Terapia Nutrizionale in Sarcopenia

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RESPONSABILE AREA OBESITÀ E CHIRURGIA BARIATRICA

OSPEDALE MOLINETTE

SICOB FALL MEETING

LIVESURGERY

28 - 29 OTTOBRE 2024

MILANO, FONDAZIONE CARIPLO

Presidenti del Congresso **P. Gentileschi, M. A. Zappa**

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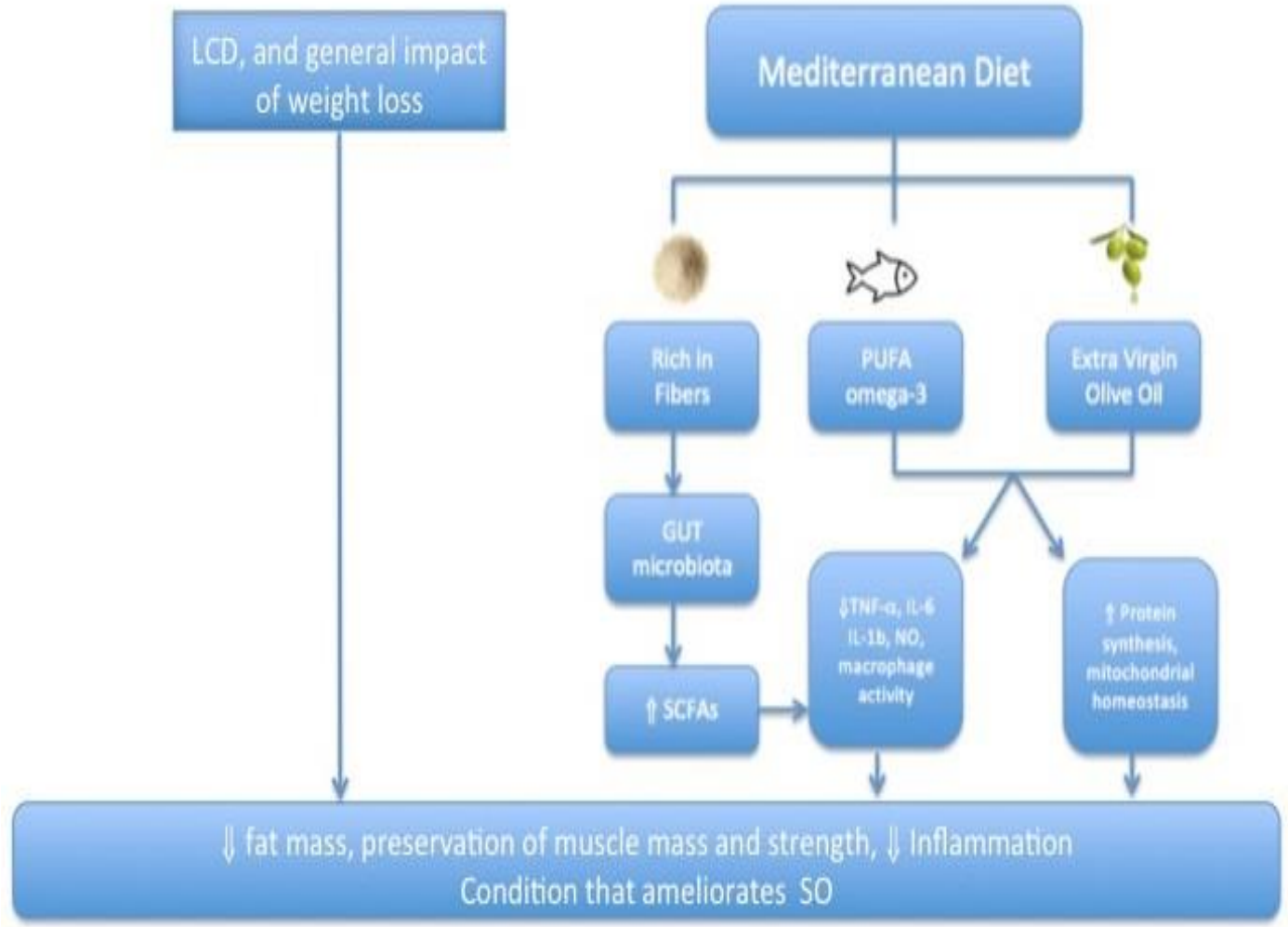
Meccanismo di azione delle diete



Supplementazione e sarcopenia

- Vitamina D
- Aminoacidi essenziali
- Whey protein

Vitamina D

- It has been reported that Vitamin D deficiency potentially linked to SO

(Di Filippo et al. Nutrients 2022)

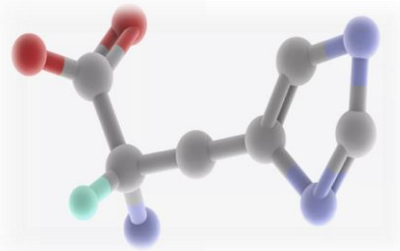
- A recent RCT assessed the effects of a 6-month vitamin D supplementation (10,000 IU three times a week) on SO indices and reported a major improvement in the appendicular lean mass vs. the placebo group

(El Hajj et al. Arch. Osteoporos. 2018)

- However, some studies were not able to confirm the beneficial impact of vitamin D supplementation on SO

(Jabbour et al. Endocrine 2022)

Aminoacidi essenziali



- SO was found to be associated with lower serum levels of branched-chain amino acids with respect Non SO (only with obesity)
  (Le Couteuret al. J. Gerontol. A Biol. Sci. Med. Sci. 2021)

- Recently, a study investigated the effect of EAA supplementation while treating SO in male adults with obesity

➢ An oral EAA mixture taken twice a day with a total of 10 g/day (leucine 1.7 g; lysine 1.3 g; isoleucine 1.3 g; valine 1.4 g; threonine 1.0 g; phenylalanine 2.0 g; methionine 1.0 g and tryptophan 0.3 g) for a period of 28 weeks

➢ The improvement in SO indices were noticed only after 28 weeks (not before)

(Zhou et al. Obes. Facts 2018)

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Table 1. Biological value of protein from different sources relative to egg white protein. The biological value of egg white protein is set at 100%.

Protein source	Biological value
Whey	104
Egg white	100
Whole milk	91
Casein	87
Beef	80
Soy	74
Wheat	54
Beans	49

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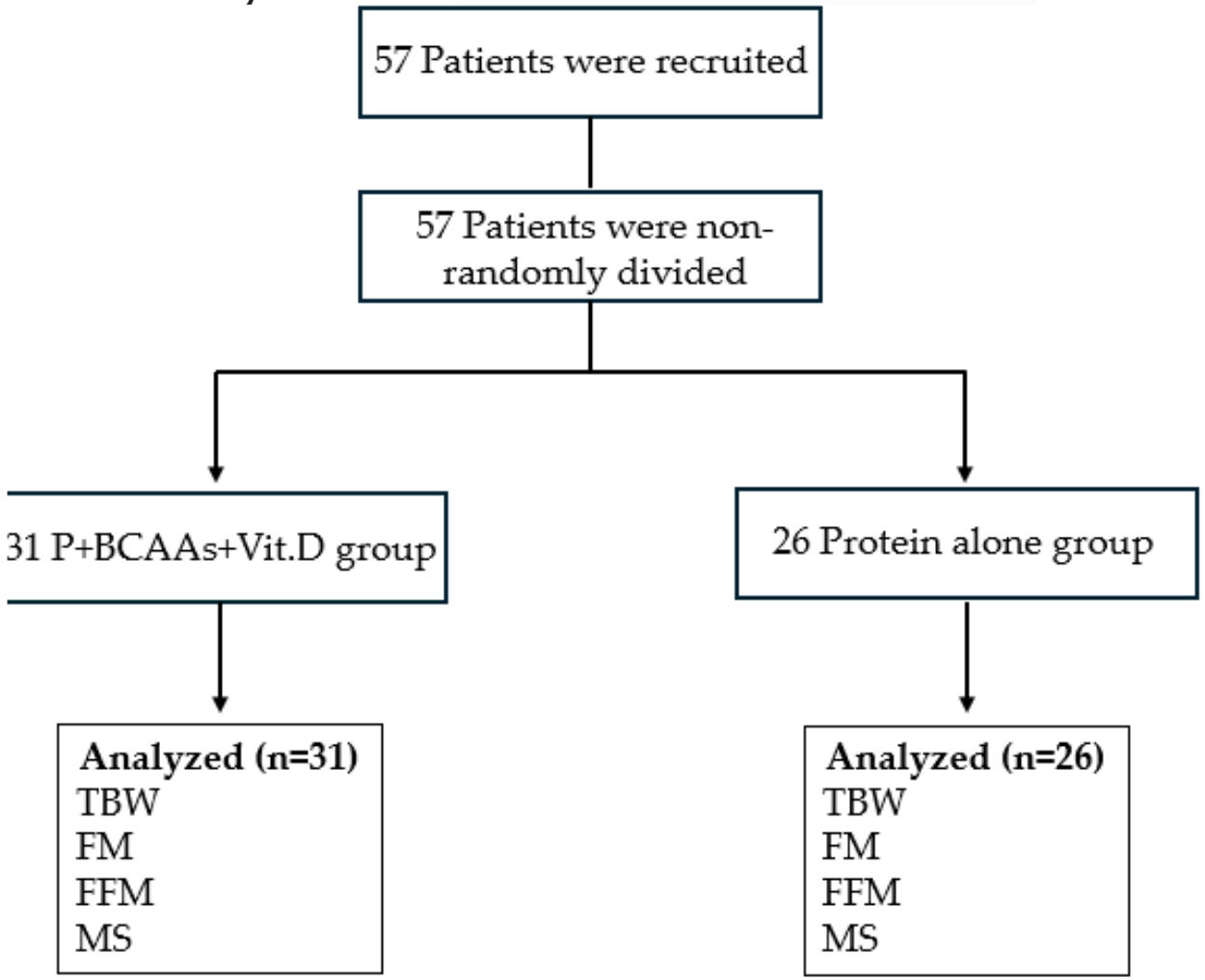
Whey protein

- Whey protein supplementation, regardless physical exercise, seems to have beneficial effects in the SO mice model (Lim et al. Nutrients 2022)
- An RCT, investigated the effects of whey protein supplementation (vs. placebo) on body composition, muscle strength and functional capacity in females with SO
- The protocol was 35 g of hydrolysed whey protein 3 times/week for 12 weeks, reported major improvement in the SO indices versus placebo group, in particular an increase in the ALM and a decrease in the total and trunk fat mass (Nabuco et al. Clin. Nutr. ESPEN 2019)
- Adding Branched-Chain Amino Acids and Vitamin D to Whey Protein Is More Effective than Protein Alone in Preserving Fat Free Mass and Muscle Strength in the First Month after Sleeve Gastrectomy (l.Schiavo,F.Rahimi et al.Nutrients Aprile 2024)

In studio multicentrico

- **Adding Branched-Chain Amino Acids and Vitamin D to Whey Protein Is More Effective than Protein**

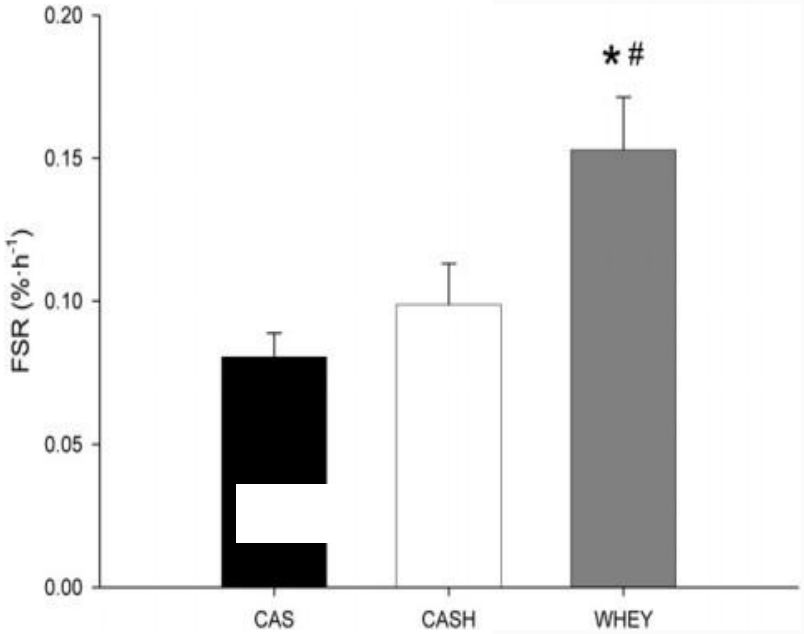


Parameter	Group	Baseline	4-Weeks Follow-Up	*p* Value *	*p* Value **
Total body weight (kg)	P+BCAA+Vit.D	116.1 ± 22.5	103.6 ± 20.6	0.026	0.994
	Protein alone	118.4 ± 22.7	105.9 ± 20.1	0.040	
BMI (kg/m^2)	P+BCAA+Vit.D	42.8 ± 5.98	38.3 ± 5.93	0.004	0.401
	Protein alone	43.3 ± 7.00	39.2 ± 5.82	0.027	
Fat Mass (kg)	P+BCAA+Vit.D	53.7 ± 11.1	43.8 ± 10.3	<0.001	0.023
	Protein alone	55.6 ± 12.4	48.2 ± 11.4	0.030	
Fat-Free Mass (kg)	P+BCAA+Vit.D	57.1 ± 13.6	54.7 ± 12.8	0.485	<0.001
	Protein alone	57.7 ± 12.2	51.1 ± 10.4	0.041	
Muscle Strenght (kg)	P+BCAA+Vit.D	39.1 ± 14.3	37.6 ± 13.4	0.675	<0.001
	Protein alone	38.6 ± 13.4	31.3 ± 12.4	0.047	

BMI = body mass index; The values are expressed as mean ± standard deviation (SD); * = 4 weeks follow-up vs. baseline; ** = 4 weeks follow-up P+BCAAs+Vit.D vs. protein alone.

Conclusions

Based on our findings, we are to support the hypothesis that P+BCAA+Vit.D supplementation is more effective than protein alone in determining FM loss and is associated with a lower decrease in FFM and MS, without interfering with clinical status in patients 1 month after SG. These results should be confirmed in a larger randomized trial with longer follow-up periods and larger sample size.



Le proteine del siero di latte stimolano l'accrescimento delle proteine muscolari postprandiali in modo più efficace rispetto alla caseina e all'idrolizzato di caseina
Questo effetto è attribuito a una combinazione di una più rapida digestione e cinetica di assorbimento del siero di latte e di un più alto contenuto di leucina.

grazie per l'attenzione

“ mentre è sufficiente un solo giorno per inventare una nuova teoria alimentare, servono poi dieci anni di prove scientifiche contrarie per cercare, spesso senza successi di cancellarla”

Ancel Keys