

Supplementary Data

Quantitative Association Between Computed Tomography-based L1 Skeletal Muscle Indices and Major Adverse Clinical Events Following Percutaneous Coronary Intervention

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Supplementary Tables

Table S1. Detailed etiologies of non-cardiac death in the study population

	Total population	L1 SMI Q1	L1 SMI Q2	L1 SMI Q3	L1 SMI Q4
	(n=475)	(n=124)	(n=116)	(n=112)	(n=123)
Non-cardiac death	33 (6.9)	19 (15.3)	6 (5.2)	6 (5.4)	2 (1.6)
Infectious disease	16 (3.4)	11 (8.9)	2 (1.7)	2 (1.8)	1 (0.8)
Intracranial hemorrhage	6 (1.3)	3 (2.4)	1 (0.9)	1 (0.9)	1 (0.8)
Gastrointestinal bleeding	2 (0.4)	1 (0.8)	1 (0.9)	0 (0.0)	0 (0.0)
Respiratory failure	5 (1.1)	2 (1.6)	1 (0.9)	2 (1.8)	0 (0.0)
Malignancy	3 (0.6)	1 (0.8)	1 (0.9)	1 (0.9)	0 (0.0)
Acute kidney injury	1 (0.2)	1 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)

Data are expressed as n (%). L1, first lumbar vertebra; Q1, quartile 1; Q2, quartile 2; Q3, quartile 3; Q4, quartile 4; SMI, skeletal muscle index.

Table S2. Three-year clinical outcomes based on the frailty levels

	Non-frail (n=354)	Mild to moderate frailty (n=105)	Severe frailty (n=116)	Log-rank P-value
All-cause mortality	22 (6.4)	19 (19.1)	9 (58.3)	<0.001
Cardiac death	7 (2.0)	7 (7.4)	3 (26.2)	<0.001
Non-cardiac death	15 (4.5)	12 (12.6)	6 (43.3)	<0.001
Non-fatal MI	10 (3.0)	5 (5.5)	2 (20.9)	0.070
Repeat revascularization	36 (12.1)	10 (13.3)	0 (0.0)	0.504
MACE	58 (17.8)	28 (29.1)	9 (58.3)	<0.001

Data are expressed as incidence (%). Frailty status was assessed using the Rockwood Clinical Frailty Scale (CFS), categorized as non-frail (CFS <5), mild to moderate frailty (CFS 5-6), and severe frailty (CFS 7). MACE, major adverse cardiovascular event; MI, myocardial infarction.

Table S3. Complete dataset of stepwise multivariate analysis for 3-year clinical outcomes

	3-year all-cause mortality		3-year MACE	
	OR (95% CI)	P-value	OR (95% CI)	P-value
Model 2				
L1 SMI quartiles		0.007 (for trend)		<0.001 (for trend)
Quartile 4	Reference		Reference	
Quartile 3	1.71 (0.52–5.56)	0.370	3.17 (1.28–7.86)	0.013
Quartile 2	2.20 (0.72–6.74)	0.164	5.93 (2.47–14.2)	<0.001
Quartile 1	5.62 (1.77–17.8)	0.003	15.5 (6.28–38.4)	<0.001
Age >65 years	0.93 (0.51–1.68)	0.820	0.89 (0.57–1.39)	0.617
Gender (male)	4.25 (1.74–10.3)	0.001	1.38 (0.86–2.24)	0.179
BMI (per 1.0 kg/m ² increase)	1.04 (0.94–1.16)	0.380	1.13 (1.05–1.21)	0.001
Model 3				
L1 SMI quartiles		0.030 (for trend)		<0.001 (for trend)
Quartile 4	Reference		Reference	
Quartile 3	1.76 (0.54–5.71)	0.342	3.09 (1.25–7.65)	0.014
Quartile 2	2.32 (0.76–7.08)	0.139	5.95 (2.49–14.2)	<0.001
Quartile 1	4.93 (1.54–15.7)	0.007	12.7 (5.13–31.6)	<0.001
Age >65 years	1.14 (0.62–2.10)	0.654	1.06 (0.67–1.68)	0.793
Gender (male)	3.32 (1.33–8.23)	0.010	1.12 (0.68–1.84)	0.642
BMI (per 1.0 kg/m ² increase)	1.09 (0.98–1.21)	0.107	1.15 (1.07–1.24)	<0.001

LVEF <50%	1.43 (0.78–2.59)	0.238	1.40 (0.90–2.18)	0.129
CrCl <60 mL/min	1.85 (0.97–3.51)	0.059	1.79 (1.13–2.86)	0.013
Statin prescription	0.46 (0.23–0.90)	0.024	0.56 (0.32–0.97)	0.039
Number of treated lesions (per 1.0 increase)	1.03 (0.20–5.16)	0.967	0.74 (0.24–2.26)	0.606
Model 4				
L1 SMI quartiles		0.032 (for trend)		<0.001 (for trend)
Quartile 4	Reference		Reference	
Quartile 3	1.83 (0.56–5.97)	0.315	3.23 (1.29–8.07)	0.012
Quartile 2	2.25 (0.74–6.79)	0.149	5.54 (2.31–13.2)	<0.001
Quartile 1	4.90 (1.54–15.5)	0.007	12.3 (4.99–30.4)	<0.001
Age >65 years	1.06 (0.57–1.97)	0.834	1.00 (0.63–1.59)	0.986
Gender (male)	3.25 (1.29–8.19)	0.012	1.07 (0.64–1.78)	0.785
BMI (per 1.0 kg/m ² increase)	1.07 (0.96–1.20)	0.182	1.14 (1.06–1.23)	<0.001
LVEF <50%	1.29 (0.68–2.45)	0.431	1.31 (0.81–2.11)	0.264
CrCl <60 mL/min	1.67 (0.87–3.23)	0.121	1.70 (1.04–2.75)	0.031
Statin prescription	0.45 (0.22–0.92)	0.031	0.58 (0.33–1.02)	0.060
Number of treated lesions (per 1.0 increase)	0.91 (0.18–4.64)	0.915	0.59 (0.18–1.88)	0.379
Number of inserted stents (per 1.0 increase)	1.58 (0.25–9.74)	0.620	2.32 (0.63–8.49)	0.200

PCI for myocardial infarction	0.65 (0.34–1.24)	0.197	0.78 (0.48–1.27)	0.327
Hypertension	0.91 (0.47–1.76)	0.799	0.88 (0.55–1.41)	0.612
Diabetes	2.00 (1.07–3.74)	0.029	1.76 (1.13–2.74)	0.012
Previous malignancy	1.73 (0.70–4.25)	0.232	1.15 (0.53–2.49)	0.719
Multivessel disease	0.55 (0.23–1.32)	0.187	0.86 (0.47–1.57)	0.631
Second generation DES	0.90 (0.46–1.73)	0.754	0.75 (0.47–1.19)	0.227

BMI, body mass index; CI, confidence interval; CrCl, creatinine clearance; DES, drug eluting stents; L1, first lumbar vertebra; LVEF, left ventricular ejection fraction; MACE, major adverse cardiovascular event; OR, odds ratio; PCI, percutaneous coronary intervention; SMI, skeletal muscle index

Supplementary Figures

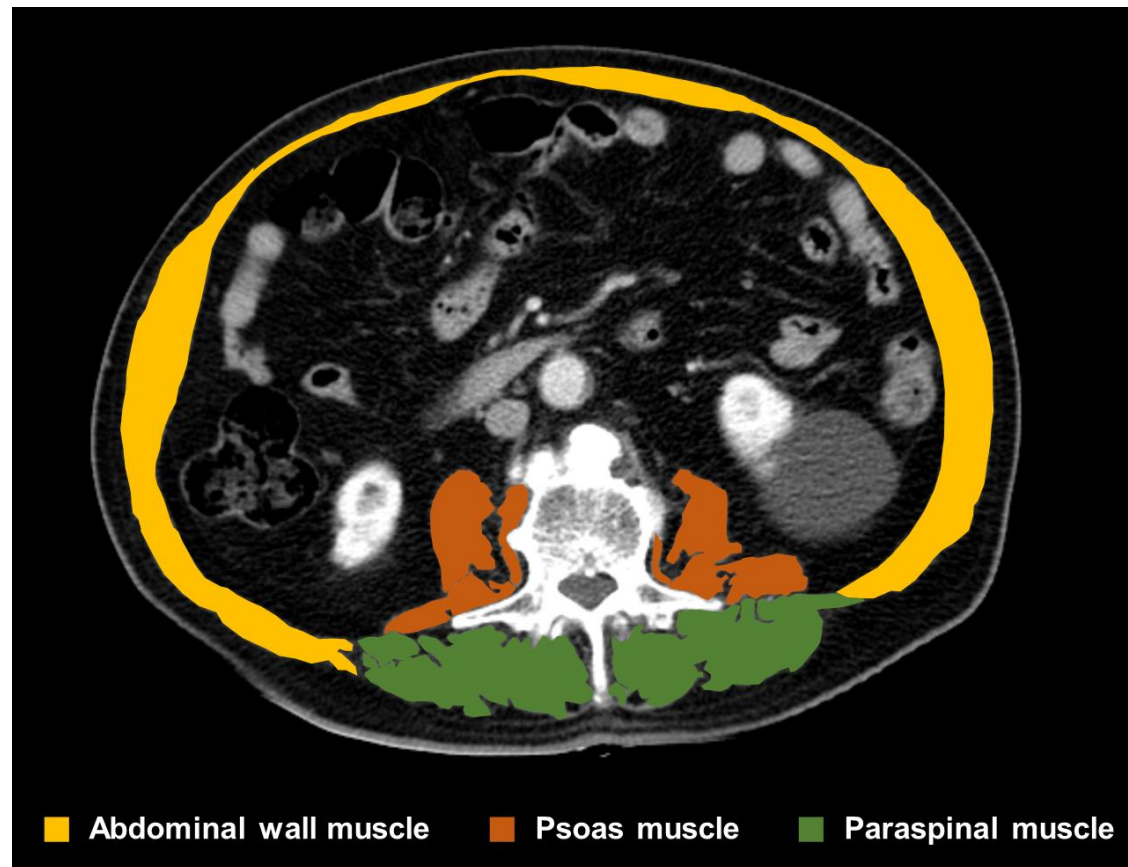


Figure S1. Representative CT-based L3 skeletal muscle measurement

Measurement of skeletal muscles at the L3 level consisted of the abdominal wall, psoas, and paraspinal muscles. CT, computed tomography; L3, third lumbar vertebra

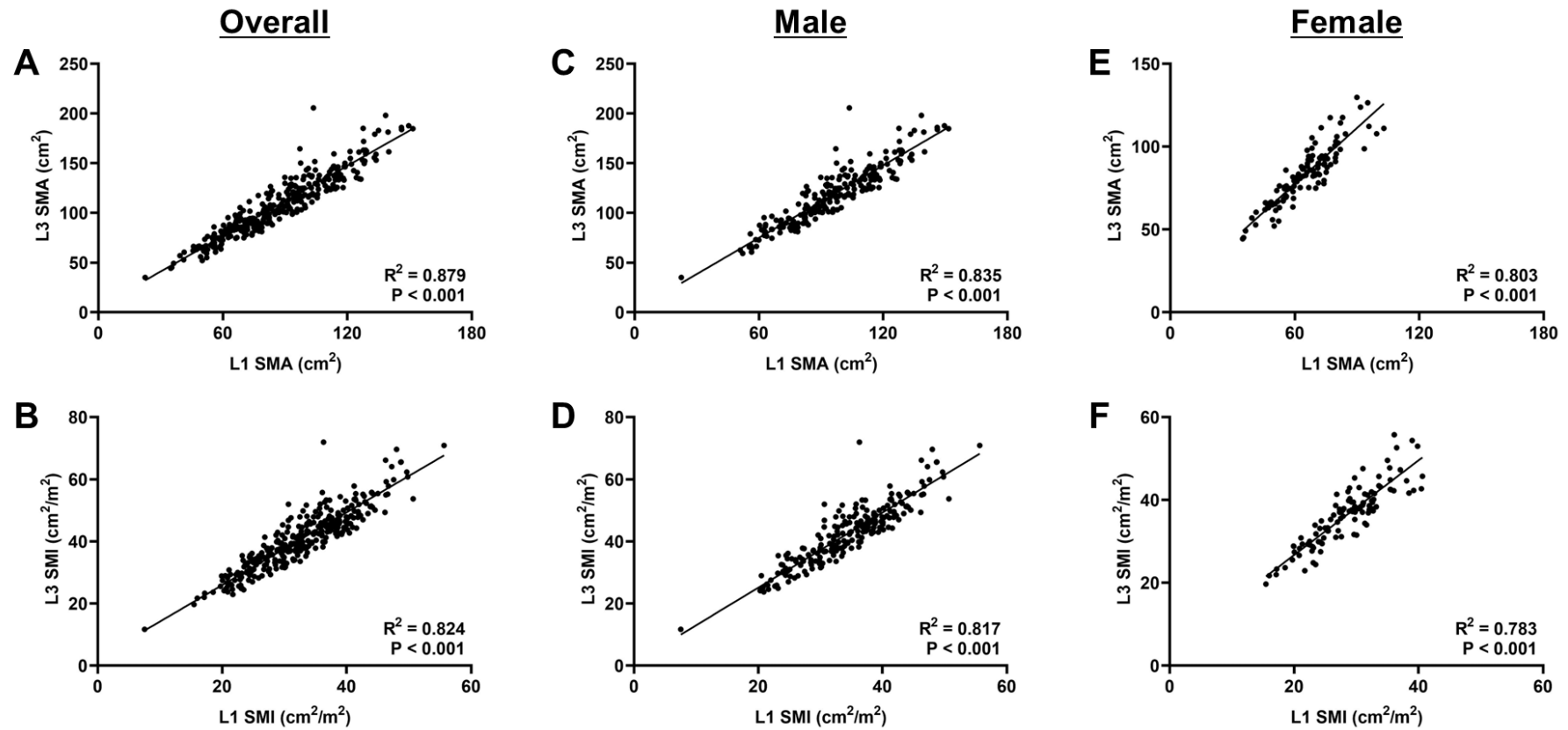


Figure S2. Correlation between L1 and L3 skeletal muscle measurements

Correlative analysis of L1 versus L3 SMA and SMI in the overall population (**A, B**), male patients (**C, D**), and female patients (**E, F**). L1, first lumbar vertebra; L3, third lumbar vertebra; SMA, skeletal muscle area; SMI, skeletal muscle index.