

Supplementary Table 1. Baseline characteristics in patients divided into tertiles according to the ratio of SMM (kg) to WT (kg)

Characteristic	Total (n = 177)	Percentage of SMM to WT			p-value
		Low (n = 59)	Middle (n = 59)	High (n = 59)	
Age (yr)	59.5 ± 14.5	64.0 ± 13.1	62.4 ± 13.3	52.1 ± 14.3	<0.001
Male sex	87 (49.2)	9 (15.3)	40 (67.8)	38 (64.4)	<0.001
Weight (kg)	59.3 ± 11.0	59.7 ± 12.0	61.0 ± 11.4	57.3 ± 9.3	
Height (cm)	161.8 ± 8.6	156.4 ± 6.6	163.2 ± 8.4	165.9 ± 7.8	
Body mass index (kg/m ²)	22.5 ± 3.3	24.2 ± 3.7	22.7 ± 2.8	20.6 ± 2.2	
Duration of hemodialysis (yr)	5.5 ± 4.3	4.9 ± 3.7	5.1 ± 3.6	6.4 ± 5.2	0.14
Etiology of ESRD					0.12
Diabetes mellitus	66 (37.3)	28 (47.5)	26 (44.1)	12 (20.3)	
Hypertension	28 (15.8)	9 (15.3)	9 (15.3)	10 (16.9)	
Glomerulonephritis	35 (19.8)	8 (13.6)	10 (16.9)	17 (28.8)	
Others	24 (13.6)	6 (10.2)	8 (13.6)	10 (16.9)	
Unknown	24 (13.6)	8 (13.6)	6 (10.2)	10 (16.9)	
Hypertension	150 (84.7)	52 (88.1)	46 (78.0)	52 (88.1)	0.21
Diabetes mellitus	81 (45.8)	33 (55.9)	30 (50.8)	18 (30.5)	0.01
Ischemic heart disease	35 (19.8)	18 (30.5)	14 (23.7)	3 (5.1)	0.002
Chronic heart failure	15 (8.5)	7 (11.9)	5 (8.5)	3 (5.1)	0.42
Stroke	19 (10.7)	10 (16.9)	7 (11.9)	2 (3.4)	0.06
Peripheral arterial occlusive disease	10 (5.6)	6 (10.2)	3 (5.1)	1 (1.7)	0.13
NT-proBNP (pg/mL)	9,359.3 ± 9,705.2	10,197.5 ± 10,084.9	8,101.4 ± 9,080.8	9,779.2 ± 9,957.5	<0.001
Cardiac index (%)	51.7 ± 6.9	53.8 ± 6.6	50.6 ± 6.3	50.8 ± 7.3	<0.001
Hemoglobin (g/dL)	10.4 ± 0.9	10.4 ± 1.0	10.5 ± 1.0	10.3 ± 0.9	0.18
Blood urine nitrogen (mg/dL)	61.0 ± 15.8	58.5 ± 15.1	59.8 ± 15.4	64.5 ± 16.3	<0.001
Creatinine (mg/dL)	9.9 ± 3.0	8.5 ± 2.6	9.9 ± 2.5	11.3 ± 3.3	<0.001
Calcium (mg/dL)	9.0 ± 0.6	9.0 ± 0.7	8.9 ± 0.5	9.1 ± 0.6	0.6
Sodium (mEq/L)	137.5 ± 3.3	136.8 ± 3.5	137.8 ± 3.4	137.9 ± 2.8	0.093
Phosphate (mg/dL)	5.2 ± 1.5	5.1 ± 1.6	5.1 ± 1.4	5.3 ± 1.5	<0.001
Albumin (g/dL)	3.9 ± 0.4	3.9 ± 0.4	3.9 ± 0.3	4.0 ± 0.5	0.08
Total cholesterol (mg/dL)	148.4 ± 33.7	160.5 ± 35.2	136.8 ± 26.9	147.8 ± 34.6	0.14
Low-density lipoprotein (mg/dL)	86.4 ± 72.6	84.5 ± 28.6	93.2 ± 108.7	78.0 ± 31.2	0.64
Iron (ng/mL)	65.8 ± 31.0	58.4 ± 26.0	71.2 ± 35.3	67.6 ± 30.1	0.08
TIBC (µg/dL)	229.3 ± 46.9	233.6 ± 43.7	227.7 ± 47.7	226.6 ± 49.4	<0.001
Ferritin (ng/mL)	245.3 ± 395.3	238.3 ± 230.8	218.3 ± 194.8	279.2 ± 617.3	0.74
Potassium (mEq/L)	5.4 ± 1.0	5.3 ± 1.0	5.4 ± 0.9	5.5 ± 1.0	0.02
Parathyroid hormone (pg/mL)	254.5 ± 206.0	204.1 ± 194.2	247.2 ± 179.3	312.1 ± 230.0	0.69
Ultrafiltration per weight (%)	4.5 ± 1.7	4.4 ± 1.6	4.3 ± 1.6	4.9 ± 1.9	<0.001
spKt/V	1.6 ± 0.3	1.7 ± 0.4	1.6 ± 0.3	1.6 ± 0.3	0.7
PG-SGA	3.7 ± 4.4	4.7 ± 5.4	4.0 ± 4.2	2.4 ± 3.1	0.02
Tilburg frailty score	3.5 ± 2.5	4.3 ± 2.8	3.3 ± 2.5	2.9 ± 2.1	0.34
Triceps skinfold thickness (mm)	17.8 ± 7.9	19.5 ± 7.3	18.7 ± 8.6	15.3 ± 7.2	0.02
Mid-arm muscle circumference (cm)	26.3 ± 3.2	26.9 ± 3.6	26.5 ± 2.9	25.5 ± 3.0	0.1
Handgrip strength (kgf)	21.1 ± 10.3	15.0 ± 7.9	22.2 ± 8.8	26.1 ± 10.9	0.006
Percentage of SMM to WT (%)	38.9 ± 5.8	32.6 ± 3.0	38.8 ± 1.8	45.3 ± 2.6	<0.001
SMM to squared height (kg/m ²)	8.7 ± 1.2	7.8 ± 1.0	8.8 ± 1.0	9.3 ± 1.1	<0.001
Possible sarcopenia ^a	113 (63.8)	47 (79.7)	37 (62.7)	29 (49.2)	0.001
Sarcopenia ^b	4 (2.3)	2 (3.4)	2 (3.4)	0 (0.0)	0.36

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Supplementary Table 1. Continued

Characteristic	Total (n = 177)	Percentage of SMM to WT			p-value
		Low (n = 59)	Middle (n = 59)	High (n = 59)	
Extracellular water to TBW (%)	39.4 ± 1.5	40.0 ± 1.4	39.4 ± 1.3	38.9 ± 1.5	0.009
Intracellular water to TBW (%)	60.6 ± 1.5	59.9 ± 1.4	60.6 ± 1.3	61.1 ± 1.5	0.06
Phase angle at 50 kHz (°)	4.9 ± 1.2	4.4 ± 1.1	4.9 ± 1.1	5.4 ± 1.3	<0.001
Medication prescription					
Antihypertensive	132 (74.6)	42 (71.2)	47 (79.7)	43 (72.9)	0.54
Number of medications ^c					0.47
1–2	91 (51.4)	32 (54.2)	31 (52.5)	28 (47.5)	
≥3	41 (23.2)	10 (16.9)	16 (27.1)	15 (25.4)	
Beta blocker	110 (62.1)	34 (57.6)	37 (62.7)	39 (66.1)	0.63
ACE inhibitor	37 (20.9)	10 (16.9)	17 (28.8)	10 (16.9)	0.19
ARB	105 (59.3)	32 (54.2)	33 (55.9)	40 (67.8)	0.26
Diuretics	37 (20.9)	10 (16.9)	16 (27.1)	11 (18.6)	0.35
Calcium-channel blocker	35 (19.8)	9 (15.3)	16 (27.1)	10 (16.9)	0.22
Alpha-blockers	42 (23.7)	9 (15.3)	19 (32.2)	14 (23.7)	0.1
Vasodilators	37 (20.9)	9 (15.3)	17 (28.8)	11 (18.6)	0.17
Total prescribed medications ^d	2.4 ± 2.7	1.7 ± 1.9	1.9 ± 2.0	3.4 ± 3.4	0.002

Data are presented as mean ± standard deviation, number (%), or number only.

Cutoff values to classify sarcopenia followed the criteria of the Asian Working Group.

ACE, angiotensin-converting enzyme; ARB, angiotensin receptor blocker; ESRD, end-stage renal disease; NT-proBNP, N-terminal prohormone of brain natriuretic peptide; SMM, skeletal muscle mass; spKt/V, single-pool ratio of urea clearance multiplied by dialysis time to volume; PG-SGA, patient-generated subjective global assessment; TBW, total body water; TIBC, total iron binding capacity; WT, dry body weight.

^aPossible sarcopenia was defined as low handgrip strength (<28 kg·f in males and <18 kg·f in females). ^bSarcopenia was defined as both low handgrip strength (<28 kg·f in males and <18 kg·f in females) and low ratio of SMM to squared height (<7.0 kg/m² in males and <5.7 kg/m² in females). ^cNumber of medications refers to the individual medications prescribed. ^dThe total prescribed medications are the total equivalent dosages.