M135 - Impact of oral supplementation on nutritional status of pre-cachetic patients undergoing oncologic treatments.

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Purpose: Nutritional interventions are recommended to all malnourished cancer patients and those at nutritional risk, in order to prevent or reverse the decline in nutritional status and to prevent the progression to cachexia, marked by loss of muscle mass. Oral nutritional supplements (ONS) has been shown to increase energy and protein intake, with consequent benefit for nutritional status, especially when it is started early. In this context, proteins and specifics amino acids as L-leucine are key nutrients to delay muscle degradation. The aim of this study was to evaluate the effect of a specialized ONS on the percentage of fat-free mass (% FFM) of pre-cachectic cancer patients undergoing chemotherapy.

Methods: Patients who had received at least 2 cycles of chemo/chemoradiation therapy in neoadjuvant, adjuvant or palliative setting and classified as pre-cachectic (PC) (ESPEN criteria), were randomly assigned to receive a high protein ONS enriched with L-leucine (Immax®, aka ENU® Pro3+ (USA)) + nutritional counseling (NC), henceforth demoted supplementation group (SG) or NC alone, the control group (CG). NC was according to daily requirements of nutrients and calories (Harris-Benedict). In the SG, calories from the ONS completed the energetic requirements. It was prescribed approximately 600 calories/d of the ONS for 4 weeks. Body weight, Body Mass Index (BMI), %FFM and nutrition intake were captured on baseline and 4 weeks later in both groups. The % FFM was assessed by bioimpedance before and after supplementation. Statistical evaluation was performed by analysis of variance (ANOVA), StatPlus 6.0 software.

Results: Fifty patients (36 women), 23 SG and 27 CG were included. The average intake of calories and protein (g) in SG pre supplementation was 1,679.22 (sd ±564.17) and 70.4 (sd ±30.10), respectively; in post supplementation the average intake was 1,865.19 calories (sd ±503.10) ($p > 0.05$) and 88.9g (sd ±24.05) of protein ($p=0.026$). In CG the average intake of calories and protein (g) pre supplementation was 1,503.84 calories (sd ±518.82) and 65.69 (sd ±21.01), respectively, and in the post supplementation it was 1445.62 calories (sd±518.80) and 72.09g (sd±26.47) of protein ($p > 0.05$ for both). After intervention, the difference between the groups was statistically different for calories (419.57; $p=0,005$) and protein (16.8g; $p=0.024$). The average daily ONS intake was 400.4 calories in SG which contributed with 25g of protein and a total of 6.2g of L-leucine. The SG maintained the %FFM during the cancer treatment, and the mean of % FFM was 63.47% (SD±6.17) pre supplementation and 65.86% (SD±7.76) post supplementation, corresponding to an increase of 2.39% after intervention ($p = 0.25$). On the other hand, in the CG, this average was 65.32% (SD±8.51) at the beginning of the study and 63.63% (SD±7.37) after intervention, with an average drop of 1.69% ($p = 0.43$) in % FFM. The mean difference in % FFM after intervention between groups was 4.08% (95% CI 1.63-6.53; $p = 0.00157$).

Conclusion: The use of a specialized ONS enriched with L-leucine in the studied population proved to be efficient for maintaining fat free mass of patients during cancer treatment and increased the intake of calories and protein even with an isocaloric intervention protocol between the two groups. The % FFM gain was significantly higher in the SG Group, highlighting the importance of including a specialized high protein ONS in nutritional intervention of cancer patients.