

Supplemental Material

Supplemental Table 1. Univariate Predictors of Mean Response Time in Patients with Heart Failure

Variable	Beta-Coefficient	P-value
Age (years)	-0.17	0.291
Gender	-0.26	0.091
β-adrenergic receptor antagonist	0.08	0.601
Diuretic, loop	0.11	0.503
ACE inhibitor or ARB	0.03	0.863
Aldosterone blocker	-0.17	0.284
Digoxin	0.24	0.120
Nitrates	-0.17	0.271
Cardiac resynchronization therapy	-0.08	0.593
Hemoglobin (g/dL)	0.14	0.363
RAP, rest (mmHg)	0.22	0.161
PAP, rest (mmHg)	0.52	0.0001
PCWP, rest (mmHg)	0.59	<0.0001
MAP, rest (mmHg)	-0.39	0.012
Cardiac Output, rest (L/min)	-0.30	0.056
C[a-v]O ₂ , rest (mL O ₂ /dL)	0.42	0.006
Heart rate, rest (bpm)	-0.18	0.260
SVR, rest (dynes*s/cm ⁵)	-0.03	0.857
PVR, rest (dynes*s/cm ⁵)	0.11	0.492
PaO ₂ , rest (mmHg)	0.24	0.143
PaCO ₂ , rest (mmHg)	-0.35	0.027
pH, rest (units)	0.31	0.056
RVEF, rest	-0.39	0.015
LVEF, rest	-0.19	0.257
RAP, exercise (mmHg)	0.31	0.046
PAP, exercise (mmHg)	0.43	0.005
PCWP, exercise (mmHg)	0.42	0.006
MAP, exercise (mmHg)	-0.27	0.087
Cardiac Output, exercise (L/min)	-0.36	0.02
C[a-v]O ₂ , exercise (mL O ₂ /dL)	0.33	0.039
PaO ₂ , exercise (mmHg)	0.16	0.328
PaCO ₂ , exercise (mmHg)	-0.38	0.018
pH, exercise (units)	0.29	0.078
RVEF, exercise	-0.54	0.0007
LVEF, exercise	-0.32	0.054
Heart rate, peak(bpm)	-0.03	0.841

Vd/Vt, exercise (%)	0.33	0.042
Peak VO ₂ (ml/kg/min)	-0.31	0.007
VE/VCO ₂	0.34	0.028

ACE indicates angiotensin converting enzyme; ARB, angiotensin receptor blocker, bpm, beats per minute; RAP, right atrial pressure; PAP, mean pulmonary artery pressure; PCWP, pulmonary capillary wedge pressure; MAP, mean arterial pressure; C[a-v]O₂, arterio-venous oxygen content difference; SVR, systemic vascular resistance; PVR, pulmonary vascular resistance RVEF, right ventricular ejection fraction; LVEF, left ventricular ejection fraction; Vd/Vt, dead-space ventilation; VE, total minute ventilation

Supplemental Table 2. Spearman Correlation Coefficients for MRT and Not Normally Distributed Variables

Variable	Spearman ρ	P-value
PAP, rest (mmHg)	0.52	0.0005
Cardiac Output, rest (L/min)	-0.30	0.06
C[a-v]O ₂ , rest (mL O ₂ /dL)	0.42	0.006
Heart rate, rest (bpm)	-0.18	0.26
SVR, rest (dynes*s/cm ⁵)	0.03	0.86
PVR, rest (dynes*s/cm ⁵)	0.11	0.49
RVEF, rest	-0.44	0.007
RAP, exercise (mmHg)	0.32	0.04
PAP, exercise (mmHg)	0.43	0.005
PCWP, exercise (mmHg)	0.39	0.011
Cardiac Output, exercise (L/min)	-0.36	0.02
C[a-v]O ₂ , exercise (mL O ₂ /dL)	0.32	0.04
PaCO ₂ , exercise (mmHg)	-0.42	0.008
RVEF, exercise	-0.54	0.0007
Heart rate, peak(bpm)	-0.08	0.63

PAP, mean pulmonary artery pressure; C[a-v]O₂, arterio-venous oxygen content difference; SVR, systemic vascular resistance; PVR, pulmonary vascular resistance; RVEF, right ventricular ejection fraction; RAP, right atrial pressure; PCWP, pulmonary capillary wedge pressure

Supplemental Table 3. Univariate Predictors of Peak VO₂ in Patients with Heart Failure

Variable	Beta-Coefficient	P-value
Age (years)	-0.31	0.05
Gender	-0.20	0.20
β-adrenergic receptor antagonist	0.04	0.80
Diuretic, loop	-0.11	0.48
ACE inhibitor or ARB	0.08	0.64
Aldosterone blocker	0.16	0.30
Digoxin	-0.04	0.79
Nitrates	0.19	0.22
Cardiac resynchronization therapy	0.18	0.25
Hemoglobin (g/dL)	0.32	0.04
RAP, rest (mmHg)	-0.35	0.02
PAP, rest (mmHg)	-0.39	0.01
PCWP, rest (mmHg)	-0.33	0.03
MAP, rest (mmHg)	0.35	0.03
Cardiac Output, rest (L/min)	0.27	0.09
C[a-v]O ₂ , rest (mL O ₂ /dL)	-0.19	0.25
Heart rate, rest (bpm)	0.19	0.24
SVR, rest (dynes*s/cm ⁵)	-0.02	0.92
PVR, rest (dynes*s/cm ⁵)	-0.20	0.20
PaO ₂ , rest (mmHg)	0.26	0.10
PaCO ₂ , rest (mmHg)	0.23	0.16
pH, rest (units)	-0.20	0.21
RVEF, rest	0.37	0.02
LVEF, rest	0.16	0.34
RAP, exercise (mmHg)	-0.36	0.02
PAP, exercise (mmHg)	-0.33	0.03
PCWP, exercise (mmHg)	-0.29	0.06
MAP, exercise (mmHg)	0.33	0.03
Cardiac Output, exercise (L/min)	0.36	0.02
C[a-v]O ₂ , exercise (mL O ₂ /dL)	-0.02	0.91
PaO ₂ , exercise (mmHg)	0.12	0.47
PaCO ₂ , exercise (mmHg)	0.27	0.10
pH, exercise (units)	-0.21	0.19
RVEF, exercise	0.40	0.02
LVEF, exercise	0.18	0.31
Heart rate, peak(bpm)	-0.13	0.43
Vd/Vt, exercise (%)	-0.40	0.01
VE/VCO ₂	-0.54	0.0003

ACE indicates angiotensin converting enzyme; ARB, angiotensin receptor blocker, bpm, beats per minute; RAP, right atrial pressure; PAP, mean pulmonary artery pressure; PCWP, pulmonary capillary wedge pressure; MAP, mean arterial pressure; C[a-v]O₂, arterio-venous oxygen content difference; SVR, systemic vascular resistance; PVR, pulmonary vascular resistance RVEF, right ventricular ejection fraction; LVEF, left ventricular ejection fraction; Vd/Vt, dead-space ventilation; VE, total minute ventilation