Skeletal muscle adiposity and outcomes in candidates for lung transplantation: A Lung Transplant Body Composition Cohort Study

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Supplementary Appendix

Table S1: Baseline characteristics by tertile of mean thigh muscle attenuation

	Lowest Tertile of Thigh Muscle Attenuation (N=92)	Middle Tertile of Thigh Muscle Attenuation (N=92)	Highest Tertile of Thigh Muscle Attenuation (N=92)
Age, years	64 (58-68)	62 (52-66)	55 (40-63)
Male gender	50 (54)	54 (59)	53 (58)
Diagnosis*			
COPD	37 (40)	30 (33)	11 (12)
Interstitial lung disease	44 (48)	46 (50)	43 (47)
Sarcoidosis	5 (5)	3 (3)	6 (7)
Cystic fibrosis	3 (3)	5 (5)	21 (23)
PAH	3 (3)	5 (5)	5 (5)
Other	0 (0)	3 (3)	5 (5)
Race*			
White	27 (29)	32 (35)	31 (34)
African American	1 (1)	6 (7)	4 (4)
Other	0 (0)	1 (1)	3 (3)
Height, cm	170.2 (161.3-177.8)	172.4 (162.6-177.8)	169.5 (162.6-175.3)
Weight, kg	80.9 (69.4-90.7)	72.4 (61.0-87.8)	68.0 (55.8-84.0)
BMI, kg/m2	27.4 (24.5-30.8)	25.3 (21.9-29.0)	23.2 (21.2-27.6)
BMI Category			
<18.5	1 (1)	2 (2)	8 (9)
18.5-25	26 (28)	43 (47)	45 (49)
25-30	35 (38)	30 (33)	29 (32)
30-35	28 (30)	16 (17)	10 (11)
>35	2 (2)	1 (1)	0 (0)
Forced Vital Capacity (L)	2.0 (1.5-2.8)	2.0 (1.5-2.8)	2.0 (1.6-2.6)
Thigh Muscle Area (cm^2)	188.3 (159.8-218.6)	191.8 (155.4-223.9)	186.4 (155.7-255.4)
Center			
Center A	37 (40)	32 (35)	35 (38)
Center B	19 (21)	22 (24)	25 (27)
Center C	36 (39)	38 (41)	32 (35)

Continuous variables reported as median (interquartile range)
Categorical variables presented as N (%)
Definition of abbreviations: COPD: chronic obstructive pulmonary disease; PAH: pulmonary arterial hypertension; BMI: body mass index.
*Race missing on 171 subjects, diagnosis missing on 1 subject.

Table S2: Baseline characteristics by tertile of mean abdominal muscle attenuation.

	Lowest Tertile of Abdominal Muscle Attenuation (N=101)	Middle Tertile of Abdominal Muscle Attenuation (N=101)	Highest Tertile of Abdominal Muscle Attenuation (N=100)
Age, years	64 (58-68)	61 (55-67)	54 (40-63)
Male gender	44 (44)	56 (55)	66 (66)
Diagnosis			
COPD	35 (35)	31 (31)	19 (19)
Interstitial lung disease	57 (56)	39 (39)	41 (41)
Sarcoidosis	3 (3)	6 (6)	5 (5)
Cystic fibrosis	3 (3)	7 (7)	22 (22)
PAH	3 (3)	3 (3)	7 (7)
Other	0 (0)	5 (5)	5 (5)
Race			
White	25 (25)	37 (37)	34 (34)
African American	1 (1)	6 (6)	4 (4)
Other	2 (2)	1 (1)	2 (2)
Height, cm	167.6 (160.5-175.3)	170.9 (162.3-177.8)	171.5 (165.1-176.7)
Weight, kg	78.6 (68.9-88.6)	73.0 (60.8-87.1)	69.6 (58.2-81.8)
BMI, kg/m2	28.0 (24.4-30.3)	25.3 (22.7-29.3)	23.2 (20.8-26.3)
BMI Category			
<18.5	1 (1)	5 (5)	10 (10)
18.5-25	29 (29)	42 (42)	52 (52)
25-30	40 (40)	31 (31)	32 (32)
30-35	28 (28)	23 (23)	6 (6)
>35	3 (3)	0 (0)	0 (0)
Forced Vital Capacity (L)	1.8 (1.5-2.5)	2.1 (1.6-2.6)	2.0 (1.6-2.9)
Center			
Center A	48 (48)	39 (39)	26 (26)
Center B	26 (26)	24 (24)	25 (25)
Center C	27 (27)	38 (38)	49 (49)

Continuous variables reported as median (interquartile range)
Categorical variables presented as N (%)
Definition of abbreviations: COPD: chronic obstructive pulmonary disease; PAH: pulmonary arterial hypertension; BMI: body mass index.

*Missing: Race for 190 subjects, Diagnosis for 1 subject.

Table S3: Association between muscle attenuation and thigh IMAT index with six-minute walk distance in subgroups

	N	Change in 6MWD (meters) per ½ SD decrease in thigh MMA	95% CI	P	P for Interaction	N	Change in 6MWD (meters) per doubling IMAT index	95% CI	P	P for Interaction	N	Change in 6MWD (meters) per ½ SD decrease in abdominal MMA	95% CI	P	P for Interaction
Diagnosis					0.40					0.60					0.74
Obstruction	80	-15	-25 to -5	0.003		63	-18	-32 to -4	0.009		87	-25	-24 to -5	0.002	
PH	13	-33	-61 to -6	0.02		8	3	-38 to 45	0.88		13	-17	-44 to 11	0.24	
CF/Bronchiectasis	35	8	-10 to 27	0.37		19	-12	-24 to 1	0.06		40	8	-13 to 28	0.47	
Pulmonary Fibrosis	147	-18	-26 to -10	<0.001		100	-16	-28 to -5	0.006		161	-16	-25 to -8	<0.001	

Models adjusted for age, sex, forced vital capacity, and muscle index with random effect for center.

***Definition of abbreviations**:* MMA: mean muscle attenuation; 6MWD: six minute walk distance; PH: pulmonary hypertension; CF: cystic fibrosis; CI: confidence interval; SD: standard deviation; IMAT: intramuscular adipose tissue index

Figure S1: Axial computed tomography (CT) images at the level of the (A) mid-thigh, with identification of (B) muscle area, and (C) intramuscular adipose tissue. Axial CT images at the level of the (D) abdomen at the L4/L5 vertebral level, with identification of (E) abdominal muscle area.

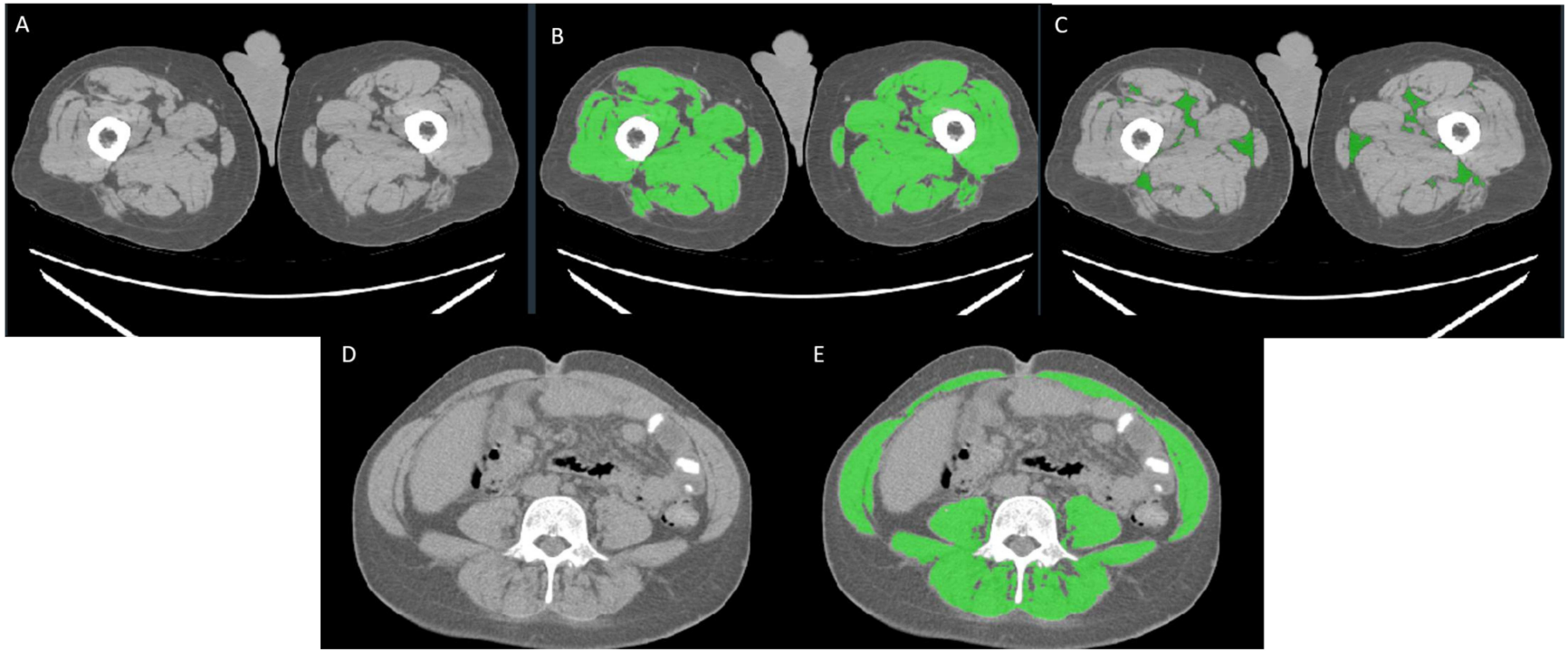

Figure S2: Flowchart for patient inclusion