

AN ORAL NUTRITIONAL SUPPLEMENT REDUCES MALNUTRITION IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS

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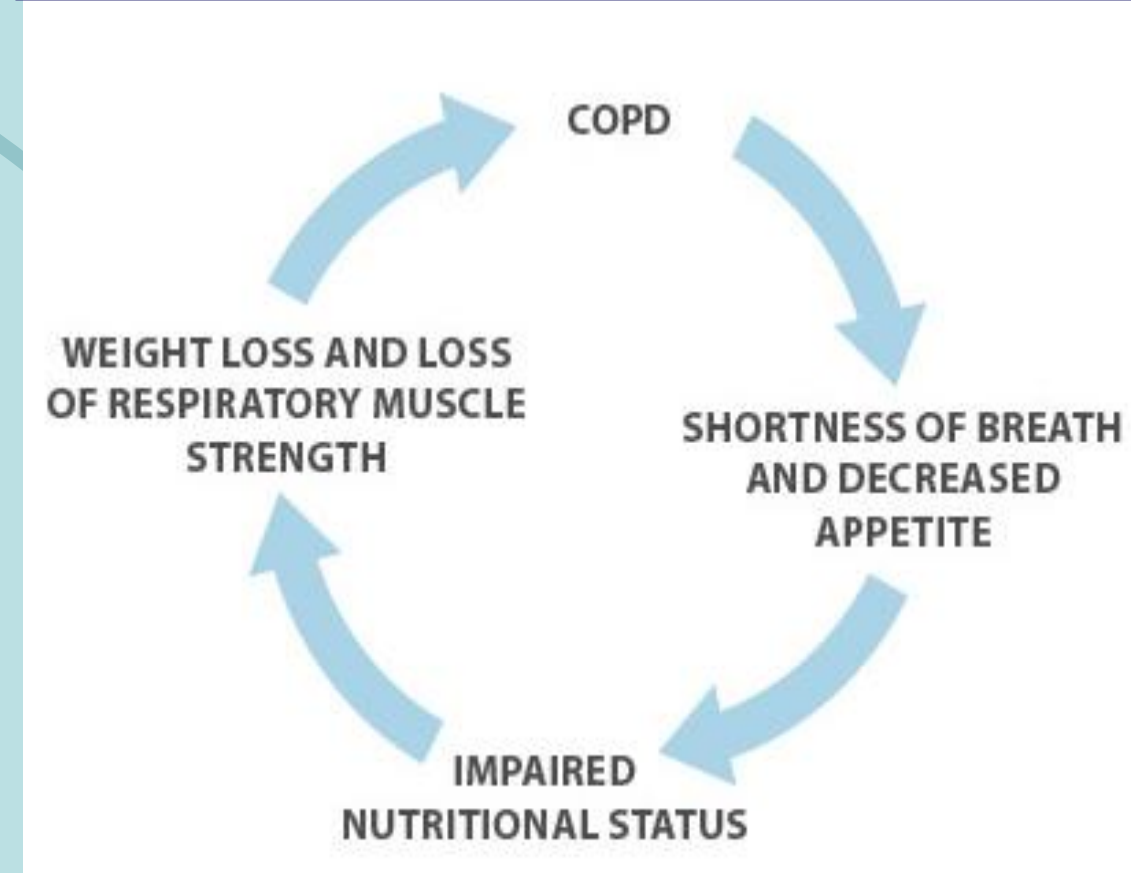


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Introduction

Nutritional depletion is one of the most common comorbidities in chronic obstructive pulmonary disease (COPD) patients. Between 19-70% of COPD patients are classified as malnourished. Weight loss, low body mass index (BMI) and/or fat-free mass index (FFMI) are associated with a worse prognosis and increased mortality risk, regardless of the severity of the impairment of lung function.

The vicious cycle of malnutrition in COPD



Objectives

We aimed to evaluate the impact of daily oral nutritional supplementation (ONS, Vitafoos®/ Fontactiv®) compared to personalized dietary advice alone on nutritional and functional status in COPD patients with recent weight loss (10% in the past 6 months or 5% in the past month), malnourished (BMI <21 kg/m² and/or FFMI <15 Kg/m² female ; <16 Kg/m² male).

Methods

ONS nutritional composition

Nutrients	Per portion (57 g)
Energy	258 Kcal
Proteins	9.4 g
Lipids	9.4 g
DHA	4.2 mg
CHO	32.5 g
FOS	2.85 g

A prospective, open-labeled, single-centre clinical trial was conducted on Peruvian COPD patients with recent weight loss or malnutrition who were randomized to cover their energy requirements (1.3 x resting energy expenditure) by ONS administered minimum twice a day and dietary advice (Study group; SG) or by personalized dietary advice alone (Control group; CG), for a 3 months period. Nutritional status was assessed by weight, BMI and FFMI determination measured by anthropometry. Respiratory and muscle function and exercise endurance were also evaluated by spirometry (Spirobank®), hand-grip strength test and 6-Minutes Walking Distance test (6MWD), respectively. Gastrointestinal tolerability and acceptance of this 100% whey protein and enriched fiber ONS were also evaluated.



Results

- ❑ A total of 95 patients (age 40.8±19.2 year-old; female 72.6%; BMI 19.9±1.6 Kg/m²) were recruited. Both groups showed equivalent weight loss during the 6 months prior to the inclusion (11.6±1.8 Kg vs. 11.2±1.4 Kg, p=0.475).
- ❑ After 3 months of intervention all patients gained weight being significantly greater in the SG (2.91±1.15 Kg vs. 1.54±1.07Kg, p<0.001)(Fig.1). BMI and Fat Free Mass Index (FFMI) showed higher increases in SG (BMI 1.10±0.41 Kg/m² vs. 0.60±0.38kg/m², p<0.001; FFMI 0.47±0.43Kg/m² vs. 0.28±0.32Kg/m², p<0.021)(Fig.2). Moreover, higher number of patients in the SG became wellnourished according to BMI (>21 Kg/m²)(69.0% vs. 33.3%, p=0,004)(Fig.3).
- ❑ Functional outcomes as lung function (FEV1), hand grip strength and exercise endurance also enhanced in both groups with a trend toward greater improvement in the SG (FEV1 4.3% vs. 1.3%, p=0.490; Strength 14.48% vs. 8.21%, p=0.095; Endurance 7.5% vs. 5.37%, p=0.364). However, when functional outcomes were evaluated in the subgroup of patients who presented low FFMI (female <15 Kg/m²; male <16 Kg/m²) at recruitment, the hand-grip strength improvement was significantly greater in the SG (15.8% vs. 5.9%, p=0.001)(Fig.4).
- ❑ The ONS was well accepted by all subjects and rated as good or very good by 89% of patients. Gastrointestinal tolerability showed no significant changes between groups (p = 0.437).

Fig. 1

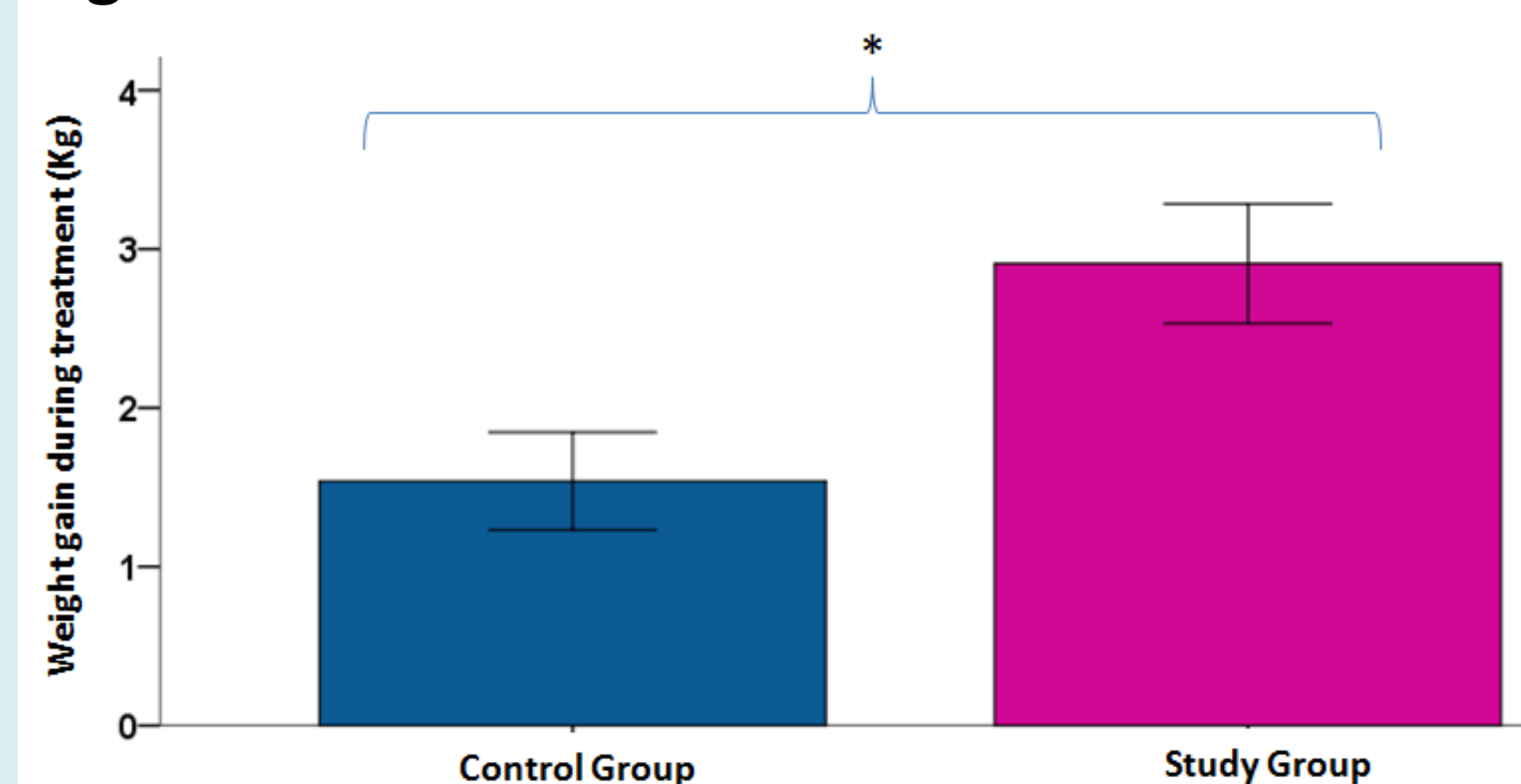


Fig. 2

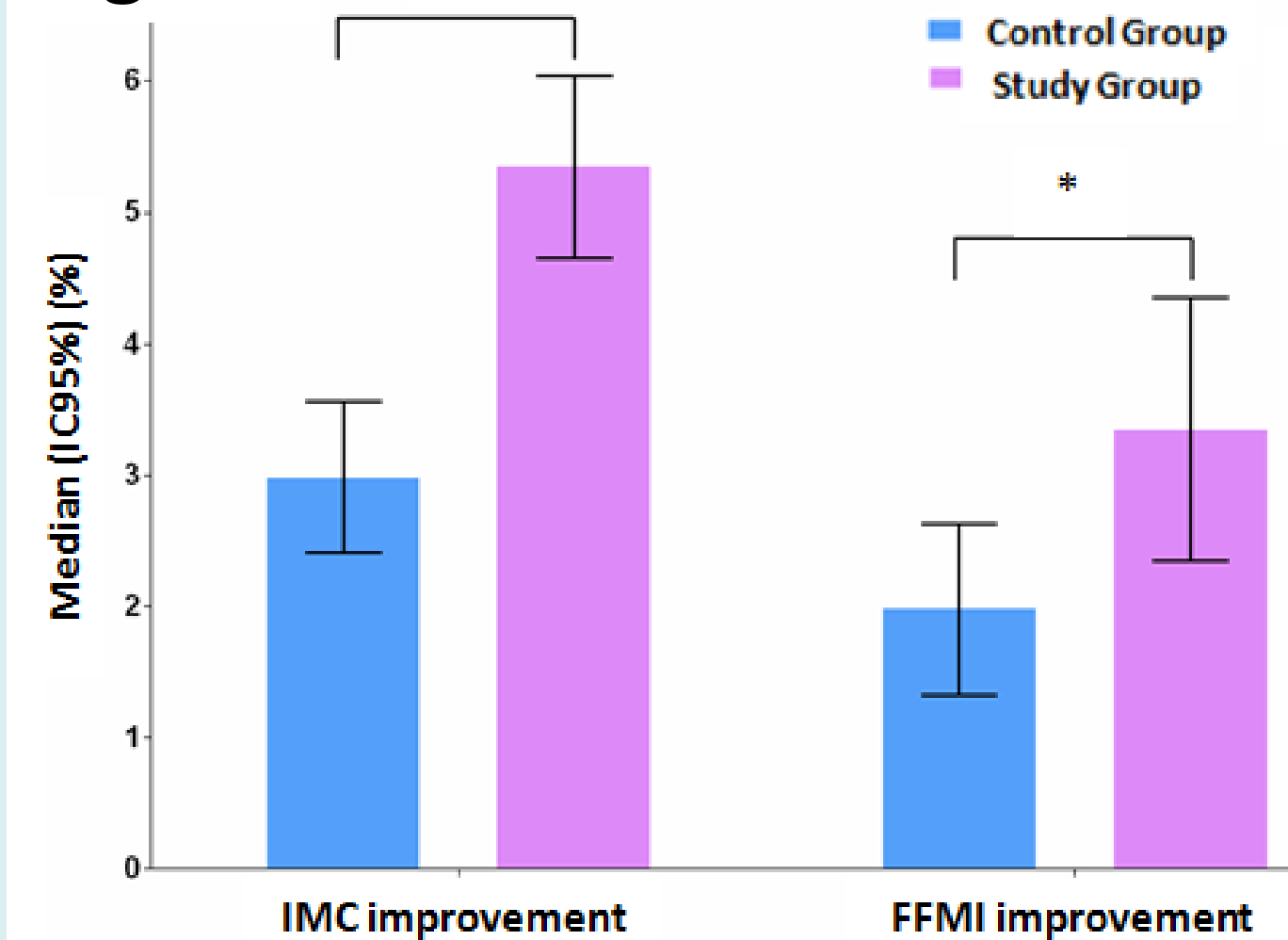
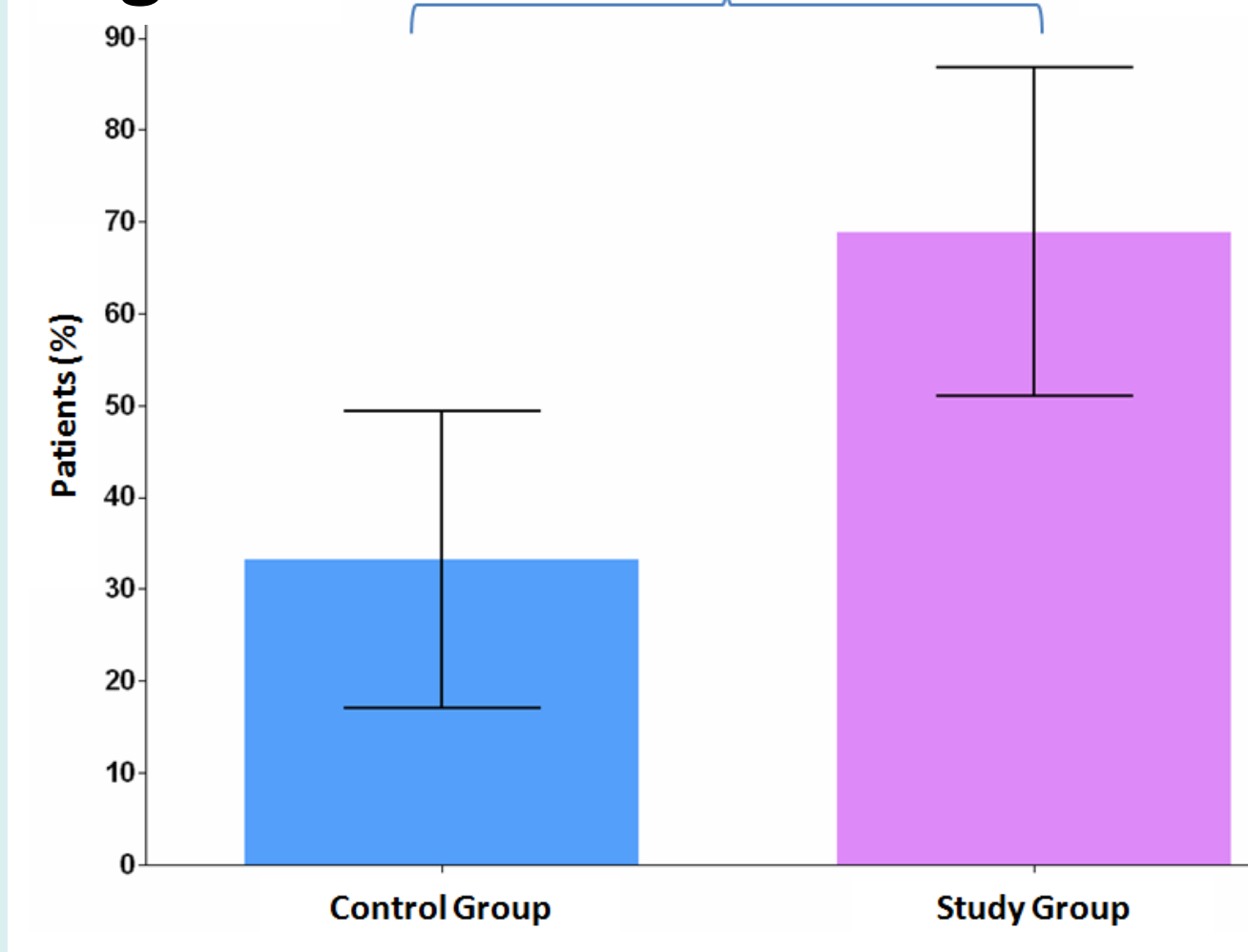
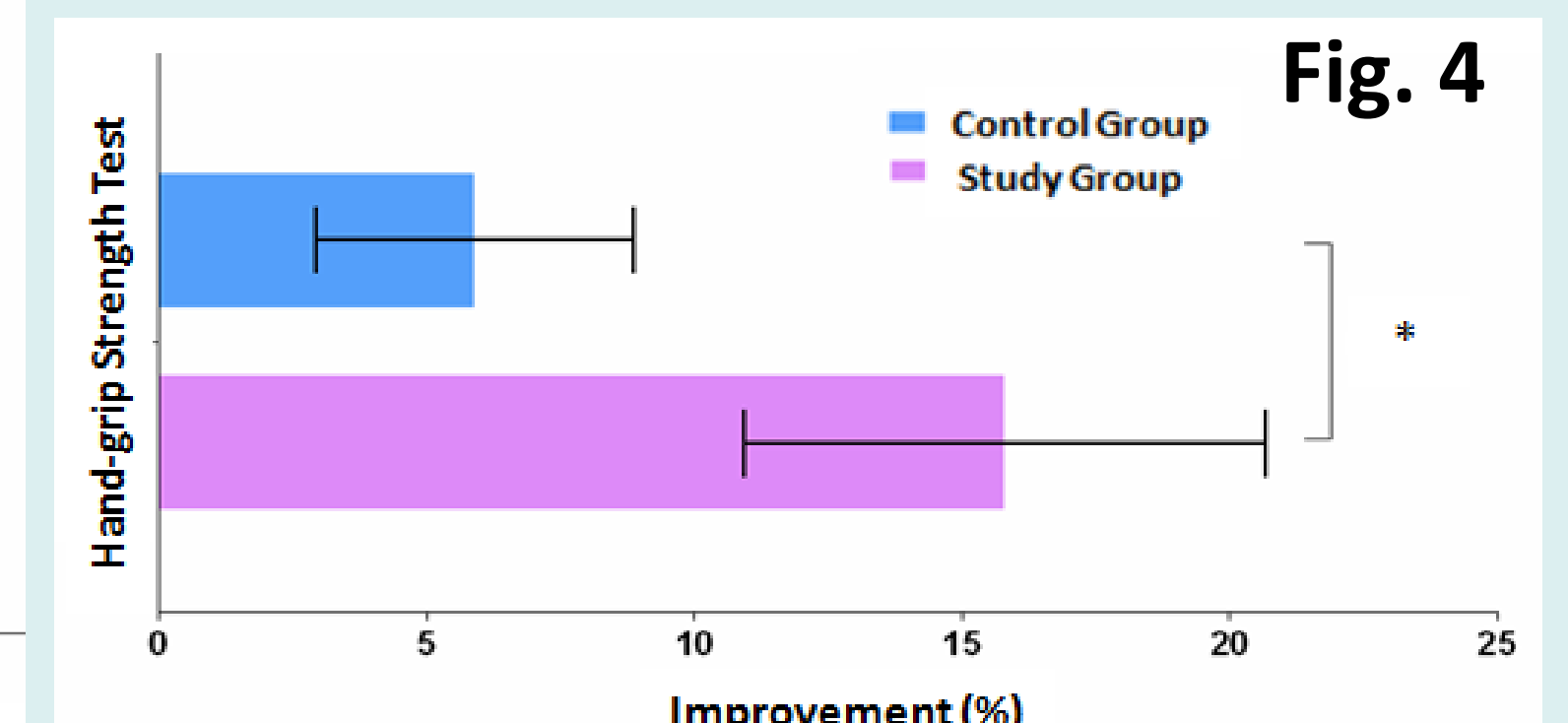


Fig. 3



	Nº portions ONS/day (mean±SD)	Energy (Kcal) from ONS (mean±SD)
At 1 m	2.76±1.32	712±340
At 3 m	1.63±1.06	678 ± 273

Fig. 4



Conclusions

Nutritional intervention, both personalized dietary advice and ONS are useful to improve nutritional and functional status in COPD patients but daily ONS (Vitafoos®/Fontactiv®) seems to be more effective to enhance weight, BMI and FFMI. ONS intervention seems to be more effective in recovering functional capacity in patients with low fat free mass. Improving functionality by this ONS is promising although further studies with longer intervention and follow-up periods are required.

References:

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