Supplementary Materials: Composite Uremic Load and Physical Performance in Hemodialysis Patients: A Cross-Sectional Study

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Table S1. Detailed association between relevant associations of uremic toxins and domains of physical performance.

Variable	Handgrip Strength		Quadriceps Strength		STS	
	Estimate (SE)	*p* Value	Estimate (SE)	*p* Value	Estimate (SE)	*p* Value
IS total	−34.89 (12.7)	0.008	−286.28 (123.5)	0.024	45.09 (32.1)	0.166
IS free	61.10 (19.9)	0.003	252.61 (216.6)	0.248	−57.84 (53.3)	0.282
pCS total	30.79 (13.3)	0.024	−199.73 (116.5)	0.308	−15.80 (31.8)	0.621
pCS free	−31.55 (19.8)	0.115	227.41 (198.1)	0.256	20.21 (47.7)	0.673
pCG total	−16.57 (14.8)	0.266	−519.82 (272.9)	0.062	192.42 (76.7)	0.015
pCG free	−15.44 (14.7)	0.298	485.41 (271.1)	0.078	−153.87 (76.4)	0.048
IAA total	46.58 (18.1)	0.012	415.88 (217.0)	0.060	−84.41 (57.3)	0.146
IAA free	−53.97 (23.0)	0.022	−650.84 (297.1)	0.032	134.77 (78.5)	0.015
HA total	19.93 (20.1)	0.326	317.11 (276.7)	0.256	134.94 (73.6)	0.072
HA free	2.09 (21.8)	0.924	−278.93 (306.6)	0.367	−190.98 (81.1)	0.022
CMPF	−7.26 (7.8)	0.358	−5.68 (64.0)	0.930	29.26 (16.6)	0.082
UA	8.99 (7.8)	0.256	−21.89 (65.1)	0.738	−3.39 (16.6)	0.839

Data are presented as estimated beta-values and estimated standard error (SE), the analyses are controlled for age and gender. Abbreviations: STS, sit-to-stand.

Table S2. Functional muscle strength and uremic toxins.

Uremic Toxin Concentrations (mg/dL)	Sit-to-Stand			*p*-Value
	Good (<13 s)	Moderate (13 s–49 s)	Poor (50 s)	
IS total	1.883 [1.341; 2.426]	1.613 [1.108; 2.117]	1.708 [1.259; 2.157]	0.617
IS free	0.121 [0.068; 0.175]	0.143 [0.048; 0.238]	0.132 [0.085; 0.180]	0.589
pCS total	3.307 [2.513; 4.102]	3.252 [2.544; 3.961]	3.640 [2.938; 4.342]	0.753
pCS free	0.237 [0.151; 0.323]	0.280 [0.146; 0.415]	0.292 [0.220; 0.364]	0.278
pCG total	0.215 [0.118; 0.312]	0.351 [0.168; 0.534]	0.355 [0.233; 0.478]	0.278
pCG free	0.200 [0.107; 0.292]	0.328 [0.156; 0.500]	0.319 [0.208; 0.430]	0.328
IAA total	0.157 [0.111; 0.202]	0.177 [0.097; 0.256]	0.157 [0.107; 0.207]	0.925
IAA free	0.048 [0.030; 0.065]	0.065 [0.014; 0.116]	0.054 [0.027; 0.081]	0.934
HA total	2.248 [1.484; 3.012]	2.980 [1.671; 4.288]	2.343 [1.477; 3.210]	0.991
HA free	1.203 [0.756; 1.652]	1.804 [0.874; 2.735]	1.272 [0.769; 1.776]	0.970

CMPF	0.570 [0.299; 0.841]	0.593 [0.390; 0.796]	0.754 [0.436; 1.072]	0.411
UA	6.639 [6.137; 7.140]	6.173 [5.591; 6.756]	6.042 [5.467; 6.616]	0.191

Data are presented as median and confidence interval [CI]; patients were allocated to a good, moderate or poor lower limb muscle function group based on the tertiles of the Sit-to-Stand test, <13 s, from 13 to 49 s, and 50 s or more, respectively.

Table S3. Upper limb muscle strength and uremic toxins.

Uremic Toxin Concentrations (mg/dL)	Handgrip Strength			*p*-Value
	High (>103%)	Moderate (83–103%)	Low (<83%)	
IS total	1.509 [1.082; 1.935]	1.792 [1.318; 2.265]	1.924 [1.337; 2.511]	0.519
IS free	0.098 [0.050; 0.146]	0.157 [0.066; 0.249]	0.142 [0.090; 0.195]	0.351
pCS total	3.095 [2.564; 3.621]	3.789 [3.020; 4.557]	3.344 [2.467; 4.221]	0.364
pCS free	0.206 [0.153; 0.259]	0.325 [0.190; 0.460]	0.281 [0.191; 0.372]	0.307
pCG total	0.234 [0.123; 0.346]	0.314 [0.167; 0.461]	0.379 [0.225; 0.532]	0.477
pCG free	0.214 [0.107; 0.320]	0.293 [0.155; 0.432]	0.345 [0.205; 0.485]	0.462
IAA total	0.138 [0.104; 0.172]	0.204 [0.123; 0.285]	0.148 [0.098; 0.198]	0.357
IAA free	0.038 [0.026; 0.051]	0.075 [0.026; 0.124]	0.054 [0.025; 0.082]	0.377
HA total	2.029 [1.393; 2.666]	2.814 [1.665; 3.964]	2.730 [1.589; 3.871]	0.843
HA free	1.036 [0.681; 1.392]	1.692 [0.839; 2.544]	1.552 [0.891; 2.213]	0.710
CMPF	0.458 [0.307; 0.611]	0.775 [0.490; 1.060]	0.700 [0.355; 1.046]	0.160
UA	6.162 [5.591; 6.733]	6.565 [5.977; 7.152]	6.120 [5.613; 6.627]	0.545

Data are presented as median and confidence interval [CI]; patients were allocated to a high, moderate or low handgrip strength group based on the tertiles of the predicted handgrip strength, >103%, from 83 to 103%, and <83% respectively.

Table S4. Lower limb muscle strength and uremic toxins.

Uremic Toxin Concentrations (mg/dL)	Quadriceps Muscle Strength			*p*-Value
	High (>64%)	Moderate (46–64%)	Low (<46%)	
IS total	1.235 [0.844; 1.625]	2.002 [1.552; 2.452]	1.970 [1.384; 2.555]	0.013
IS free	0.075 [0.046; 0.105]	0.146 [0.083; 0.209]	0.176 [0.085; 0.267]	0.026
pCS total	2.922 [2.307; 3.536]	3.899 [3.091; 4.707]	3.373 [2.658; 4.088]	0.218
pCS free	0.196 [0.144; 0.247]	0.312 [0.214; 0.409]	0.303 [0.172; 0.433]	0.193

pCG total	0.217 [0.117; 0.317]	0.335 [0.195; 0.474]	0.371 [0.205; 0.537]	0.301
pCG free	0.201 [0.105; 0.296]	0.312 [0.181; 0.443]	0.334 [0.182; 0.487]	0.279
IAA total	0.126 [0.092; 0.160]	0.179 [0.130; 0.229]	0.185 [0.101; 0.269]	0.096
IAA free	0.035 [0.023; 0.047]	0.054 [0.036; 0.072]	0.078 [0.023; 0.134]	0.076
HA total	2.081 [1.259; 2.903]	2.413 [1.659; 3.155]	3.078 [1.471; 3.166]	0.556
HA free	1.086 [0.616; 1.557]	1.332 [0.869; 1.795]	1.862 [0.928; 2.796]	0.397
CMPF	0.547 [0.264; 0.830]	0.631 [0.434; 0.421]	0.752 [0.422; 1.082]	0.181
UA	5.960 [5.474; 6.447]	6.559 [5.986; 7.133]	6.319 [5.720; 6.919]	0.240

Data are presented as median and confidence interval [CI]; patients were allocated to a high, moderate or low quadriceps muscle strength group based on the tertiles of the predicted quadriceps muscle strength, >64%, between 46 and 64%, and <46% respectively.

Table S5. Between-groups of functional prognosis analysis.

Variable	Good Functional Prognosis (*n* = 32)	Poor Functional Prognosis (*n* = 43)	*p* Value
IS total	1.891 [1.469; 2.312]	1.621 [1.246; 1.996]	0.148
IS free	0.130 [0.082; 0.178]	0.134 [0.078; 0.190]	0.453
pCS total	3.463 [2.859; 4.066]	3.362 [2.792; 3.933]	0.855
pCS free	0.252 [0.183; 0.321]	2.834 [0.200; 0.367]	0.740
pCG total	0.247 [0.167; 0.327]	0.352 [0.230; 0.473]	0.793
pCG free	0.230 [0.154; 0.307]	0.321 [0.208; 0.434]	0.910
IAA total	0.180 [0.128; 0.232]	0.151 [0.108; 0.194]	0.265
IAA free	0.059 [0.034; 0.084]	0.053 [0.025; 0.081]	0.688
HA total	2.320 [1.642; 2.998]	2.660 [1.819; 3.502]	0.805
HA free	1.273 [0.851; 1.694]	1.529 [0.956; 2.092]	0.839
CMPF	0.651 [0.418; 0.884]	0.634 [0.428; 0.840]	0.915
UA	6.449 [5.941; 6.957]	6.159 [5.757; 6.561]	0.520

Data are presented as mean and confidence interval [CI]; patients were allocated to a good and poor function prognosis group based on the 300 m cut-off point on the 6MWT.