

## Supplementary material

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**Table S1.** Baseline patients' characteristics. Group "no interventional therapy" are patients with pulmonary embolism treated non-invasively by PERT-POZ during the study period (June 2022-November 2023)

	CDMT with Lightning 12 n = 29	No interventional therapy n = 45
Women/men, n (%)	11 (37.9) / 28 (62.1)	22 (48.9) / 23 (51.1)
Age, years, mean (SD)	59.6 (15.9)	57.2 (15.4)
BMI, kg/m <sup>2</sup> , mean (SD)	28 (3.0)	29.9 (7.8)
Intermediate-high risk, n (%)	21 (72.4)	37 (82.2)
High risk	8 (27.6)	8 (17.8)
Contraindications to ST, n (%)	8 (27.6)	9 (20)
Absolute	8 (27.6)	9 (20)
Hemorrhagic stroke	2 (6.9)	1 (2.2)
Recent ischemic stroke (<6 months)	1 (3.5)	1 (2.2)
Recent major surgery (<14 days)	3 (10.3)	7 (15.5)
Active gastrointestinal bleeding	1 (3.5)	0 (0)
Caesarian section within 24 hours	1 (3.5)	0 (0)

Relative	0 (0)	3 (15)
Unsuccessful thrombolysis, n (%)	1 (3.5)	0 (0)
PE risk factors, n (%)		
Surgery within 14 days	3 (10.3)	7 (15.6)
Neoplasm	4 (13.8)	7 (15.6)
Thrombophilia	2 (6.9)	3 (6.7)
(Leiden Factor V mutation — heterozygote)	2 (6.9)	15 (33)
Immobilization		
PESI, points, median (Q1–Q3)	113 (105–124)	107 (98–127)
PESI Class, n (%)		
III	4 (13.8)	11 (24.4)
IV	11 (37.9)	10 (22.2)
V	6 (20.6)	24 (53.3)
Symptoms duration, days, median (Q1-Q3)	3 (1–5)	3 (1–5)
Time from diagnosis to CDMT, days, median (Q1–Q3)	1 (1–2)	–
Procedure-related blood loss, ml, mean (SD)	337 (128.7)	–

\*Data are presented as mean (SD) for variables with normal distribution or median (IQR) for variables with skewed distribution

Abbreviations: BMI, body mass index; CDMT, catheter-directed mechanical thrombectomy; PESI, pulmonary embolism severity index; Q1, first quartile; Q3, third quartile; RV/LV ratio, right ventricular-to-left ventricular ratio; SD, standard deviation; VKA, vitamin K antagonist

**Table S2.** All patients with pulmonary embolism treated by PERT-POZ during the study period (June 2022–November 2023) stratified by applied treatment modalities

All patients (June 2022–November 2023), n (%)	100 (100)
High-risk (all patients)	18 (18)
ST	8 (8)
SE	1 (1)
CDMT	8 (8)
CDF	1 (1)
Intermediate high-risk (all patients)	78 (78)
Anticoagulation	37 (37)
CDMT	31 (31)
Using Lightning 12	21 (21)
Using Indigo 8F	10 (10)
CDF	7 (7)
AngioVAC	2 (7)
Low risk with concomitant right atrial thrombi treated using AngioVAC	4 (4)

Abbreviations: CDF, catheter-directed fibrinolysis; CDMT, catheter-directed mechanical thrombectomy; SE, surgical embolectomy; ST, systemic thrombolysis

**Table S3.** Changes in hemodynamics and vitals following catheter-directed mechanical thrombectomy

	Initial	After CDMT	Difference in parameter ( $\Delta$ )	<i>P</i> -value
RV/LV ratio, mean (SD)	1.36 (0.17)	0.98 (0.16)	0.39 (0.12)	<0.0001
sPAP, mm Hg, mean (SD)	52.4 (13.6)	40.0 (12.0)	12.5 (7.1)	<0.0001

mPAP, mm Hg, mean (SD)	30.5 (6.9)	22.9 (5.7)	7.6 (4.0)	<0.0001
dPAP, mm Hg, mean (SD)	18.0 (5.7)	13.2 (3.7)	4.8 (4.1)	<0.0001
mRAP, mm Hg, median, (Q1–Q3)	7 (6–11)	5.5 (4–7)	2 (1–5)	0.0002
Cardiac output, l/min median, (Q1–Q3)	4.5 (3.8–5.4)	5.5 (4.8–7.0)	1 (0.5–1.5)	0.0022
Cardiac Index, l/min/m <sup>2</sup> median, (IQR)	2.2 (2.0–2.9)	3.1 (2.4–3.8)	1.0 (0.4–1.2)	0.012
PVR, Wood Units, mean (SD)	5.0 (2.3)	2.5 (1.5)	2.6 (1.4)	<0.0001
TAPSE, mm, median, (Q1–Q3)	14 (11–16)	19 (17–22)	5 (4–7)	0.0001
Respiratory rate, pm, median, (Q1–Q3)	30 (26–32)	16 (15–16)	15 (12–16)	0.0006
Heart rate, bpm, median, (Q1–Q3)	116 (105–120)	82 (79–89)	28 (20–32)	0.0004
SBP, mm Hg, mean (SD)	131.1 (14.2)	134.5 (11.03)	3.3 (14.1)	0.37 (ns)
DBP, mm Hg, median, (Q1–Q3)	80 (70–90)	78 (78–85)	2 (2–8)	0.11 (ns)
Arterial pO <sub>2</sub> , mm Hg, median, (Q1–Q3)	66 (58–90)	70 (66–91)	6 (2–10)	0.002
hs Troponin I, ng/ml, median, (Q1–Q3)	0.7 (0.2–0.8)	0.3 (0.1–0.4)	0.4 (0.1–0.9)	0.0009
NT-proBNP, pg/ml,	2702 (1233–5775)	1754 (333–3383)	950 (900–2392)	0.001

median, (Q1–Q3)				
Lactate, mmol/l, median, (Q1–Q3)	2.5 (1.7–3.1)	1.7 (1–2.1)	0.8 (0.6–2)	0.018
Hemoglobin concentration, mmol/l, mean (SD)	8.4 (1.2)	7.4 (0.9)	1.0 (0.6)	<0.0001

\*Data are presented as mean (SD) for variables with normal distribution or median (IQR) for variables with skewed distribution

Abbreviations: DBP – diastolic blood pressure; dPAP – diastolic pulmonary arterial pressure; hs- high sensitive; mPAP – mean pulmonary arterial pressure; mRAP – mean atrial pressure; NT-proBNP – N-terminal pro-B-type natriuretic peptide; pO<sub>2</sub> – partial oxygen pressure; PVR – pulmonary vascular resistance; SBP – systolic blood pressure; sPAP – systolic pulmonary pressure; RV/LV – right ventricle-to-left ventricle diameter ratio; TAPSE – tricuspid annular excursion

**Table S4.** Safety and mortality outcomes

<b>Safety outcomes</b>	<b>n (%)</b>
Major bleeding during procedure	0 (0)
Pulmonary artery injury during procedure	0 (0)
Cardiac tamponade during procedure	0 (0)
Clinical deterioration during the procedure	0 (0)
Cardiac arrest during the procedure	0 (0)
PE-related death during the procedure	1 (3.4)
Sustained ventricular tachycardia during the procedure	0 (0)
Procedure-related death	0 (0)
Major bleeding within 48 hours post procedure	0 (0)
Pulmonary artery injury within 48 h post procedure	0 (0)

Cardiac tamponade within 48 h post procedure	0 (0)
Clinical deterioration within 48 h post procedure	0 (0)
PE-related death within 48 h post procedure	0 (0)
All-cause death within 48 h post procedure	0 (0)
Infection (pneumonia/sepsis)	
Stroke (ischemic/hemorrhagic)	1 (3.4)
PE-related mortality within 30 days post procedure	0 (0)
All-cause mortality within 30 days post-procedure	0 (0)
PE recurrence	0 (0)
PE- related mortality within 90 days post procedure	0 (0)
All-cause mortality within 90 days post procedure	1 (6.25)
PE recurrence	0 (0)

Abbreviations: PE, pulmonary embolism