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Short Communication

Nutritional Assessment in Als: A Conceptual Approach

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The Amyotrophic Lateral Sclerosis (ALS) is a progressive and debilitating neurodegenerative disease that progresses to a reduction in respiratory muscle strength, dysphagia and weight loss [1]. Muscle atrophy may hide the increased metabolic demand, characteristic of progressive diseases. Once the energies are channeled to the maintenance of pulmonary ventilation, the increase is justified by the basal energy expenditure of these patients whose nutritional changes have taken such proportions that the studies seek to identify it as a predictor [2, 3]. Hence the importance of nutritional assessment and intervention in the treatment of ALS.

The changes in nutritional status during disease progression are well known. Studies have shown a decrease in body weight, fat and lean mass, in addition to increased resting energy expenditure, even with an adequate intake of energy and protein [4,5].

For nutritional assessment in ALS, clinical history, dietary habits, anthropometric measurements and biochemical data should be considered. The measures used for the evaluation and monitoring of body compartments are: weight, height, circumference and skinfold [6]. The body mass index (BMI) is the most used tool to determine the nutritional status of patients with ALS. Values between 18.5 and 24.99 kg / m^2 are considered normal, and lower numerical intervals are relevant indicators of malnutrition and negative predictors of survival in disease [3,7].

Despite the BMI and the isolated body weight being much referenced measures for the nutritional evaluation of these patients, they do not reflect specific changes in body compartments [8]. For more precise information on body composition, additional data should be considered, such as the triceps skinfold and arm circumference, as already mentioned. These measures are used to calculate the arm muscle circumference, arm muscle area and arm fat area, measurements that assess body lean and fat mass, respectively.

Anthropometry has been a valuable tool for identifying malnutrition in ALS [9]. It is likely that anthropometry may reflect both the nutritional status as the loss of motor neurons. Both situations are likely to be influenced and may contribute to disease progression [10].

Kasarskis et al, 1997 [9], in a pioneering study using anthropometry of the arm and correlating it with disease progression, found a correlation between the arm muscle area and lung function (forced vital capacity) demonstrating the importance of body composition analysis with the progression of ALS.

Laboratory tests are also included in the nutritional assessment. When compared with clinical signs, nutritional status may vary slowly, showing that the biochemical analysis is valid, but that the results must be interpreted carefully [6]. The biochemical data that are commonly used to assess the nutritional status include serum dosage of albumin, transferring, and protein linked to retinol.

There are more sophisticated methods for the assessment of nutritional status, among them we can mention the bioelectrical impedance analysis (BIA), dual X-ray absorptiometry (DXA), and doubly labeled water, although very little used in clinical practice. These methods require advanced and expensive technology and it is mostly used for clinical studies [8,11].

Although there are several specific methods of nutritional assessment, most of the studies mention the BMI as a nutritional indicator in ALS to be a simple, at no cost and it can be applied by professionals from different areas of health. There are consistent reports relating BMI to disease progression [3,10-12]. By analyzing the changes in nutritional status as a prognostic factor in patients with ALS, a reduction of 1 kg / m^2 was associated with 20% to the risk of death [3].

It is known that patients with ALS present an increased risk of nutritional depletion in the course of the disease. Still, it is difficult to classify the best nutritional assessment method in order to anticipate the intervention, in order to work with better outcomes in disease.

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