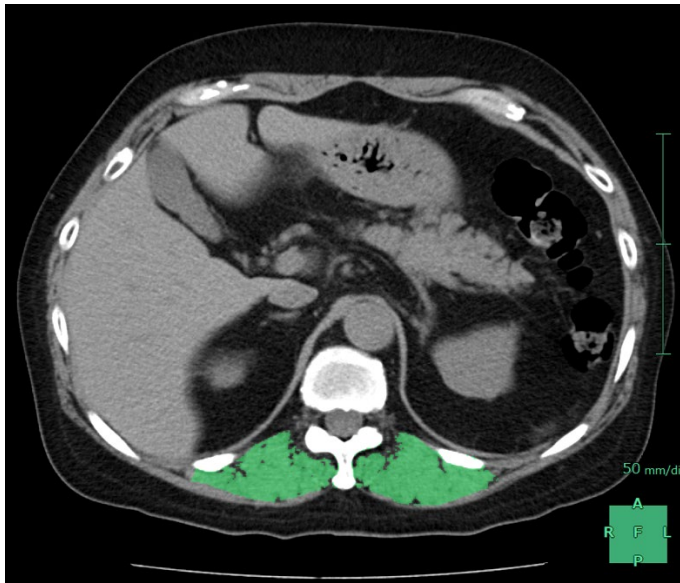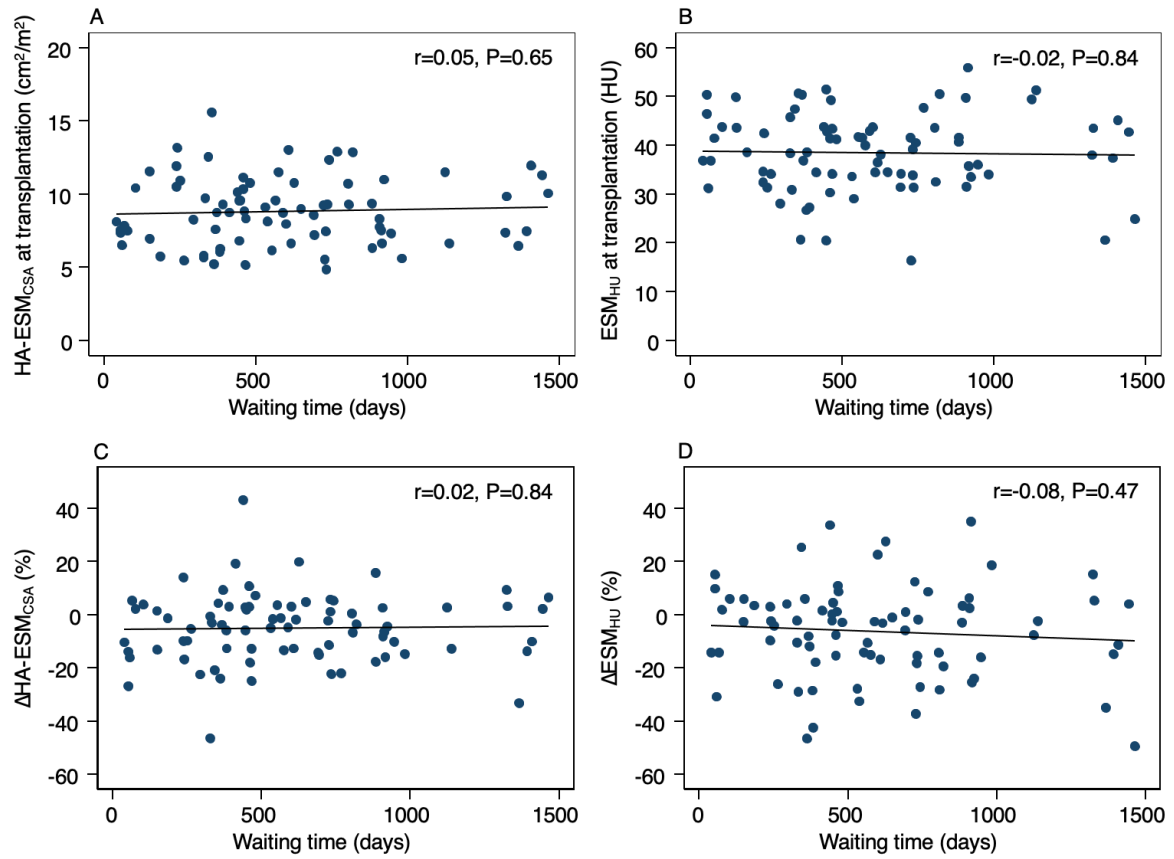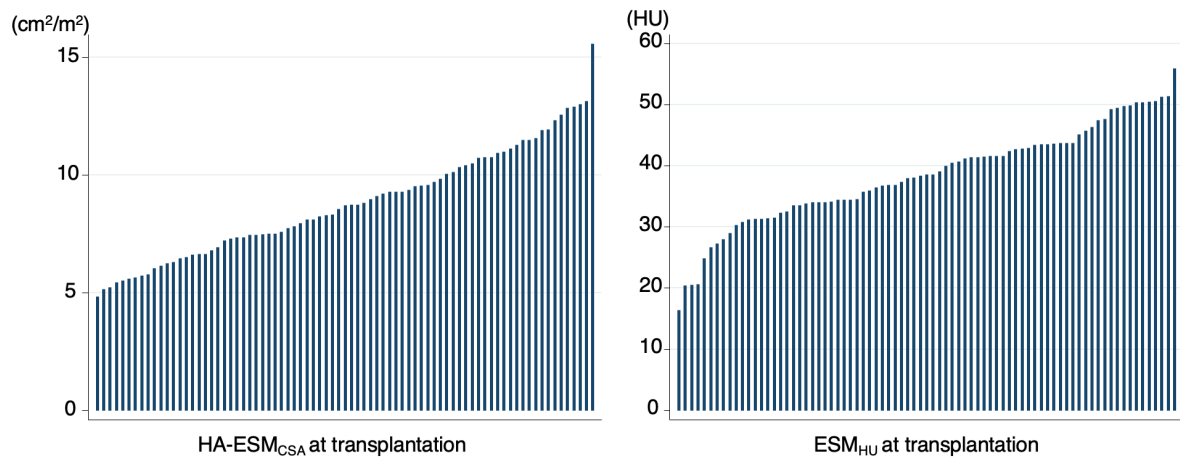**Figure S1.**

For the evaluation of the skeletal muscle mass, the cross-sectional area of the bilateral erector

spinae muscles (ESMs) was measured at the 12th thoracic level with the -29 to 150 Hounsfield units

(HU) using computed tomography images (highlighted in green). The mean HU of bilateral ESMs

was defined as the skeletal muscle quality.

Figure S2.

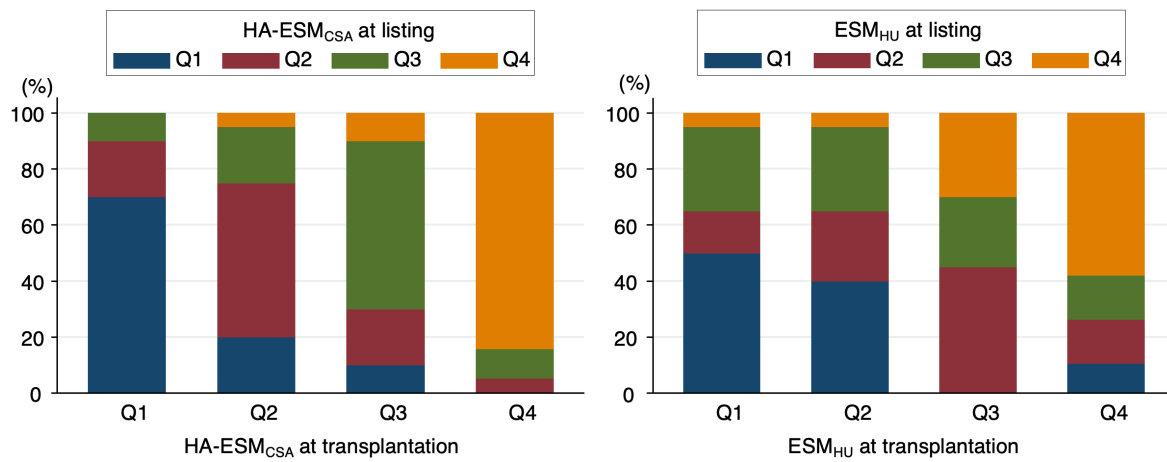There were no significant correlations between the waiting time and skeletal muscle variables, including the height-adjusted cross-sectional area of the erector spinae muscle (HA-ESM$_{CSA}$) at transplantation (A), Hounsfield units of the erector spinae muscle (ESM$_{HU}$) at transplantation (B), percentage changes during the waiting time in HA-ESM$_{CSA}$ (ΔHA-ESM$_{CSA}$) (C) and ESM$_{HU}$ (ΔESM$_{HU}$) (D).

Figure S3.

The distribution of the height-adjusted cross-sectional area of the erector spinae muscle (HA-ESM$_{CSA}$) at transplantation and Hounsfield units (HU) of the erector spinae muscle (ESM$_{HU}$) at transplantation. The median HA-ESM$_{CSA}$ and ESM$_{HU}$ at transplantation were 8.7cm^2/m^2 (interquartile range [IQR], 6.9–10.5) and 38.6 HU (IQR, 33.6–43.6), respectively.

Figure S4.

Changes in the height-adjusted cross-sectional area of the erector spinae muscle (HA-ESM$_{CSA}$) and Hounsfield units of the erector spinae muscle (ESM$_{HU}$) during the waiting time based on quartiles (Q). Changes from the second (Q2) or third quartile (Q3) at listing to the first quartile (Q1) at transplantation were observed in six (30%) patients in the HA-ESM$_{CSA}$. Changes in quartiles in the ESM$_{HU}$ were more frequent than those in the HA-ESM$_{CSA}$.

Table S1. Association of skeletal muscle variables with 1-year survival from logistic regression analysis

	Univariate model			Multivariable model †		
	OR	95% CI	P value	OR	95% CI	P value
HA-ESM$_{CSA}$ at transplantation	1.31	0.92, 1.88	0.13	1.27	0 .76, 2.12	0.36
ΔHA-ESM$_{CSA}$	1.03	0.98, 1.09	0.27	1.04	0.97, 1.11	0.29
ESM$_{HU}$ at transplantation	0.98	0.90, 1.08	0.70	1.00	0.90, 1.11	0.98
ΔESM$_{HU}$	1.01	0.97, 1.06	0.58	1.01	0.96, 1.07	0.62

OR, odds ratio; CI, confidence interval

HA-ESM$_{CSA}$, height adjusted cross-sectional area of the erector spinae muscle

ESM$_{HU}$, Hounsfield units of the erector spinae muscle

The group with relatively better conditions (the second quartile to the fourth quartile) for each skeletal muscle variable are the references.

† Adjusted for age at transplantation, sex, BMI at transplantation, glucocorticoids use before transplantation, type of transplantation

Table S2. Association of skeletal muscle variables with 5-year survival from Cox proportional hazard model: complete case analysis

	Univariate model			Multivariable model †		
	HR	95% CI	P value	HR	95% CI	P value
HA-ESM$_{CSA}$ at transplantation	0.18	0.02, 1.43	0.11	0.20	0 .02, 1.60	0.13
ΔHA-ESM$_{CSA}$	0.62	0.14, 2.78	0.53	0.52	0.11, 2.51	0.41
ESM$_{HU}$ at transplantation	0.78	0.21, 2.85	0.71	0.26	0.05, 1.39	0.12
ΔESM$_{HU}$	0.74	0.20, 2.67	0.64	0.58	0.15, 2.19	0.42

CI, confidence interval; ESM$_{HU}$, Hounsfield units of the erector spinae muscle; HA-ESM$_{CSA}$, height-adjusted cross-sectional area of the erector spinae muscle; HR, hazard ratio

The group with relatively better conditions (the second quartile to the fourth quartile) for each skeletal muscle variable are the references.

† Adjusted for age at transplantation, sex, BMI at transplantation, glucocorticoids use before transplantation, type of transplantation

Table S3. Association of skeletal muscle variables with 1-year survival from logistic regression analysis: complete case analysis

	Univariate model			Multivariable model †		
	OR	95% CI	P value	OR	95% CI	P value
HA-ESM$_{CSA}$ at transplantation	1.51	1.06, 2.17	0.02	1.53	0 .91, 2.56	0.11
ΔHA-ESM$_{CSA}$	1.04	0.98, 1.10	0.20	1.04	0.98, 1.11	0.22
ESM$_{HU}$ at transplantation	0.99	0.90, 1.09	0.85	1.02	0.91, 1.13	0.77
ΔESM$_{HU}$	1.00	0.96, 1.05	0.88	1.00	0.95, 1.05	0.96

OR, odds ratio; CI, confidence interval

HA-ESM$_{CSA}$, height adjusted cross-sectional area of the erector spinae muscle

ESM$_{HU}$, Hounsfield units of the erector spinae muscle

The group with relatively better conditions (the second quartile to the fourth quartile) for each skeletal muscle variable are the references.

† Adjusted for age at transplantation, sex, BMI at transplantation, glucocorticoids use before transplantation, type of transplantation

Table S4. Association of skeletal muscle variables with MV duration, ICU and Hospital length of stay, and 6MWD at discharge from linear regression analyses: complete case analysis

	Univariate model			Multivariable model †		
	B	95% CI	P value	B	95% CI	P value
HA-ESM$_{CSA}$ at transplantation						
MV days	6.58	-0.39, 13.55	0.06	5.46	-1.91, 12.83	0.14
ICU length of stay	9.49	1.71, 17.27	0.02	9.56	1.79, 17.32	0.02
Hospital length of stay	36.94	9.28, 64.60	0.01	43.39	14.78, 71.99	0.003
6MWD at discharge	-55.80	-122.06, 10.45	0.10	-80.50	-150.57, -10.44	0.03
ΔHA-ESM$_{CSA}$						
MV days	5.51	-1.50, 12.53	0.12	7.73	0.74, 14.71	0.03
ICU length of stay	5.21	-2.78, 13.19	0.20	8.09	0.52, 15.65	0.04
Hospital length of stay	12.64	-16.12, 41.40	0.38	19.52	-9.42, 48.45	0.18

6MWD at discharge	-65.28	-131.03, 0.46	0.05	-63.46	-133.25, 4.33	0.06
ESM$_{HU}$ at transplantation						
MV days	6.05	-0.95, 13.04	0.09	4.27	-3.14, 11.68	0.26
ICU length of stay	7.21	-0.69, 15.12	0.07	3.31	-4.74, 11.35	0.42
Hospital length of stay	23.82	-4.58, 52.21	0.10	10.50	-19.76, 40.75	0.50
6MWD at discharge	2.00	-64.33, 68.34	0.95	10.94	-61.17, 83.04	0.76
ΔESM$_{HU}$						
MV days	3.50	-3.58, 10.58	0.33	1.81	-5.25, 8.87	0.61
ICU length of stay	6.01	-1.95, 13.97	0.14	3.15	-4.46, 10.76	0.41
Hospital length of stay	8.96	-19.88, 37.79	0.54	1.50	-27.22, 30.22	0.92
6MWD at discharge	30.51	-36.70, 97.72	0.37	9.62	-60.78, 80.02	0.79

CI, confidence interval; ICU, intensive care unit; ESM$_{HU}$, Hounsfield units of the erector spinae muscle; HA-ESM$_{CSA}$, height-adjusted cross-sectional area of the erector spinae muscle; MV, mechanical ventilation; 6MWD, 6-minute walk distance

B represents the unstandardized coefficients.

The group with relatively better conditions (the second quartile to the fourth quartile) for each skeletal muscle variable are the references.

† Adjusted for age at transplantation, sex, BMI at transplantation, glucocorticoids use before transplantation, type of transplantation