# XXVIII IFSO World Congress

9-12 September 2025 | Santiago, Chile

## ASSOCIATION BETWEEN LOW MUSCLE MASS AND METABOLIC DYSFUNCTION-ASSOCIATED STEATOTIC LIVER DISEASE (MASLD) SEVERITY IN PATIENTS WITH SEVERE OBESITY


**Presenter**

**Luis Ocaña-Wilhelmi (Spain)**


**Lecture Time**

**16:50 - 16:55**

1530 - FREE PAPERS 16: MAFLD/ILEAL SURGERY (ID 85)

Session Type

Rapid Fire

Date

Fri, 12.09.2025

Session Time

16:30 - 18:00

Room

Hall A

IFSO 2025 Santiago

Combined Therapies, The Dawn of a New Era

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# Disclosure Slide



| | |
|---|---|
| | No, nothing to disclose |
| | Yes, please specify: |

## Background

Obesity and sarcopenia are conditions frequently associated with metabolic alterations such as metabolic dysfunction-associated steatotic liver disease (MASLD). This study analyzes the relationship between **skeletal muscle mass (SMM) levels and the severity of MASLD** in individuals living with obesity, emphasizing the high prevalence of low muscle mass in this population.

## Objectives

To determine the association between low muscle mass (as defined by SMM criteria) and the severity of MASLD, using statistical analysis.

## Methods

This cross-sectional study included **75 individuals classified based on SMM** (0: normal muscle mass; 1: low muscle mass). **MASLD was classified into three categories** (1, 2, and 3) based on clinical data. A contingency table was used to analyze the distribution of MASLD across SMM groups, and Fisher's exact test was applied to assess statistical significance.

# Results

Of the 75 participants, 100% presented with obesity (BMI >30) and sarcopenia risk. **Low muscle mass was observed in 70,8% of the population**, demonstrating its high prevalence. Despite this, **sarcopenic obesity** (defined by ESPEN/EASO) was detected in only **4.5%** of participants, while **dynapenia** (reduced handgrip strength) was also identified in **4.5%**. **High fat mass** was present in **92%** of individuals, indicating a predominant adiposity profile.Functional performance assessments showed limited capacity, with only **3%** meeting the criteria for the **30-second chair stand test** and **1.9%** for the **5STS test** (table 1).

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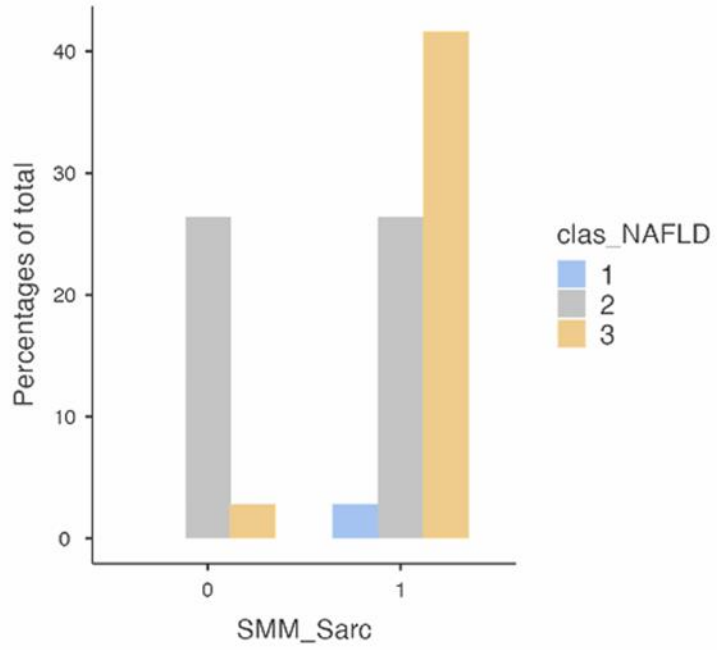
**Table 1. Sarcopenic Obesity criteria**

| Variable | Category | Count (n) | Percentage (%) |
|---|---|---|---|
| Sarcopenic Obesity ESPEN/EASO | No | 63 | 95.5% |
| | Yes | 3 | 4.5% |
| ESPEN/EASO Crieteria | | | |
| Screening: Obesity by BMI (BMI > 30) and sarcopenia risk. | Yes | 65 | 100.0% |
| 1. Low Muscle Mass (SMM/KG) | No | 21 | 28.4% |
| | Yes | 53 | 71.6% |
| 2. Functional tests (one of the three) | | | |
| Dynapenia (Handgrip Strength) | No | 64 | 95.5% |
| | Yes | 3 | 4.5% |
| 30-Second Chair Stand Test | No | 64 | 97.0% |
| | Yes | 2 | 3.0% |
| 5STS (Five Times Sit-to-Stand) | No | 52 | 98.1% |
| | Yes | 1 | 1.9% |
| 3. High Fat Mass (FM%) | No | 6 | 8.0% |
| | Yes | 69 | 92.0% |

**Table 2. NAFLD Clasificación**

| NAFLD Classification | Normal Muscle Mass | Low Muscle Mass | % of Total |
|---|---|---|---|
| Grade 1 | 0 (0.0%) | 2 (2.8%) | 2.8% |
| Grade 2 | 19 (26.4%) | 19 (26.4%) | 52.8% |
| Grade 3 | 2 (2.8%) | 30 (41.7%) | 44.4% |
| Total | 21 (29.2%) | 51 (70.8%) | 100.0% |

**Figure 1: NAFLD classification by low or high muscle mass.**

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## Results

**Among those with low muscle mass, 58.8% had severe MASLD (grade 3), compared to 9.5% of individuals with normal muscle mass** (figure 1). The association between low muscle mass and MASLD severity was statistically significant (Fisher's exact test, $p < 0.001$) (table 2).

## Conclusions

.- **Low muscle mass is significantly associated with greater severity of MASLD in individuals living with obesity.**

.- **These findings highlight the importance of assessing muscle mass to better understand and manage metabolic risks in this population.**