, hospital stay and healthcare cost. This prospective study aimed at developing a simple and easy tool to assess the risk of malnutrition after radiotherapy.

Materials: 47 lung cancer patients treated with curative intent were recruited and evaluated before radiotherapy and 4 months after completion of the treatment. The evaluation was performed using 59 questions. The first part of the questionnaire investigated social support, recent weight loss, the current disease and their relation to nutritional needs, metabolic stress, physical evaluation, the treatment and the patient's functional capacity. The second part of the questionnaire dealt with the patient's age, his/her symptoms, functional capacity and smoking habits. Malnutrition status was defined using Thor esen's criteria. The validity of the new screening tool was based on the comparison of anthropometric, biological and nutritional variables between patients classified as being at risk of malnutrition or not.

Results: Using multivariate stepwise regression, body mass index (BMI) and weight loss over the last 6 months were identified as criteria for malnutrition. The score of malnutrition was computed according to the following equation: $S = 5.88 - 0.2 \text{ BMI} + 0.05 \text{ WL}$ where WL is the patient's weight loss over the last 6 months expressed in percent of the initial weight and S is the malnutrition score with a threshold value of 1.8. Low BMI, age (> 70 years) and presence of oedema were identified as risk factors for malnutrition during radiotherapy.

The risk for malnutrition during radiotherapy is given by the equation:

$R = 3.67 + 0.98 A - 0.12 \text{ BMI} + 1.2 \text{ OE}$ where A is the age > 70 years, OE is the presence of oedema and R the risk with a threshold value of 1.2.

Conclusions: Two simple tools were determined with the capacities (1) to detect malnutrition in lung cancer patients scheduled for radiotherapy and (2) to assess the risk for these patients to develop malnutrition after treatment. Further studies are needed to validate these tools in larger samples, in other cancer patients' populations and for other time points.