

# **SUPPLEMENTAL MATERIAL**

**Table S1. Change of preprocedural echocardiographic parameters through PLL.**

	PAF (N=95)	PeAF (N=50)	LS-PeAF (N=19)	P value
LV end-diastolic volume index, ml/m <sup>2</sup>	2.2±7.5	1.4±5.5	1.4±4.0	0.530
LV end-systolic volume index, ml/m <sup>2</sup>	1.1±3.6	0.4±3.0	0.2±1.6	0.529
LV ejection fraction, %	-0.5±6.4	-0.2±5.0	0.4±4.0	0.891
E wave, cm/s	6.8±9.7	6.2±10.9	7.6±12.1	0.623
e' wave, cm/s	1.0±1.4	0.9±1.2	1.4±1.0	0.274
E/e' ratio	-0.2±1.9	-0.1±1.9	-0.3±1.1	0.764
LA volume index, ml/m <sup>2</sup>	0.8±4.4	1.0±9.2	2.7±5.0	0.174
LARS, %	2.0±4.4	1.6±5.0	-1.0±2.9*	0.003

E = early diastolic transmitral flow velocity, e' = early diastolic mitral annular velocity, LA = left atrium, LARS = left atrial reservoir strain, LS-PeAF = long-standing persistent atrial fibrillation, LV = left ventricle, PAF = paroxysmal atrial fibrillation, PeAF = persistent atrial fibrillation and PLL = passive leg lifting. \*p<0.05 vs PAF group.

**Table S2. Baseline characteristics stratified by LA functional reserve.**

	Preserved LA functional reserve (N=104)	Impaired LA functional reserve (N=60)	P value
AF types			0.026
PAF, n (%)	66 (63.5)	29 (48.3)	
PeAF, n (%)	31 (29.8)	19 (31.7)	
LS-PeAF, n (%)	7 (6.7)	12 (20.0)	
Age, years	63±12	67±9	0.030
Men, n (%)	70 (67.3)	46 (76.7)	0.205
Body mass index, kg/m <sup>2</sup>	24.6±3.6	24.6±2.7	0.645
Systolic blood pressure, mmHg	123±17	119±15	0.247
Diastolic blood pressure, mmHg	69±12	67±11	0.784
Heart rate, beats/min	73±11	76±14	0.156
Current smoking, n (%)	10 (9.6)	6 (10.0)	0.936
Hypertension, n (%)	51 (49.0)	33 (55.0)	0.462
Diabetes mellitus, n (%)	20 (19.2)	15 (25.0)	0.385
Dyslipidemia, n (%)	44 (42.3)	26 (43.3)	0.898
CHA <sub>2</sub> DS <sub>2</sub> -VASc score	2 (1-3)	2 (1-3)	0.181
Medications			
β blocker, n (%)	38 (36.5)	23 (38.3)	0.819
RAAS blockers, n (%)	26 (25.0)	25 (41.7)	0.026
Calcium channel blocker, n (%)	35 (33.7)	22 (36.7)	0.696
Statin, n (%)	30 (28.8)	17 (28.3)	0.944
Oral anti-diabetic drug, n (%)	17 (16.3)	11 (18.3)	0.745
Antiarrhythmic drug, n (%)	31 (29.8)	19 (31.7)	0.803
Laboratory data			
LDL cholesterol, mg/dl	115±33	116±28	0.872
HDL cholesterol, mg/dl	61±16	59±17	0.646
Triglyceride, mg/dl	97 (66-141)	109 (76-152)	0.208
Fasting blood glucose, mg/dl	104±36	109±35	0.170
eGFR, ml/min/1.73m <sup>2</sup>	68±15	65±15	0.197
C-reactive protein, mg/dl	0.06 (0.03-0.12)	0.08 (0.04-0.17)	0.109
BNP, pg/ml	46 (21-97)	56 (35-131)	0.218

AF = atrial fibrillation, BNP = B-type natriuretic peptide, eGFR = estimated glomerular filtration rate, HDL = high density lipoprotein, LA = left atrium, LDL = low density lipoprotein, LS-PeAF = long-standing persistent atrial fibrillation, PAF = paroxysmal atrial fibrillation, PeAF = persistent atrial fibrillation and RAAS = renin-angiotensin-aldosterone system.

**Table S3. Echocardiographic parameters at rest and PLL according to LA functional reserve.**

	Preserved LA functional reserve (N=104)			Impaired LA functional reserve (N=60)			P value (Rest)	P value (PLL)
	Rest	PLL	P value	Rest	PLL	P value		
LV end-diastolic volume index, ml/m <sup>2</sup>	41.2±11.1	43.4±11.2	0.001	39.1±11.2	40.4±11.3	0.118	0.228	0.088
LV end-systolic volume index, ml/m <sup>2</sup>	14.9±5.2	15.7±4.8	0.017	14.7±5.3	15.4±5.6	0.079	0.950	0.516
LV ejection fraction, %	63.9±6.1	63.8±6.0	0.885	63.0±6.7	62.3±6.4	0.305	0.400	0.135
LV mass index, g/m <sup>2</sup>	85.2±18.7	-	-	86.3±21.9	-	-	0.879	-
E wave, cm/s	73.3±19.6	80.8±18.0	<0.001	72.4±16.5	77.7±19.1	<0.001	0.962	0.295
e' wave, cm/s	8.7±2.3	9.8±2.5	<0.001	8.9±2.6	9.9±2.9	<0.001	0.706	0.916
E/e' ratio	8.8±2.8	8.7±2.5	0.511	8.6±2.5	8.3±2.3	0.155	0.933	0.230
LA volume index, ml/m <sup>2</sup>	35.5±13.8	36.8±13.6	0.0495	36.9±11.9	37.4±14.7	0.389	0.326	0.874
LARS, %	24.1±9.8	28.0±10.0	<0.001	24.1±9.9	21.4±9.4	<0.001	1.000	<0.001

E = early diastolic transmitral flow velocity, e' = early diastolic mitral annular velocity, LA = left atrium, LARS = left atrial reservoir strain, LV = left ventricle and PLL = passive leg lifting.

**Table S4. Change of postprocedural echocardiographic parameters through PLL.**

	PAF (N=90)	PeAF (N=43)	LS-PeAF (N=16)	P value
LV end-diastolic volume index, ml/m <sup>2</sup>	1.8±7.8	0.9±6.5	2.6±8.7	0.663
LV end-systolic volume index, ml/m <sup>2</sup>	0.7±3.5	0.2±3.4	0.7±3.6	0.577
LV ejection fraction, %	-0.3±4.7	0.4±4.8	0.7±5.8	0.721
E wave, cm/s	5.6±10.0	5.6±12.1	5.1±5.6	0.992
e' wave, cm/s	0.6±1.1	0.8±1.6	0.6±1.2	0.524
E/e' ratio	0.04±1.7	-0.4±2.5	0.1±1.4	0.364
LA volume index, ml/m <sup>2</sup>	1.6±4.8	1.6±5.2	2.4±5.1	0.656
LARS, %	0.9±3.7	1.6±4.1	1.0±3.3	0.618

E = early diastolic transmitral flow velocity, e' = early diastolic mitral annular velocity, LA = left atrium, LARS = left atrial reservoir strain, LS-PeAF = long-standing persistent atrial fibrillation, LV = left ventricle, PAF = paroxysmal atrial fibrillation, PeAF = persistent atrial fibrillation and PLL = passive leg lifting.