

SARCOPENIC OBESITY: CORRELATION WITH FUNCTIONAL LIMITATION AND QUALITY OF LIFE IN A METABOLIC-NUTRITIONAL AND PSYCHOLOGICAL REHABILITATION UNIT

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INTRODUCTION

Obesity/low muscle mass combination, defined as Sarcopenic Obesity (SO), due to disproportionately poor muscle strength compared to large fat mass, may lead to disability.

It may also represent an important obstacle to rehabilitation programs and to clinical outcome.

AIMS

To verify the correlation of SO with comorbidity, disability and quality of life.

METHODS

All patients hospitalized at the Metabolic, Nutritional and Psychological Rehabilitation Unit of the "Villa delle Querce" Institute (Nemi – Rome, Italy) from January to April 2011, were considered.

Fat Mass (FM) and Fat Free Mass (FFM) (bioelectrical impedance and anthropometry), muscle strength (handgrip dynamometry - HG), physical performance (Short Physical Performance Battery – SPPB and 6-min walk test – 6MWT) and comorbidity (Charlson comorbidity index score and SIO Clinical Appropriateness Chart for the Metabolic, Nutritional and Psychological Rehabilitation of Obesity - SSA-RMN-O) were measured. Adverse clinical events (ACEs) during the rehabilitation period were considered.

The diagnosis of Obesity was made through Body Mass Index (BMI) and FM (table 1) while Sarcopenia was considered using low muscle mass index, low muscle strength and low physical performance (tables 2 and 3).

Table 1. Diagnosis of Obesity.

| | Obesity |
|----------|---|
| M | BMI ≥ 30 kg/m ² and FM ≥ 25% |
| F | BMI ≥ 30 kg/m ² and FM ≥ 35% |

Table 2. Diagnosis of Sarcopenia

| | Sarcopenia |
|------------------------|------------------------------|
| FFM | FFM measured/ideal < 0.9 |
| Muscle Strength | HG < 30 Kg M HG < 20 Kg F |
| Performance | SPPB ≤ 8 |

Table 3. EWGSOP conceptual stages of sarcopenia (Cruz-Jentoft AJ et al: Age Ageing. 2010)

| | Muscle Mass | | Muscle Strength | | Performance |
|--------------------------|-------------|-----|-----------------|-----|-------------|
| Pre sarcopenia | low | | | | |
| Sarcopenia | low | and | low | or | low |
| Severe sarcopenia | low | and | low | and | low |

RESULTS

At the moment 70 patients (42 women, 28 men; 59.4 ± 11 yrs) were enrolled.

The prevalence of SO is 31.4%; greater in F (40.5%) than in M (18,5%) (table 4).

Table 4. Prevalence of Sarcopenic Obesity.

| | Obesity | SO | p |
|--------------|------------|------------|------|
| F | 25 (59.5%) | 17 (40.5%) | 0.04 |
| M | 23 (82.1%) | 5 (17.9%) | |
| Total | 48 | 22 | |

The prevalence of SO increases with age (p = 0.036); 39.4% of subjects ≥ 65 yrs old are characterized by SO, but its prevalence is important even in younger subjects (26.1%).

SO is related to greater disability (increased score to TSD-OC and decreased distance at the 6MWT).

Tendentially, in SO we found worse quality of life (SF-36), increasing comorbidity (Charlson Comorbidity index, SSA-RMN-O, drugs consumption) and ACEs (table 5).

Table 5. Correlation between SO, functional limitation and psychological status.

| | Obesity | SO | p | |
|--|--------------------|------|------|-----|
| TSD-OC (%) | 58.6 | 73.0 | 0.01 | |
| 6MWT [distance (m) measured/expected] | 0.46 | 0.25 | 0.05 | |
| SF-36 | PH | 31.0 | 24.4 | 0.1 |
| | MH | 32.7 | 27.6 | 0.3 |
| | Total score | 32.1 | 26.1 | 0.1 |
| Charlson Comorbidity Index | 2.6 | 2.6 | 0.9 | |
| SSA-RMN-O (pts) | 39.7 | 42.3 | 0.3 | |
| ACEs (n) | 0.7 | 1.2 | 0.1 | |
| Drugs (n) | 6.5 | 8.1 | 0.02 | |

CONCLUSION

SO presents a high prevalence not only in elderly subjects. Compared with "pure" obesity, SO is characterized by an increased degree of disability and comorbidity and a worse quality of life.