



# EFFECTS ON WEIGHT AND SKELETAL MUSCLE MASS (SMM) OF A LEUCIN-BASED ORAL NUTRITIONAL SUPPLEMENTATION (ONS) IN PATIENTS UNDERGOING RADIOTHERAPY (RT) FOR HEAD AND NECK (H&N) CANCER

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## Background and aims

Studies have shown a positive effect of leucine on sarcopenia (1). The aim of this study was to evaluate the effects of a leucine-based supplementation in a small cohort of patients undergoing radiotherapy for H&N cancer, compared to a standard ONS.

## Methods

Two groups of patients with H&N cancer treated with a 30 sessions-radiotherapy schedule were evaluated. Data (SMM measured by BIVA® and weight) were collected at T0 and T1 (after 6 weeks). Group 1 was assigned to a 3 g leucin-based ONS; Group 2 was assigned to a standard high protein, high energy ONS. Supplementation was given in order to meet the Espen/Sinpe targets for cancer patients of 25-30 kcal/kg and 1.5 proteins/kg.

## Clinical features at T0

Group 1: N=15; 11 M 4 F, aged 59 y ± 10 (mean ± SD); weight kg 76 ± 14 (mean ± SD), BMI 26,6 kg/m<sup>2</sup> ± 4,2 ; SMM 26,7 kg ± 6,5;

Group 2: N=15 M; aged 68 y ± 10; weight 74,5 ± 11,5 BMI 24,6 kg/m<sup>2</sup> ± 3; SMM 28,3 kg ± 2,7.

## Results

These were the results at T1 (after 6 weeks):

Group 1: weight 73.4 kg ± 13.6, BMI 25.5 kg/m<sup>2</sup> ± 3.9, SMM 27.2 kg ± 6.1;

Group 2: T1 weight 69.8 kg ± 11, BMI 23.2 kg/m<sup>2</sup> ± 3, SMM 26.7 kg ± 2.7.

Group 1 had an increase in SMM at T1, while Group 2 had a loss in SMM. In Group 1, the difference in weight and SMM from T0 to T1 was statistically significant (p < 0.005). The variation in muscle mass between the 2 groups was statistically significant too (p 0.002).

## Conclusions

The results are not yet consistent, but it could be reasonable to suggest that leucine could mitigate the loss of muscle mass in patients with a H&N tumor undergoing RT.

## References

1. Cereda E. Et al. Whey Protein, Leucine- and Vitamin-D-Enriched Oral Nutritional Supplementation for the Treatment of Sarcopenia *Nutrients* 2022, 14, 1524

