

SUPPLEMENTAL TABLES:

Table S1: Baseline characteristics in CTEPH-technically-operable-not-operated sub-groups (declined surgery (patient choice), unfit for surgery and CTEPH where symptoms may be related to other factors in addition to clot burden)

	Declined surgery - patient choice	Unfit for surgery	Other contributors to symptoms in addition to clot burden
Number	72	63	31
Age (years)	68 (16)	70 (12)	69 (12)
Gender (% , Female)	63	41	45
BMI	29 (7)	29 (8)	32 (8)
WHO FC (I/II vs III/IV)	17/83	3/97 [#]	19/81
Duration of symptoms (<1 year/1-2 years/2-5 years/>5 years/not clear)	22/38/17/11/13	11/37/18/21/14	19/36/23/10/7
ISWD (m)	169 (177) [*]	95 (119) ^{#,+}	210 (162) [*]
RAP (mmHg)	12 (6) ⁺	11 (6)	8 (3) [#]
mPAP(mmHg)	46 (10) ⁺	46 (10) ⁺	31 (7) ^{#,*}
CI (L/min/m2)	2.6 (0.8) ⁺	2.4 (0.7) ⁺	3.3 (0.6) ^{#,*}
PCWP (mmHg)	12 (5)	13 (6)	13 (6)
PVR (Wood Units)	8 (4) ⁺	8.5 (5) ⁺	3 (1.4) [#]
SvO ₂ (%)	61 (9) ⁺	59 (9) ⁺	68 (6) ^{#,*}
FEV ₁ (% predicted)	82 (21) [*]	66 (22) ^{#,+}	81 (23) [*]
DL _{CO} (% predicted)	61 (17) [*]	43 (16) ^{#,+}	65 (18) [*]
History of VTE (%)	70	76	90
IVC filter (%)	4	8	0
Thrombophilia (%)	7	2	0
History of cancer (%)	6 ⁺	19	32 [#]
Smoking (%)	35 [*]	62 ^{#,+}	36 [*]
Obesity (%)	26	30	45
CAD (%)	8	21	13
LV dysfunction (%)	6	13	10
Valvular heart disease (%)	0	3	3
CKD (%)	14	13	10
COPD (%)	17 [*]	48 [#]	29
PH therapy following diagnosis (%)	75 ^{*,+}	87 ^{#,+}	13 ^{#,*}

Definition of abbreviations: n = number of patients; BMI = body mass index; WHO FC = World Health Organization functional class; ISWD = incremental shuttle walk distance; RAP = right atrial pressure; mPAP = mean pulmonary arterial pressure; CI = cardiac index; PCWP = pulmonary capillary wedge pressure; PVR = pulmonary vascular resistance; SvO₂ = mixed venous oxygen saturation; FEV₁ = forced expiratory volume in one second; DL_{CO} = diffusing capacity of lung for carbon monoxide; VTE = venous thromboembolism; IVC = inferior vena cava; PE = pulmonary embolism; CAD = coronary artery disease; LV = left ventricle; CKD = chronic kidney disease; COPD = chronic obstructive pulmonary disease; PH = pulmonary hypertension; Values are mean (standard deviation) or percentage unless otherwise indicated.

Mean (standard deviation) or percentage presented.

#: p < 0.05 in comparison to CTEPH- technically-operable-not operated (patient choice).

*: p < 0.05 in comparison to CTEPH-technically-operable-not-operated (unfit for surgery).

+: p < 0.05 in comparison to CTEPH, technically-operable-not operated (other contributors to symptoms in addition to clot burden).

Table S2: Cox regression survival analysis of CTEPH-technically-operable-not-operated group

		Univariate analysis			Multivariate analysis		
Covariates		HR	95% CI	p- value	HR	95% CI	p- value
Age*	/14 years	1.33	1.02-1.74	0.034			
WHO FC	I/II or III/IV (ref = I/II)	2.80	0.88-8.95	0.081			
ISWD*	/160 m	0.59	0.39-0.79	0.001			
RAP*	/5 mmHg	1.38	1.10-1.73	0.005			
CI*	/0.8 L/min/m ²	0.62	0.46-0.82	0.001			
PVR*	/4.6 Wood Units	1.59	1.27-2.00	<0.001			
SvO ₂ *	/9%	0.56	0.44-0.72	<0.001	0.53	0.38-0.76	<0.001
DL _{CO} *	/19 %	0.53	0.39-0.71	<0.001	0.54	0.38-0.75	<0.001
Cancer	Ref=absent	2.98	1.72-5.15	<0.001	4.10	2.02-8.37	<0.001
CAD	Ref=absent	2.18	1.21-3.95	0.010			
CKD	Ref=absent	1.89	1.03-3.48	0.041			

Data shown for univariate analysis where p < 0.20, 71 variables were imported into univariate analysis.

Definition of abbreviations: Ref= reference parameter; WHO FC = World Health Organization functional class; ISWD = incremental shuttle walk distance; RAP = right atrial pressure; CI = cardiac index; PVR = pulmonary vascular resistance; SvO₂ = mixed venous oxygen saturation; DL_{CO} = diffusing capacity of lung for carbon monoxide; CAD = coronary artery disease; CKD = chronic kidney disease;

* These variables are scaled so that the hazard ratio (HR) is the change by one standard deviation (SD).

Table S3: Cox regression survival analysis for CTEPH-technically-operable-not-operated: patient choice, unfit for surgery and other contributors to symptoms in addition to clot burden sub-groups

Patient choice		Univariate analysis			Multivariate analysis		
Covariates		HR	95% CI	p-value	HR	95% CI	p-value
Age*	/16 years	1.40	0.88-2.25	0.160			
WHO FC	I/II or III/IV ref = I/II	27.42	0.27-2732.21	0.158			
ISWD*	/177 m	0.71	0.42-1.19	0.187			
RAP*	/6mmHg	1.83	1.23-2.73	0.003			
CI*	/0.8 L/min/m ²	0.70	0.44-1.10	0.121			
PVR*	/4.25 Wood Units	1.58	1.01-2.49	0.047			
SvO ₂ *	/9%	0.53	0.34-0.82	0.004	0.24	0.12-0.51	<0.001
DL _{co} *	/17%	0.52	0.31-0.85	0.009			
Thyroid disorder	ref = absent	1.91	0.74-4.91	0.182			
CAD	ref = absent	2.28	0.67-7.77	0.189			
Unfit for surgery		Univariate analysis			Multivariate analysis		
Covariates		HR	95% CI	p-value	HR	95% CI	p-value
ISWD*	/114 m	0.65	0.42-0.99	0.046	0.41	0.21-0.79	0.008
RAP*	/6 mmHg	1.27	0.89-1.82	0.185			
CI*	/0.7 L/min/m ²	0.66	0.44-1.01	0.054			
PVR*	/4.94 Wood Units	1.34	0.94-1.88	0.102			
SvO ₂ *	/9%	0.64	0.44-0.92	0.016			
DL _{co} *	/17 %	0.75	0.51-1.09	0.133			
Cancer	ref = absent	2.96	1.47-5.97	0.002	8.77	2.76-27.81	<0.001
CKD	ref = absent	2.46	1.06-5.68	0.035	6.98	1.96-24.89	0.003
Other contributors to symptoms in addition to clot burden		Univariate analysis			Multivariate analysis		
Covariates		HR	95% CI	p-value	HR	95% CI	p-value
Age*	/12 years	2.53	0.97-6.81	0.067			
WHO FC	I/II or III/IV ref = I/II	4.76	0.106-21.33	0.041			
ISWD*	/162m	0.55	0.23-1.35	0.193			
Cancer	ref = absent	6.63	1.98-49.85	0.005	9.93	1.98-49.85	0.005
LV dysfunction	ref = absent	4.55	0.89-23.08	0.067			

Data shown for univariate analysis where $p < 0.20$, 71 variables were imported into univariate analysis.

Definition of abbreviations: ref = reference parameter; WHO FC = World Health Organization functional class; ISWD = incremental shuttle walk distance; RAP = right atrial pressure; CI = cardiac index; PVR = pulmonary vascular resistance; SvO₂ = mixed venous oxygen saturation; DL_{CO} = diffusing capacity of lung for carbon monoxide; CAD = coronary artery disease; CKD = chronic kidney disease; VTE = venous thromboembolism; LV = left ventricular;

* These variables are scaled so that the hazard ratio (HR) is the change by one standard deviation (SD).

Figure S1: Kaplan-Meier estimates of survival from date of diagnosis comparing outcomes in patients with technically operable CTEPH who declined surgery (patient choice) were considered unfit for surgery or in whom comorbidities contributed to symptoms in addition to clot burden.

