

INTRODUCTION

- Malnutrition is common in patients with Chronic Obstructive Pulmonary Disease (COPD).
- Muscle thickness has been suggested as a parameter for malnutrition
- We explored the association between fat free mass index (FFMI), muscle thickness of biceps brachii (BB) and rectus femoris (RF), and malnutrition in advanced COPD patients

METHODS

- Patients were included at the start of a pulmonary rehabilitation program
- Malnutrition was defined as PG-SGA Stage B or C
- FFMI (kg/m^2) was estimated with BIA 101[®]
- Muscle thickness of BB and RF was measured with BodyMetrix[®] ultrasound device
- Association between FFMI and RF and BB thickness, and malnutrition was analyzed with uni- and multivariate logistic regression.
- Multivariate analysis corrected for sex, age (years) and GOLD-stadia

RESULTS

- 27 COPD patients (age 64 ± 8.1 years; female 60%; GOLD-stage 3; interquartile range=3-4; BMI $27 \pm 6.6 \text{ kg}/\text{m}^2$) were included in analyses
- Multivariate analysis: FFMI and BB thickness were significantly associated with malnutrition

ASSOCIATION BETWEEN MUSCLE THICKNESS, FAT-FREE MASS AND MALNUTRITION IN PATIENTS WITH COPD: AN EXPLORATORY STUDY

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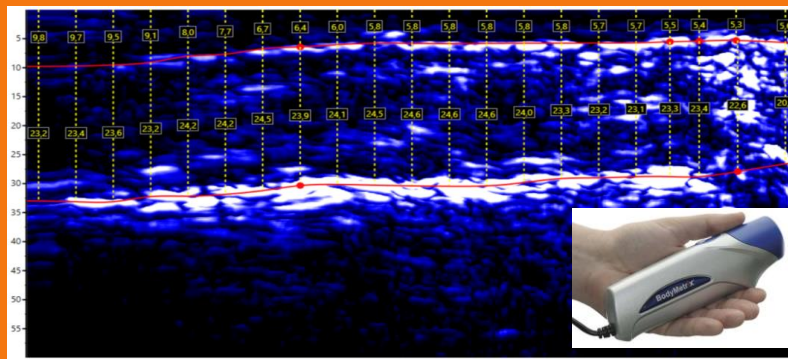


Figure 1: Image of Biceps Brachii with BodyMetrix

CONCLUSION

In patients with advanced COPD, low FFMI and low BB muscle thickness were robustly associated with increased odds of being malnourished



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Table 1: Logistic regression analyses of FFMI, BB and RF thickness, and malnutrition

| | p-value | OR [95%CI] |
|-----------------------|---------|---------------------|
| Univariate analysis | | |
| FFMI | 0.030* | 0.70 [0.52-0.97] |
| m BB thickness | 0.023* | 0.83 [0.70-0.97] |
| m RF thickness | 0.040* | 0.79 [0.63-0.99] |
| Multivariate analysis | | |
| FFMI | 0.040* | 0.59 [0.35-0.98] |
| m BB thickness | 0.036* | 0.73 [0.55-0.98] |
| m RF thickness | 0.090* | 0.76 [0.56-1.04] |

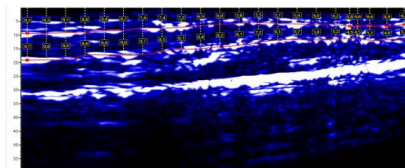


Figure 2: Image of Rectus Femoris with BodyMetrix

REFERENCE

Nijholt W, Beek L ter, Hobbelen JSM, van der Vaart H, Wempe JB, van der Schans CP, et al. The added value of ultrasound muscle measurements in patients with COPD: An exploratory study. Clin Nutr ESPEN 2019;30:152-8



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