Optimal macronutrient composition to prevent weight loss and delay disease progression in Amyotrophic Lateral Sclerosis: a systematic review

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• Amyotrophic Lateral Sclerosis (ALS) is a progressive neurological condition with poor prognosis and is the most common type of Motor Neuron Disease¹.

• Progressive loss of skeletal and respiratory muscles is often observed¹.

• Weight loss of 5-10% is associated with shorter survival².

• Dietary intervention and oral nutritional supplements (ONS) are recommended to increase energy intake; however the optimal macronutrient distribution is unknown².

Aim: To determine the optimal macronutrient composition of dietary and ONS interventions to prevent weight loss and delay disease progression.

Methods

• PubMed, CINAHL, Embase, MEDLINE and Web of Science were searched in April 2020.

• Inclusion criteria were randomised clinical trials in patients diagnosed with ALS at any stage of the disease.

• Outcomes included change in body weight, body mass index (BMI), and ALS Functional Rating Scale-Revised (ALSFRS-R).

• Study quality was assessed using the Cochrane risk-of-bias tool³, and the certainty of evidence was assessed using the Grading of Recommendations Assessment, Development and Evaluation system⁴.

Results

• Four randomised controlled trials⁵-⁸ met the inclusion criteria.

• Overall certainty of evidence was very low due to small sample size⁵-⁷, study heterogeneity⁵-⁶ and high-risk of bias⁵-⁶.

• Fast-progressing patients (higher baseline ALSFRS-R) receiving high-fat ONS had a slower decline in BMI (p=0.02)⁸.

• Overall usual dietary intake was poorly monitored and reported in these studies.

References


⁴GRADEpro GJMU. GRADEpro guideline development tool [software]. 2015.


