

1 SUPPLEMENTARY MATERIAL

2 **The Right Ventricular Response to Lung Resection**

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6 **Supplementary Tables**7 **Supplementary table1. Patient characteristics by follow-up group**

	Complete (n=20)	Incomplete (n=7)
Patient characteristics		
Age, yr	64.0 (58.0, 75.0)	69 (59, 73)
Sex, n Female	12 (60.0%)	5 (71.4%)
Smoking		
None, n (%)	2 (10.0%)	0
Former, n (%)	6 (30.0%)	6 (85.7%)
Active, n (%)	12 (60.0%)	1 (14.3%)
Pre-operative pulmonary function		
SaO ₂ on air, %	96.5 (1.7)	95.9 (1.7)
FEV ₁ , L	1.9 (1.7, 2.6)	1.7 (1.6, 2.0)
% Predicted FEV ₁ , %	89.2 (28.4)	83.0 (13.3)
FEV ₁ /FVC ratio, %	63.5 (14.9)	68.4 (13.9)
TLCO, ml/kPa/min	5.2 (1.8)	5.4 (1.2)
% Predicted TLCO, %	66.4 (15.2)	72.3 (7.8)
Operative Variables		
Pneumonectomy, n (%)	1 (5.0%)	0
Lobectomy, n (%)	17 (85.0%)	5 (71.4%)
Bilobectomy, n (%)	2 (10.0%)	2 (28.6%)
Right sided procedure, n (%)	12 (60.0%)	5 (71.4%)
Segments resected, n	5 (3, 5)	5 (3, 5)
Duration of surgery, mins	128.0 (113.3, 155.3)	169.0 (146.0, 201.0)
Duration of OLV, mins	53.0 (44.0, 64.5)	84.0 (56.0, 108.0)
Intra-op fluid administration, mls	935.0 (429.5)	928.6 (345.0)
Pathology		
Primary lung cancer	17 (85.0%)	7 (100.0%)
Metastatic malignancy	1 (5.0%)	0
Benign	2 (10.0%)	0
Comorbidities*		
History of Cancer, n (%)	7 (35.0%)	0
COPD, n (%)	4 (20.0%)	2 (28.6%)
Hypertension, n (%)	4 (20.0%)	5 (71.4%)
Ischemic Heart Disease, n (%)	4 (20.0%)	2 (28.6%)
Diabetes Mellitus, n (%)	0	0
Peripheral Vascular Disease, n (%)	2 (10.0%)	3 (42.9%)
Obesity, n (%)	1 (5.0%)	1 (14.3%)
Alcoholism, n (%)	0	0
Thoracoscore (%)	0.7 (0.5, 0.8)	0.6 (0.4, 1.0)
Critical Care Unit Length of Stay (hours)	46.7 (29.1, 51.6)	70.4 (31.5, 72.0)
Hospital Length of Stay (Days)	8 (7.0, 10.8)	9 (8.0, 11.0)

*As per Thoracoscore definition of comorbidities.

Data are presented as mean (SD) or median (IQR).

SaO₂, oxygen saturation; FEV₁, forced expiratory volume in 1 second; FVC, forced vital capacity; TLCO, transfer factor for carbon monoxide; OLV, one lung ventilation; COPD, chronic obstructive pulmonary disease.

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11 **Supplementary table 2. Associations of RVEF and PAAT**

		RVEF _{pre}	RVEF _{POD2}	RVEF _{2months}	Δ RVEF _{POD2-pre}	Δ RVEF _{2months-pre}
PAAT _{MPA}	Pre	r -0.100 p 0.626				
	POD2	r p	0.351 0.110			
	2-months	r p		-0.241 0.256‡		
	Δ PAAT _{MPA.POD2-pre}	r p			-0.109 0.648	
	Δ PAAT _{MPA.2months-pre}	r p			-	0.449 0.047*
PAAT _{OPA}	Pre	r -0.222 p 0.276				
	POD2	r p	0.157 0.509			
	2-months	r p		-0.075 0.735‡		
	Δ PAAT _{OPA.POD2-pre}	r p			-0.202 0.422	
	Δ PAAT _{OPA.2months-pre}	r p				-0.392 0.108
PAAT _{NPA}	Pre	r 0.007 p 0.974				
	POD2	r p	0.488 0.025			
	2-months	r p		-0.061 0.781‡		
	Δ PAAT _{NPA.POD2-pre}	r p			0.231 0.342	
	Δ PAAT _{NPA.2months-pre}	r p				-0.136 0.580

All associations are Pearson's except those annotated with ‡ which are Spearman's.

Significant associations are highlighted in bold, * p<0.05, † p<0.01.

RVEF, right ventricle ejection; pre, pre-operative; POD, post-operative day; Δ RVEF, change in right ventricle ejection fraction; PAAT, Pulmonary artery acceleration time; OPA, Operative pulmonary artery; NPA, Non-operative pulmonary artery.

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14 **Supplementary table 3. Associations of RVEF and Distensibility**

		RVEF _{pre}	RVEF _{POD2}	RVEF _{2months}	Δ RVEF _{POD2-pre}	Δ RVEF _{2months-pre}
DI _{MPA}	Pre	r	0.204			
		p	0.316‡			
	POD2	r		0.063		
		p		0.780		
	2-months	r			0.081	
p				0.707‡		
Δ DI _{MPA .POD2-pre}	r				-0.151	
	p				0.524	
Δ DI _{MPA 2months-pre}	r					0.311
	p					0.181
DI _{OPA}	Pre	r	0.091			
		p	0.656			
	POD2	r		-0.143		
		p		0.546		
	2-months	r			-0.165	
p				0.450‡		
Δ DI _{OPA .POD2-pre}	r				0.222	
	p				0.375	
Δ DI _{OPA 2months-pre}	r					0.203
	p					0.419
DI _{NPA}	Pre	r	0.157			
		p	0.444			
	POD2	r		0.309		
		p		0.173		
	2-months	r			-0.180	
p				0.410‡		
Δ DI _{NPA .POD2-pre}	r				0.319	
	p				0.183‡	
Δ DI _{NPA 2months-pre}	r					0.039
	p					0.873

All associations are Pearson's except those annotated with ‡ which are Spearman's. RVEF, right ventricle ejection; pre, pre-operative; POD, post-operative day; Δ RVEF, change in right ventricle ejection fraction; DI, Distensibility index; OPA, Operative pulmonary artery; NPA, Non-operative pulmonary artery.

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17 **Supplementary table 4. Associations of RVEF and Δ RVEF with biomarkers of**
 18 **myocardial dysfunction**

		RVEF _{pre}	RVEF _{POD2}	RVEF _{2months}	Δ RVEF _{POD2-pre}	Δ RVEF _{2months-pre}
BNP _{pre}	r	-0.050	-0.127	0.529	0.159	0.275
	p	0.810	0.572	0.008 †	0.481	0.205
BNP _{POD2}	r		-0.462	0.212	-0.490	-0.000
	p		0.030 *	0.319	0.021 *	0.998
BNP _{2months}	r			0.378		0.021
	p			0.076		0.926
Trop _{pre}	r	-0.077	0.078	0.090	0.235	-0.109
	p	0.713	0.728	0.676	0.291	0.620
Trop _{POD2}	r		-0.129	0.187	-0.140	-0.005
	p		0.579	0.394	0.544	0.982
Trop _{2months}	r			-0.035		-0.123
	p			0.880		0.605

All associations are Pearson's.

Significant associations are highlighted in bold, * p<0.05, † p<0.01.

RVEF, right ventricle ejection; pre, immediately pre-operative; post, immediately post-operative; POD, post-operative day; Δ RVEF, change in right ventricle ejection fraction; BNP, B-type natriuretic peptide; Trop, HS-Troponin T.

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21 **SUPPLEMENTARY FIGURE LEGENDS**

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23 **Figure 5**

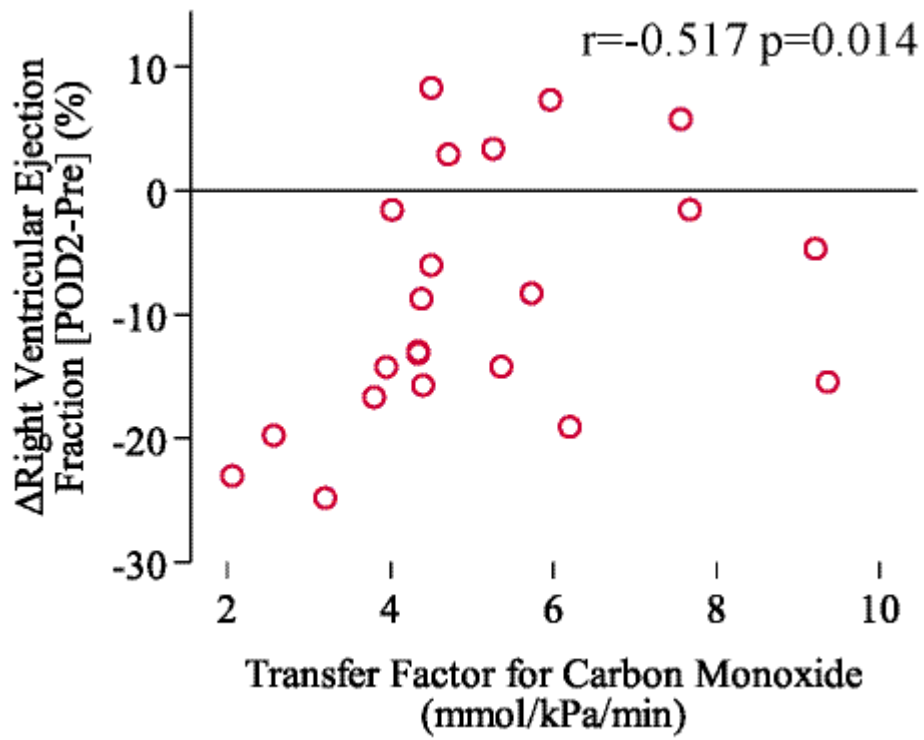
24 Moderate positive association between transfer factor for carbon monoxide (TLCO) and
25 change in right ventricular ejection fraction from pre-op to POD2 (Δ RVEF [POD2-Pre])
26 (Pearson's).

27 **Figure 6**

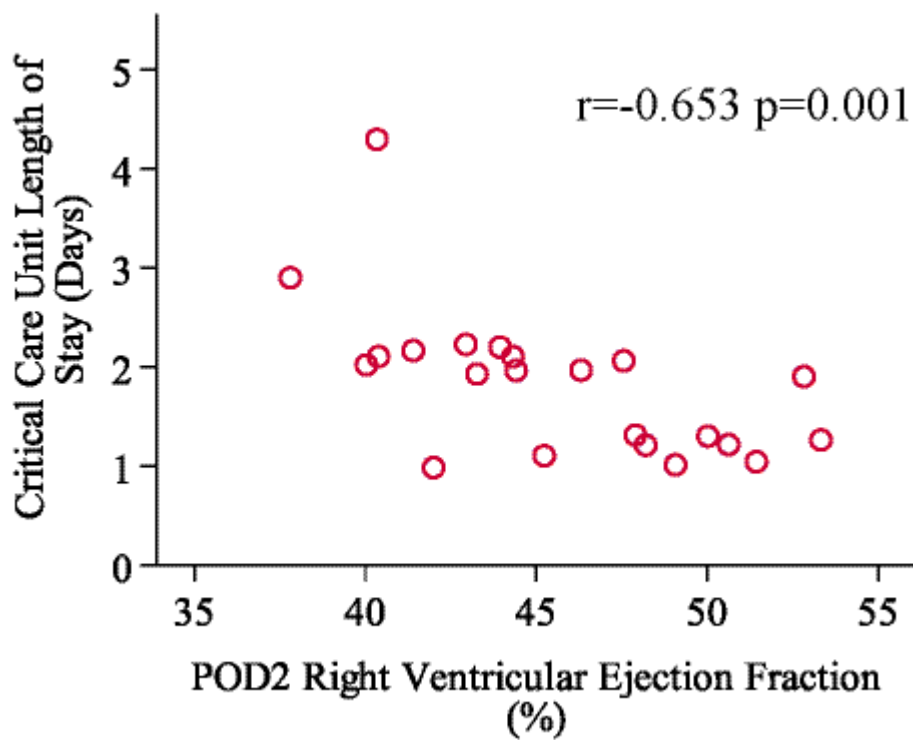
28 Moderate positive association between right ventricular ejection fraction on POD2 and
29 duration of critical care unit length of stay (Spearman's).

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Supplementary Figure 5.2



Supplementary Figure 6.2