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±6.6kg/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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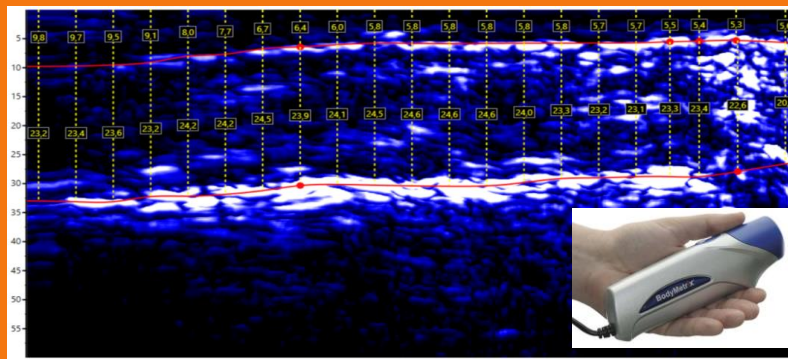
Figure 1: Image of Biceps Brachii with BodyMetrix

CONCLUSION

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

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

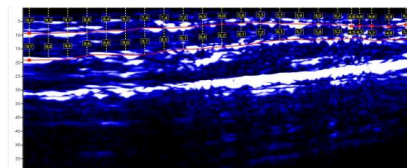|	p-value	OR [95%CI]
Univariate analysis		
FFMI	0.030*	0.70 [0.52-0.97]
m BB thickness	0.023*	0.83 [0.70-0.97]
m RF thickness	0.040*	0.79 [0.63-0.99]
Multivariate analysis		
FFMI	0.040*	0.59 [0.35-0.98]
m BB thickness	0.036*	0.73 [0.55-0.98]
m RF thickness	0.090*	0.76 [0.56-1.04]

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