SINPE
Società Italiana di Nutrizione Artificiale e Metabolismo

INCREASE MALNUTRITION AWARENESS:
CHALLENGE FOR THE FUTURE

DIET- PREVENTION OF SARCOPENIA AND PRESERVATION OF SKELETAL MUSCLE MASS IN THE ELDERLY: PRELIMINARY DATA

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Background and aims

Sarcopenia and Frailty syndrome correlate with poor clinical outcomes, increased mortality. An adequate energy-protein intake and BCAA (branched-chain amino acids) bioavailability can help to preserve skeletal muscle mass even in the elderly.

Methods

We evalueted outpatients elderly who accessed to the Clinical Nutrition Unit from December 2021 to June 2023 based on Inclusion and Esclusion Criteria (≥65 years old, with BMI value of 20 - 30 kg/m2, with autonomy in daily activities, free from uncontrolled chronic pathologies and physical - cognitive - neurological disabilities).

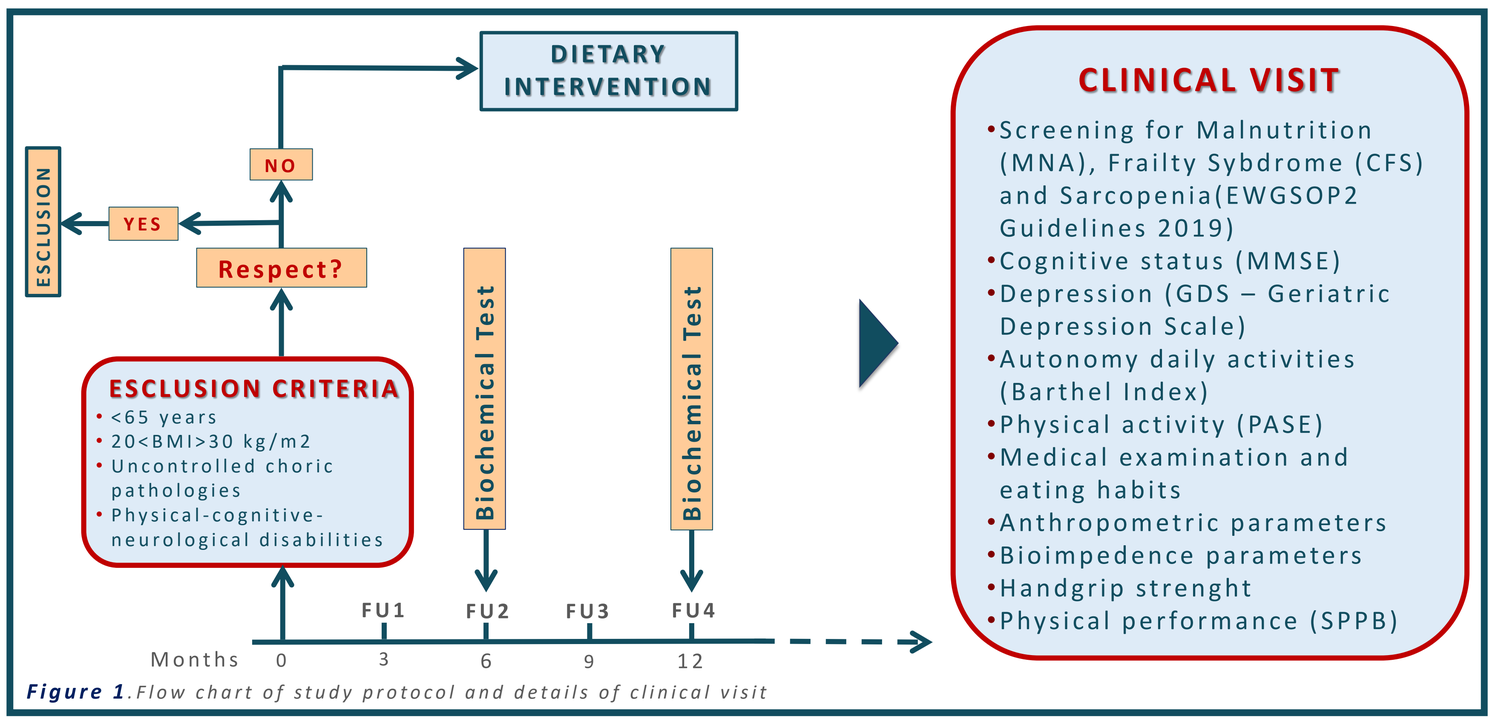

***Figure 1**. Flow chart of study protocol and details of clinical visit*

Outpatients are followed up with a reassessment of the same protocol every 3 months, for 12 months and biochemical tests every 6 months.

DIETARY INTERVENTION

The Mediterranean Diet has favorable effects on health, helping to prevent sarcopenia, even in the elderly. The Mediterranean Diet intervention provides for 25-30 Kcal/kg/day and 1-1.2 g of protein/kg/day, according to the 2022 ESPEN practical guideline in geriatrics, with protein-dietary intake redistribution in daily meals and increased daily dietary-BCAA intake.

Bromatological composition			
Energy (Kcal)	1710 ± 382	Breakfast proteins (g)	15 ± 6
Proteins (g)	81 ± 20	Lunch proteins (g)	29 ± 12
Proteins (%)	19,4 ± 2,8	Dinner proteins (g)	29 ± 10
Animal proteins (g)	41 ± 9	Leucin (mg)	6736 ± 1549
Vegetable proteins (g)	35 ± 8	Isoleucin (mg)	4429 ± 1397
Carbhohydrates (%)	55 ± 6,6	Valin (mg)	5338 ± 1577
Lipidis (%)	33 ± 3,4	Fiber (g)	30 ± 2,9

***Table 1**. Bromatological composition of Dietary Intervention (Mean and Standard Deviation)*

Results

None were malnourished or sarcopenic at baseline.

Baseline characteristics (n=44)			
Age (years)	71 ± 5	BMI (kg/m2)	26,6 ± 2,5
Female sex (%)	61,4	Waist circumference (cm)	99,0 ± 8,8
Male sex (%)	38,6	Phase Angles (°)	5,7 ± 0,6
MMSE	27,5 ± 1,3	FFM (kg)	55,0 ± 10,6
GDS	2,3 ± 2,0	FM (kg)	19,5 ± 6,4
Barthel's Index	104,7 ± 0,7	FFMI (kg/m^2)	19,6 ± 2,4
PASE	145 ± 40	ASM (kg)	19,6 ± 4,0
MNA (<17)	0	SMI (kg/m^2)	8,8 ± 1,8
SARC-F (≥4)	0	Handgrip (kg)	26,7 ± 9,9
Weight (kg)	73,3 ± 11,5	SPPB	9,8 ± 2,0

***Table 2**. Baseline characteristics (Mean and Standard Deviation)*

Greater handgrip strength is associated with daily protein intake (r=0.338; p=0.031) and increased dietary BCAA intake with greater handgrip strength and FFMI (Fat-Free Mass Index)

Correlations	Handgrip	FFMI
Protein intake	0,338**	0,202
Leucine intake	0,598**	0,522**
Isoleucine intake	0,545**	0,475**
Valine intake	0,529**	0,474**

***Table 3**. Correlarions (Pearson; ** p<0,002)*

After 6 months, we observed a reduction in weight (Δ=-0.9 kg; p=0.014), BMI (Δ=-0.3 kg/m2; p=0.032), waist circumference (Δ=-2.4 cm; p= 0.0002); with lean mass maintenance.

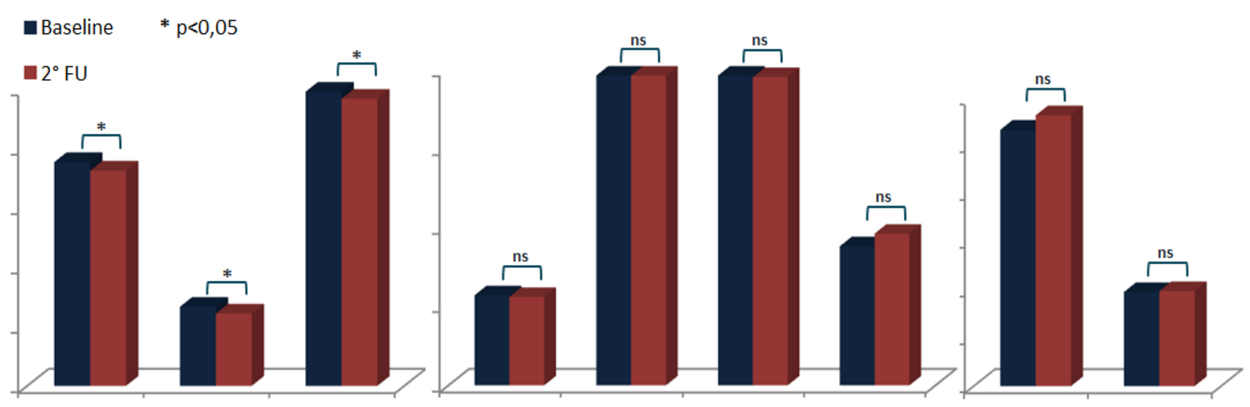

***Figure 2**. Differences between baseline and 2° FU (T-Student).*

Conclusions

By these preliminary results, healthy weight and balanced dietary intervention redistributing protein intake to daily meals and with sufficient dietary BCAA intake, could be useful in skeletal muscle mass preservation.

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