

## SUPPLEMENTAL MATERIAL

**Table S1:** HFA-PEFF score calculation for each patient at baseline according to guideline recommendations.

BASELINE							
Patient	Functional Criteria				Morphological Criteria	Biomarker Criteria (SR)	HFA-PEFF Score
	septal $\dot{e}$ , cm/s <i>major &lt; 7</i>	lateral $\dot{e}$ , cm/s <i>major &lt; 10</i>	E/ $\dot{e}$ <i>major <math>\geq 15</math> minor 9 - 14</i>	TR- velocity, m/s <i>major &gt; 2.8</i>	LAVI, ml/m <sup>2</sup> <i>major &gt; 34 minor 29 - 34</i>	NT-proBNP, pg/ml <i>major &gt; 220 minor 125 - 220</i>	
<b>EVT</b>							
1	6	8	14.5	2.9	36.07	228	6
2	5.5	9.3	17.3	2.8	32.58	1041	5
3	6	9	15	3.2	40.12	458	6
4	6	8	15.28	3.3	36.07	149	5
5	4	6	23.37	3	37.87	1178	6
6	6.7	8.3	14.5	2.9	33.14	2119	5
7	6.8	11.3	15.5	3.3	34.83	254	6
8	5.6	10.2	15.9	2.8	36.17	226	6
9	7.4	9.7	16	3	34.05	238	6
10	7	10.13	18	2.8	36.07	241	6
11	7.2	9.4	14.8	2.9	31.72	233	5
12	6.1	6.9	15.6	3	35.39	242	6
13	5.7	9.1	15.3	3.1	40.74	830	6
14	6.14	7	14.7	2.6	36.51	1948	6
15	3.7	5.6	13.95	3.3	34.39	525	6
16	5.28	11.85	16.2	3.3	43.37	163	5
17	4	9	17.3	2.9	33.33	998	5
18	7.64	7.78	13.37	3.5	42.19	5375	6
19	4.2	9.8	14.8	3.3	39.43	819	6
20	6.8	9.8	17.3	2.9	34.62	226	6
21	5.2	7.9	18.28	3.1	39.76	1100	6
22	6.41	7.6	15.4	3.2	35.98	322	6
23	5.14	8.6	16.3	2.6	36.36	281	6
24	7.76	7.67	15.3	2.7	36.73	483	6
25	5.59	7.3	14.8	2.9	33.51	281	5
<b>Control</b>							
1	5.7	9	15	3.3	39.78	450	6
2	6.2	7	14.85	2.8	38.20	370	6
3	5.6	7.4	15.4	2.9	35.64	1432	6
4	5.28	8	15.6	3	38.76	280	6
5	5.8	9.6	17.8	3.2	35.98	335	6

EVT = endovascular treatment, LAVI = left atrial volume index, NT-proBNP = N-terminal pro-

B-type natriuretic peptide, SR = sinus rhythm, TR = tricuspid regurgitation

**Table S2:** Calculation of the HFA-PEFF score for each patient at follow-up according to guideline recommendations.

FOLLOW UP							
Patient	Functional Criteria				Morphological Criteria	Biomarker Criteria (SR)	HFA-PEFF Score
	septal é, cm/s <i>major &lt; 7</i>	lateral é, cm/s <i>major &lt; 10</i>	E/é <i>major ≥ 15 minor 9 - 14</i>	TR- velocity, m/s <i>major &gt; 2.8</i>	LAVI, ml/m <sup>2</sup> <i>major &gt; 34 minor 29 - 34</i>	NT-proBNP, pg/ml <i>major &gt; 220 minor 125 - 220</i>	
EVT							
1	6.5	9	11.3	2.7	30.6	201	4
2	6.4	10.5	14.2	2.8	27.6	1109	4
3	7	10.1	12.8	3	36.6	473	6
4	6.7	8.9	13.4	3.1	32.8	208	4
5	4.9	7	15	2.9	34.3	884	6
6	7.4	9.2	12.5	2.7	31.4	1890	5
7	7.6	12.3	13.9	3.1	31.5	212	4
8	6.7	11.4	14.4	2.9	35.6	166	5
9	8	10.2	14	2.7	31.9	313	5
10	8.1	11.3	14.8	2.6	35	282	5
11	8	10.2	13.5	2.6	31.7	187	3
12	6.9	8	13.3	2.9	32.6	196	5
13	6.6	10.1	13.6	2.9	38.9	890	6
14	6.5	7	14.9	2.4	34.9	2077	6
15	4.7	6.5	13.4	3	31.2	480	5
16	6.3	12.6	14.8	3	38.8	180	5
17	4.9	10.5	15.1	2.7	31	1101	5
18	8	8.6	14	3.2	38	4865	6
19	5.1	9.9	12.9	3	34.9	759	6
20	7.5	11	14.2	2.7	31.9	120	3
21	6	9.2	16.6	2.9	38.6	1058	6
22	7.1	9.2	12.7	3.1	36	301	6
23	6	10	14	2.5	36.4	210	5
24	8.8	9	12	2.5	34	417	6
25	6.5	8.8	12.6	2.8	31.3	192	3
Control							
1	6.2	9.4	15.5	3.2	40.9	388	6
2	6.3	7	15.2	3.2	39.9	457	6
3	5.7	7.5	15.2	3.1	39.6	1383	6
4	5.3	7.6	16.4	3.1	41.6	490	6
5	5.6	9.3	17.6	3.2	35.5	274	6

EVT = endovascular treatment, LAVI = left atrial volume index, NT-proBNP = N-terminal pro-B-type natriuretic peptide, SR = sinus rhythm, TR = tricuspid regurgitation

**Table S3:** Heart failure medication burden at baseline and follow-up.

Pat.	Betablockers		ACE inhibitor		ARB		AldA		Diuretics		SGLT2i		Change
	Before	FU	Before	FU	Before	FU	Before	FU	Before	FU	Before	FU	
	<b>EVT</b>												
1	-	-	16 mg (R)	8mg (R)	-	-	-	-	-	-	-	-	↓
2	50 mg (M)	50 mg (M)	32 mg (R)	32 mg (R)	-	-	50 mg (E)	25 (E)	20 mg (T)	10 mg (T)	-	-	↓
3	5 mg (N)	5 mg (N)	16 mg (R)	16 mg (R)	-	-	-	-	-	-	-	-	⇒
4	-	-	-	-	40mg (Te)	40 mg (Te)	-	-	-	-	-	-	⇒
5	100 mg (M)	100 Mg (M)	32 mg (R)	32 mg (R)	-	-	-	-	30 mg (T)	20 mg(T)	-	-	↓
6	50 mg (M)	50 mg (M)	32 mg(R)	32 mg (R)	-	-	-	-	-	-	-	-	⇒
7	50mg (M)	50mg (M)	-	-	-	32 mg (C)	-	-	-	-	-	-	⇒
8	10 mg (N)	10 mg (N)	16 mg (R)	16 mg (R)	-	-	-	-	-	-	-	-	⇒
9	-	-	-	-	32 mg (C)	32 mg (C)	-	-	-	-	-	-	⇒
10	75 mg (M)	75 mg (M)	32 mg (R)	32 mg (R)	-	-	-	-	-	-	-	-	⇒
11	5 mg (N)	5 mg (N)	-	-	20 mg (Te)	20 mg (Te)	-	-	-	-	-	-	⇒
12	50 mg (M)	50 mg (M)	16 mg (R)	16 mg (R)	-	-	-	-	-	-	-	-	⇒
13	100 mg (M)	100 mg (M)	-	-	40 mg (Te)	40 mg (Te)	-	-	-	-	-	-	⇒
14	-	-	32 mg (R)	32 mg (R)	-	-	-	-	40 mg (T)	20 mg (T)	-	-	↓
15	-	-	32 mg (R)	32 mg (R)	-	-	50 mg (E)	50 mg (E)	20 mg (T)	20 mg (T)	-	-	⇒
16	-	-	-	-	80 mg (Te)	80 mg (Te)	-	-	-	-	-	-	⇒
17	-	-	32 mg (R)	32 mg (R)	-	-	-	-	-	-	-	-	⇒
18	25 mg (Ca)	25 mg (Ca)	-	-	40 mg (Te)	40 mg (Te)	25 mg (E)	25 mg (E)	10 mg (T)	5 mg (T)	-	-	↓
19	-	-	-	-	32 mg (C)	32 (C)	-	-	-	-	-	-	⇒
20	50 mg (M)	50 mg (M)	-	-	-	-	-	-	-	-	10 mg (e)	10 mg (e)-	⇒
21	100 mg (M)	100 mg (M)	-	-	16 mg (C)	16 mg (C)	25 mg (E)	25 mg (E)	20 mg (T)	20 mg (T)	-	-	⇒
22	50 mg (M)	50 mg(M)	-	-	80 mg (Te)	80 mg (Te)	-	-	-	-	-	-	⇒
23	75 mg (M)	75 mg (M)	-	-	-	-	-	-	-	-	-	-	⇒
24	25 mg (M)	25 mg (M)	-	-	-	-	-	-	-	-	-	-	⇒
25	-	-	-	-	32 mg (C)	32 mg (C)	-	-	-	-	-	-	⇒
	<b>Control</b>												
1	10 mg (N)	10 mg (N)	16 mg (R)	16 mg (R)	-	-	-	-	-	-	-	-	⇒
2	-	-	-	-	80 mg (Te)	80 mg (Te)	-	-	-	-	-	-	⇒
3	50 mg (M)	50 mg (M)	32 mg (R)	32 mg (R)	-	-	25 mg (E)	25 mg (E)	20 mg (T)	20 mg (T)	-	-	⇒
4	50 mg (M)	50 mg (M)	16 mg (R)	16 mg (R)	-	-	-	-	-	-	-	-	⇒
5	75 mg (M)	75 mg (M)	-	-	-	-	-	-	-	-	-	-	⇒

ACE = angiotensin-converting-enzyme inhibitor, AldA = aldosterone antagonist; ARB = angiotensin receptor blocker, C = Candesartan, Ca = Carvedilol, E = Eplerenon, e = Empagliflozin, EVT = endovascular treatment, FU = follow-up, M = Metoprolol, N = Nebivolol, R= Ramipril, SGLT2i = Sodium-glucose cotransporter-2 inhibitors, T = Toreem, Te = Telmisartan

**Table S4:** Visual calcium scoring across different iliofemoral segments according to duplex sonography. Score of 0 if no wall heterogeneity or anechoic shadowing was observed, a score of 1 if there was evidence of wall heterogeneity without anechoic shadowing, and a score of 2 if there was clear anechoic shadowing or high-grade stenosis or total occlusion.

	Visual Calcium Scoring					
	EVT (n = 25)			Control (n = 5)		
	0	1	2	0	1	2
CIA	0	2	23	0	1	4
EIA	0	3	22	0	1	4
CFA	0	5	20	0	2	3
SFA	0	5	20	0	2	3

CFA = common femoral artery, CIA = common iliac artery, EIA = external iliac artery, EVT = endovascular treatment; SFA = superficial femoral artery

**Table S5:** Procedural characteristics of the 30 PAD patients.

<b>Procedural characteristics</b>	<b>EVT (n=25)</b>	<b>Control (n=5)</b>
Renal artery stenosis on angiography	0 (0%)	0 (0%)
Periinterventional complication, n (%)	1 (4)	0 (0)
Chronic total occlusion, n (%)	11 (44)	2 (40)
<b>Vessel segment</b>		
Iliac, n (%)	14 (56)	2 (40)
Fempop., n (%)	3 (12)	3 (60)
Combined iliac and femopop. procedure, n (%)	8 (32)	-
Unilateral procedure, n (%)	17 (68)	-
Bilateral procedure, n (%)	8 (32)	-
<b>No. of stents, n (%)</b>	23 (92)	0 (0)
1, n (%)	7 (28)	-
2, n (%)	11 (44)	-
3, n (%)	4 (16)	-
4, n (%)	1 (4)	-
<b>DCB treatment</b>		
1, n (%)	3 (12)	-
2, n (%)	1 (4)	-

DCB = drug-coated balloon, EVT = endovascular treatment, Fempop. = femoropopliteal

**Table S6:** Adverse events during follow-up.

<b>MACE</b>	<b>EVT (n = 25)</b>	<b>Control (n=5)</b>
CV death	0 (0)	0 (0)
AMI	0 (0)	0 (0)
Stroke	0 (0)	0 (0)
Hospitalization for unstable angina	0 (0)	0 (0)
Heart failure Hospitalization	0 (0)	0 (0)
Coronary revascularization	0 (0)	0 (0)
<b>MALE</b>		
Peripheral Intervention (%)	0 (0)	0 (0)
Lower extremity bypass (%)	0 (0)	0 (0)
Amputation (%)	0 (0)	0 (0)

AMI = acute myocardial infarction; CV = cardiovascular; EVT = endovascular treatment; MACE= major adverse cardiac events; MALE = major adverse limb events

**Table S7:** Changes in PWV and compliance after adjustment for aMAP.

	EVT (n=25)			Control (n=5)		
	p-value (before vs. after)	p-value (before vs. FU)	p-value (after vs. FU)	p-value (before vs. after)	p-value (before vs. FU)	p-value (after vs. FU)
PWV	0.11	0.17	0.75	0.82	0.38	0.51
Compliance	0.06	<b>0.010</b>	0.45	0.88	0.87	0.77

EVT = endovascular treatment, FU = follow-up, aMAP = aortic mean arterial pressure, PWV = pulse wave velocity. Unpaired t-test was used to calculate P values.

**Table S8:** Baseline measures of aortic inflow, aortic function and peripheral hemodynamics.

	<b>EVT (n = 25)</b>	<b>Control (n=5)</b>	<b>p-value</b>
<b>Aortic inflow</b>			
LVEF [%]	56 ± 12	53 ± 5	0.73
S' mean	6.9 ± 1.3	6.8 ± 1.4	0.88
E/e' mean	16 ± 2	16 ± 1	0.25
e' septal [cm/s]	6 ± 1	6 ± 0.3	0.71
e' lateral [cm/s]	9 ± 2	8 ± 1	0.57
TR velocity [cm/s]	3.0 ± 0.2	3.1 ± 0.2	0.81
LAVI [ml/m <sup>2</sup> ]	36.4 ± 3	37.7 ± 1.8	0.39
LVMI [g/m <sup>2</sup> ]	143 ± 16	142 ± 15	0.92
SV [ml]	53 ± 4	53 ± 4	0.90
CO [L/min]	3.7 ± 0.6	3.7 ± 0.4	0.96
HR (bpm)	69 ± 9	73 ± 6	0.36
<b>Aortic function</b>			
aSBP [mmHg]	128 ± 19	130 ± 14	0.81
aDBP [mmHg]	75 ± 10	74 ± 9	0.81
aMAP [mmHg]	95 ± 10	92 ± 10	0.65
aPP [mmHg]	53 ± 19	57 ± 10	0.70
AIx@HR75 [%]	32 ± 8	31 ± 4	0.71
PWV [m/s]	11.1 ± 2.9	11.4 ± 1.5	0.85
Compliance [mL/mmHg]	1.13 ± 0.4	0.97 ± 0.3	0.42
<b>Peripheral hemodynamics</b>			
bSBP [mmHg]	136 ± 20	132 ± 13	0.66
bDBP [mmHg]	74 ± 10	68.4 ± 10	0.27
bMAP [mmHg]	87 ± 28	90 ± 10	0.84
bPP [mmHg]	63 ± 21	64 ± 10	0.91
TPR [dynes x s/cm <sup>5</sup> ]	2043 ± 332	2049 ± 399	0.97
CFA blood flow [ml/min]	580 ± 204	610 ± 122	0.75
TMWD [mm]	79 ± 44	82 ± 43	0.94
ABI	0.67 ± 0.1	0.70 ± 0.1	0.64

ABI = ankle brachial index, AIx@HR75 = frequency-normalized augmentation index, aAP = aortic augmentation pressure, aDBP = aortic diastolic blood pressure, aMAP = aortic mean arterial pressure, aPP = aortic pulse pressure, aSBP = aortic systolic blood pressure, bDBP = brachial diastolic blood pressure, bMAP = brachial mean arterial pressure, bPP = brachial pulse pressure, bSBP = brachial systolic blood pressure, CFA = common femoral artery, CO = cardiac output, EVT = endovascular treatment HR = heart rate, LAVI = left atrial volume index, LVEF = left ventricular ejection fraction, LVMI = left ventricular mass index, PWV = pulse wave velocity, SV = stroke volume, TMWD = treadmill walking distance, TPR = total peripheral resistance, TR= tricuspid regurgitation; Continuous variables are expressed as the mean values and standard



deviations and were compared by an unpaired t test; p – values < 0.05 are considered statistically significant.

**Table S9:** Change in LVDF (left ventricular diastolic function) after endovascular treatment (EVT) as compared to control at different time points. E'septal (A), e'lateral (B), E/é (C), tricuspid regurgitation (TR, D), left atrial volume index (LAVI, E), left ventricular (LV) mean wall thickness (F), female (G) and male (H) left ventricular mass index (LVMI).

<b>A</b>				
e'septal				
	mean difference	95% CI		p-value (unpaired t-test)
Before vs. after	0.64	0.45	0.83	<0.0001
Before vs. follow-up	0.71	0.49	0.92	<0.0001
After vs. follow-up	0.07	-0.04	0.17	0.2
<b>B</b>				
e'lateral				
	mean difference	95% CI		p-value (unpaired t-test)
Before vs. after	0.92	0.59	1.24	<0.0001
Before vs. follow-up	1.05	0.67	1.43	<0.0001
After vs. follow-up	0.13	-0.17	0.44	0.38
<b>C</b>				
E/é				
	mean difference	95% CI		p-value (unpaired t-test)
Before vs. after	-2.02	-2.96	-1.08	<0.0001
Before vs. follow-up	-2.25	-3.25	-1.25	<0.0001
After vs. follow-up	-0.23	-0.52	0.06	0.11
<b>D</b>				
TR [m/s]				
	mean difference	95% CI		p-value (unpaired t-test)
Before vs. after	-0.23	-0.31	-0.15	<0.0001
Before vs. follow-up	-0.30	-0.42	-0.19	<0.0001
After vs. follow-up	-0.07	-0.17	0.03	0.15
<b>E</b>				
LAVI [ml/m <sup>2</sup> ]				
	mean difference	95% CI		p-value (unpaired t-test)
Before vs. after	-3.84	-5.16	-2.54	<0.0001
Before vs. follow-up	-4.36	-5.94	-2.77	<0.0001
After vs. follow-up	-0.51	-1.63	0.61	0.36
<b>F</b>				
LV mean wall thickness [mm]				
	mean difference	95% CI		p-value (unpaired t-test)
Before vs. after	-0.08	-0.16	0.01	0.08
Before vs. follow-up	-0.76	-0.97	-0.56	<0.0001
After vs. follow-up	-0.68	-0.89	-0.48	<0.0001
<b>G</b>				
female LVMI [g/m <sup>2</sup> ]				
	mean difference	95% CI		p-value (unpaired t-test)
Before vs. after	0.39	-1.42	2.20	0.64
Before vs. follow-up	-5.22	-7.83	-2.62	0.0014
After vs. follow-up	-7.11	-9.93	-4.29	0.0003
<b>H</b>				
male LVMI [g/m <sup>2</sup> ]				
	mean difference	95% CI		p-value (unpaired t-test)
Before vs. after	0.67	-0.84	2.16	0.37
Before vs. follow-up	-7.27	-10.22	-4.31	<0.0001
After vs. follow-up	-7.93	-10.96	-4.91	<0.0001

**Table S10:** Multivariate linear regression assessing the correlation between E/e' and peripheral hemodynamics (TPR, CFA blood flow, ABI), aortic function (AIx@HR75, PWV, aSBP, aMAP, arterial compliance) and aortic inflow (CO). All individual baseline and follow-up observations of patients participating in the study were entered into the model (n=90).

<b>Multivariate analysis</b>	<b>n=90</b>
	R <sup>2</sup> = 0.48, constant = 57
<hr/>	
<b>Peripheral hemodynamics</b>	
TPR	Beta-Coeff. = -0.002; p=0.41
CFA flow	Beta-Coeff. = -0.006; p=0.12
ABI	Beta-Coeff. = 5.9; p=0.07
<b>Aortic function</b>	
aMAP	Beta-Coeff. = 0.11; p=0.48
aSBP	Beta-Coeff. = 0.02; p=0.73
AIx	Beta-Coeff. = -0.27; <b>p=0.048</b>
PWV	Beta-Coeff. = -0.06; <b>p=0.013</b>
Compliance	Beta-Coeff. = -7.12; <b>p=0.002</b>
<b>Aortic inflow</b>	
CO	Beta-Coeff. = -0.44; p=0.75

ABI = ankle brachial index, AIx = augmentation index, aMAP = aortic mean arterial pressure, aSBP = aortic systolic blood pressure, CFA = common femoral artery, CO = cardiac output, PWV = pulse wave velocity, SV = stroke volume, TPR = total peripheral resistance

**Table S11:** Multivariate analysis for predictors of E/e' adjusted for cardiovascular disease risk factors.

Predictors	Multivariate model		Multivariate model adjusted by CAD		Multivariate model adjusted by T2D		Multivariate model adjusted by Smoking		Multivariate model adjusted by CKD		Multivariate model adjusted by HLP	
	Beta-Coeff.	p - Value	Beta-Coeff.	p - Value	Beta-Coeff.	p - Value	Beta-Coeff.	p - Value	Beta-Coeff.	p - Value	Beta-Coeff.	p - Value
<b>Aix</b>	- 0.27	0.048	- 0.175	0.049	- 0.166	0.037	- 0.180	0.047	- 0.160	0.044	- 0.192	0.036
<b>PWV</b>	- 0.06	0.013	- 0.449	0.048	- 0.512	0.022	- 0.440	0.042	- 0.388	0.042	- 0.348	0.043
<b>Compliance</b>	- 7.12	0.002	- 5.732	0.019	- 7.639	0.002	- 5.410	0.023	- 6.420	0.011	- 2.933	0.002

Aix = augmentation index, PWV = pulse wave velocity, CAD = coronary artery disease, CKD = chronic kidney disease, HLP = hyperlipoproteinemia, T2D = type 2 diabetes

## FIGURE LEGENDS

**Figure S1.** HFA-PEFF Score before endovascular treatment and at follow-up. Wilcoxon signed-rank test was used to calculate P values.

**Figure S2.** Impact of peripheral endovascular treatment (EVT) on pulsatile left ventricular afterload. Change in characteristic impedance of the proximal aorta ( $Z_c$ ; A), and reflection coefficient (RC; B) before (circle), after (triangle) and at the follow-up (square) after elective EVT (n=25) or diagnostic angiography alone as a control (n=5). Unpaired t-test was used to calculate P values.

**Figure S3.** Change in mean  $E/e'$  (A) and left atrial volume index (LAVI, B) after unilateral (n=17) and bilateral (n=8) endovascular treatment (EVT) at before (circle) and after EVT (triangle). Unpaired t-test was used to calculate deltas at different time points.

**Figure S4.** Relationship of changes in  $E/e'$  to common femoral artery (CFA) flow, ankle brachial index (ABI), and treadmill walking distance (TMWD). A, Correlation of changes in CFA flow ( $\Delta$  CFA flow) and changes in  $E/e'$  ( $\Delta E/e'$ ). B, Correlation between changes in ABI ( $\Delta$  ABI) and  $E/e'$ . C, Correlation of changes in TMWD ( $\Delta$  TMWD) and changes in  $E/e'$  ( $\Delta E/e'$ ).

**Figure S5.** Correlation between changes in  $E/e'$  ( $\Delta E/e'$  before vs after) and stent volume.

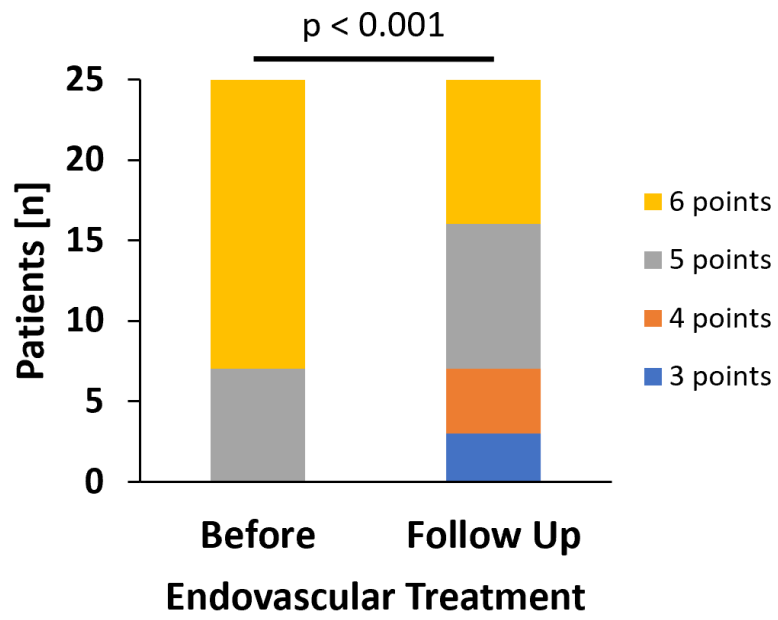
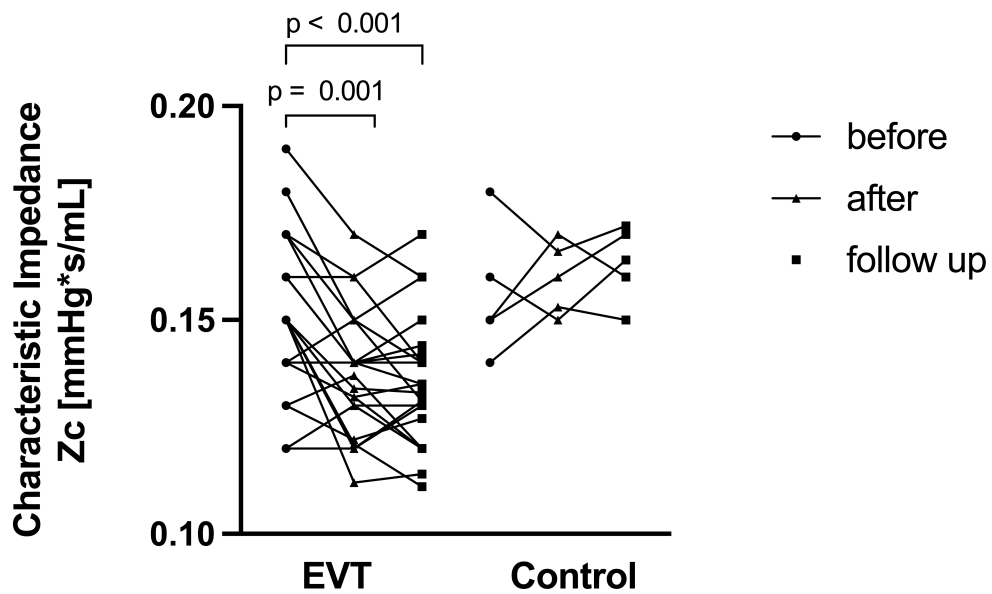


Figure S1

A



B

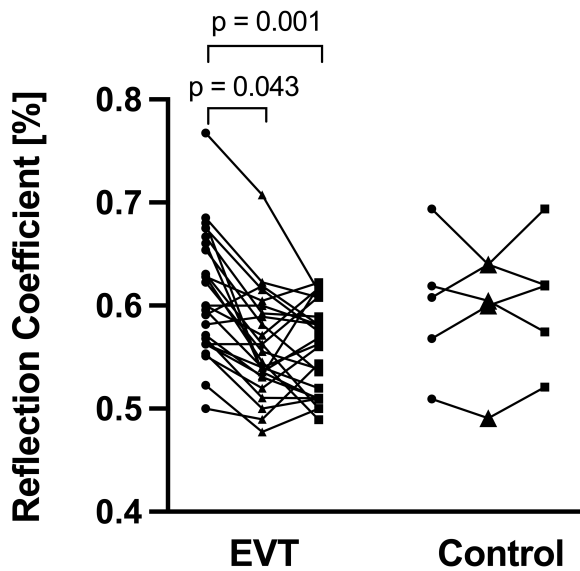


Figure S2

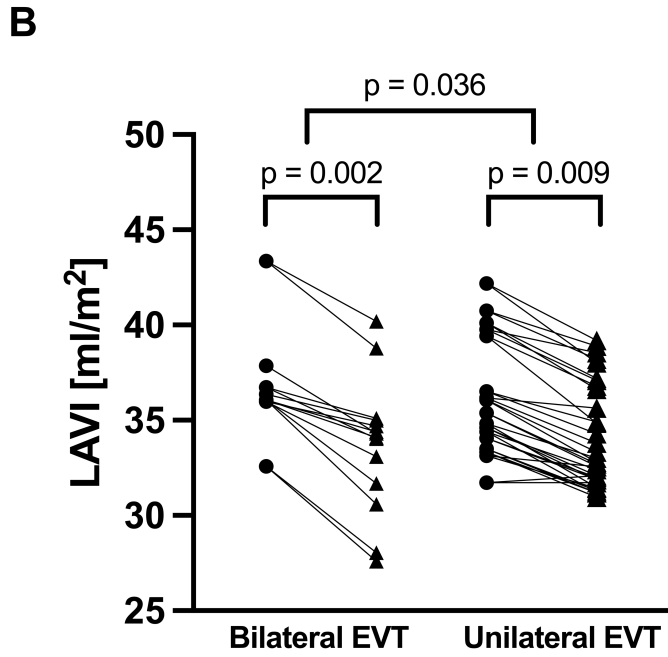
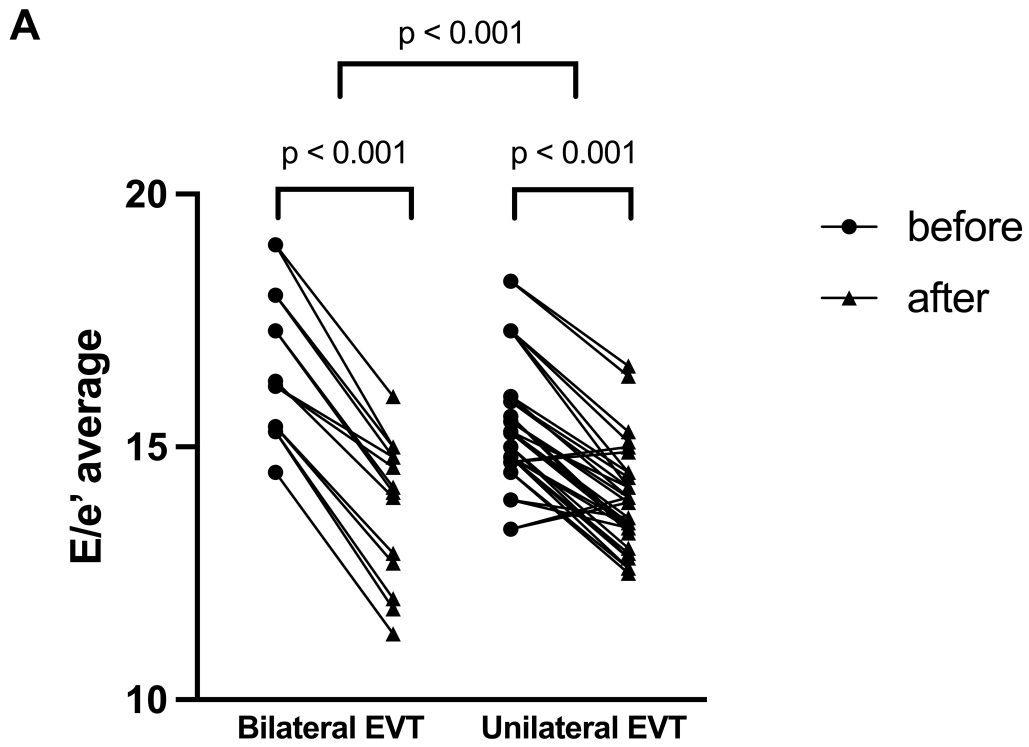


Figure S3



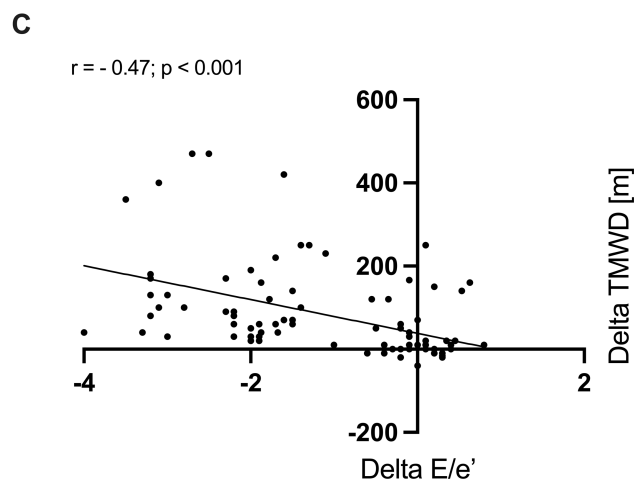
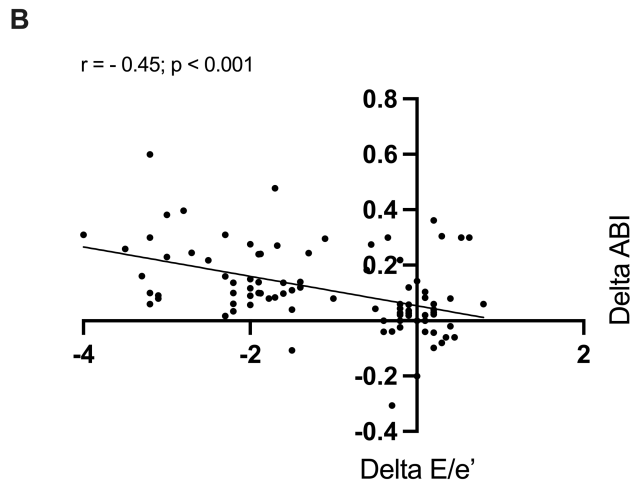
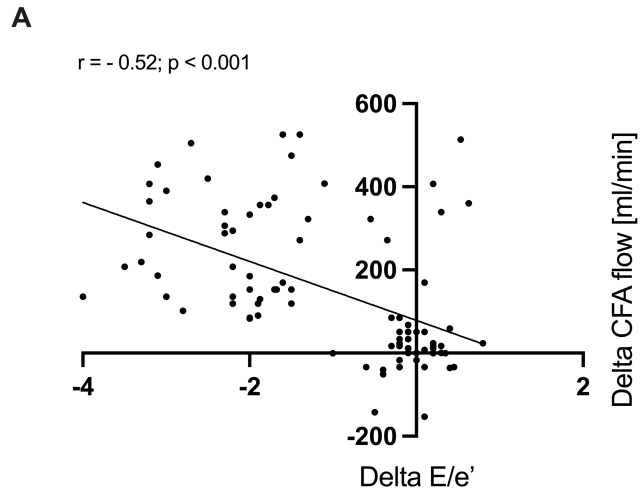


Figure S4

$r = -0.52; p = 0.007$

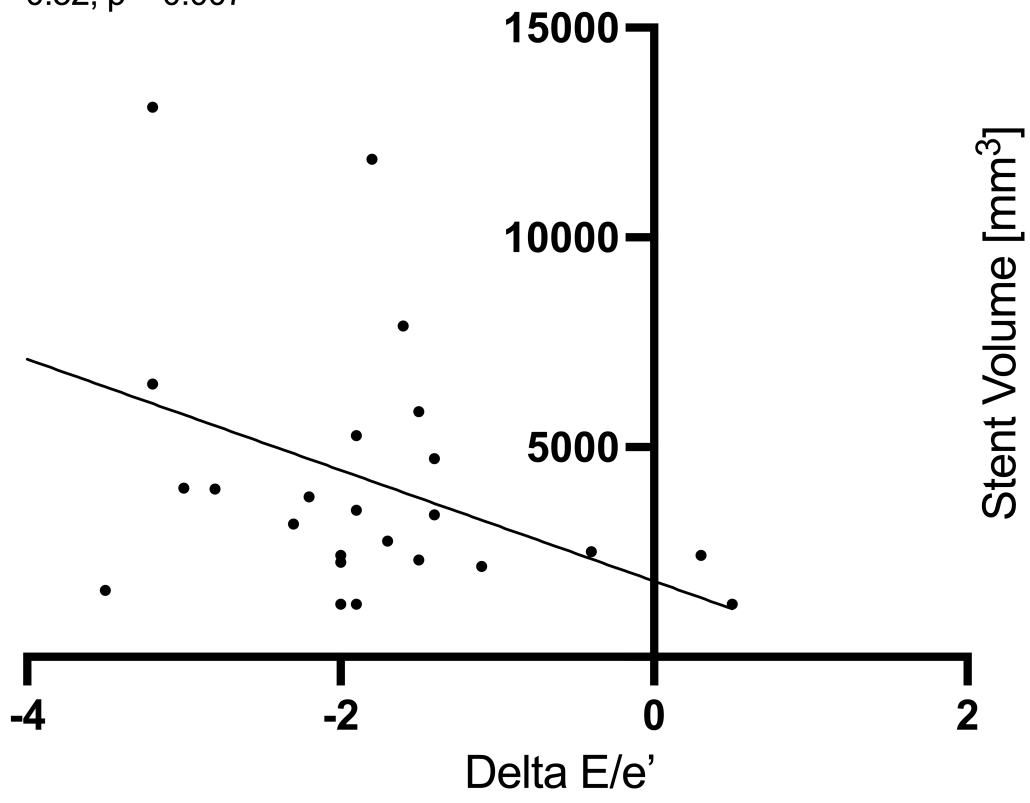


Figure S5