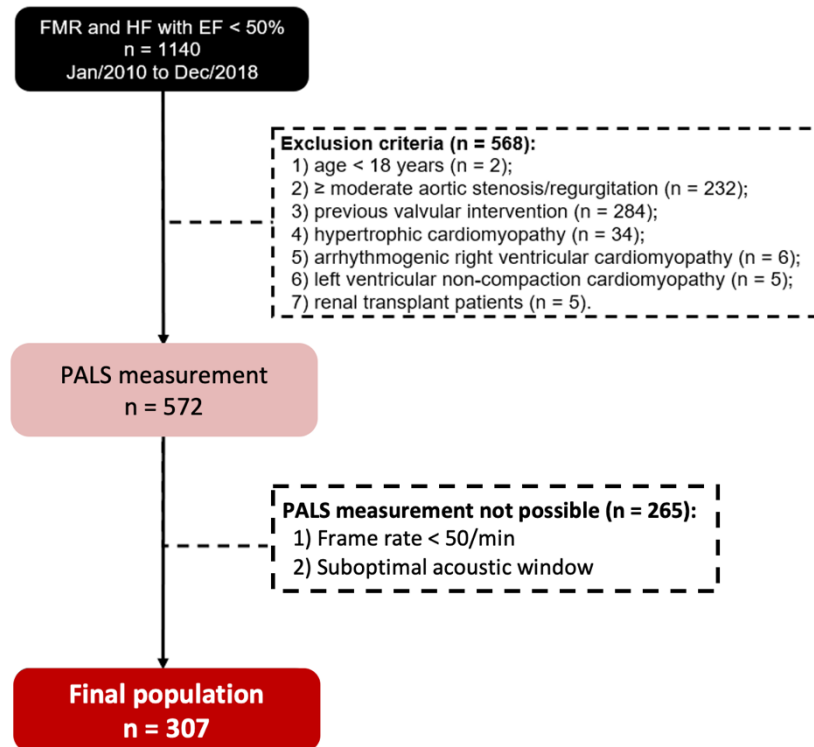


[SUPPLEMENTARY MATERIAL]

Supplementary Figure 1

Title – Study Flowchart



Supplementary Table 1

Title – Pairwise Log-Rank P-values for PALS and LAVI, PALS and history of AF, and PALS and EROA categories.

Legend – Pairwise comparison for PALS and LAVI, PALS and history of AF, and PALS and EROA categories. Groups for each category and abbreviations as in **Figure 5**.

	<i>PALS and LAVI</i>				<i>PALS and history of AF</i>				<i>PALS and EROA</i>			
	<i>(P-value)</i>				<i>(P-value)</i>				<i>(P-value)</i>			
	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>	<i>Group 4</i>	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>	<i>Group 4</i>	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>	<i>Group 4</i>
Group 1	-	0.003	<0.001	<0.001	-	0.04	<0.001	<0.001	-	<0.001	<0.001	<0.001
Group 2	-	-	0.343	<0.001	-	-	0.002	<0.001	-	-	0.642	<0.001
Group 3	-	-	-	0.041	-	-	-	0.173	-	-	-	<0.001
<i>Group 1 – PALS > 15% and LAVI < 48mL/m2</i>					<i>Group 1 – PALS > 15% and no AF</i>				<i>Group 1 – PALS > 15% and EROA < 10mm2</i>			
<i>Group 2 – PALS > 15% and LAVI ≥ 48mL/m2</i>					<i>Group 2 – PALS > 15% and AF</i>				<i>Group 2 – PALS > 15% and EROA ≥ 10mm2</i>			
<i>Group 3 – PALS ≤ 15% and LAVI < 48mL/m2</i>					<i>Group 3 – PALS ≤ 15% and no AF</i>				<i>Group 3 – PALS ≤ 15 % and EROA < 10mm2</i>			
<i>Group 4 – PALS ≤ 15% and LAVI ≥ 48mL/m2</i>					<i>Group 4 – PALS ≤ 15% and AF</i>				<i>Group 4 – PALS ≤ 15% and EROA ≥ 10mm2</i>			

Supplementary Table 2

Title – Cox proportional hazard model for all-cause mortality

Legend – PALS remained independently associated with all-cause mortality in a Cox proportional hazard model with progressively more clinical and echocardiographic variables. Abbreviations as in **Tables 1 and 2**.

	Adjusted HR	95% CI	P-value
Unadjusted	1.080	1.055–1.107	<0.001
Adjusted for age, sex, and creatinine	1.070	1.042–1.099	<0.001
Adjusted for sex, age, creatinine, LVEF and EROA	1.044	1.012–1.107	0.006
Adjusted for multiple clinical and echocardiographic variables *	1.052	1.010–1.095	0.016

* Adjusted for sex, age, creatinine, LVEF, EROA, arterial hypertension, atrial fibrillation, NYHA, ACEi/ARB, diuretics, LVEDV, LAVI, SPAP, TAPSE, at least moderate tricuspid regurgitation

Supplementary Table 3

Title – Multivariate Cox regression sensitivity analysis excluding patients with milder degrees of FMR (EROA < 0.1cm²)

Legend – After excluding patients with milder FMR (EROA < 0.1cm²), decreased values of PALS remained significantly associated with all-cause mortality. Abbreviations as in **Tables 1** and **2**.

	Multivariable Analysis		
	Adjusted HR	95% CI	P-value
Age, years	1.032	1.006–1.059	0.015
Creatinine, mg/dL	1.101	0.978–1.239	0.113
Hypertension	1.067	0.514–2.217	0.861
Atrial fibrillation	1.376	0.825–2.296	0.222
NYHA III/IV vs. I/II	0.968	0.590–1.588	0.896
ACEi/ARB	2.237	0.986–5.076	0.054
Diuretics	0.597	0.324–1.098	0.097
LVEDV, mL	1.004	1.000–1.009	0.040
LVEF, %	0.971	0.939–1.004	0.080
LAVI, mL/m ²	0.997	0.988–1.006	0.484
PALS, per % decrease	1.050	1.001–1.103	0.047
EROA, mm ²	1.029	0.999–1.060	0.062
SPAP, mmHg	1.010	0.992–1.028	0.268
TAPSE, mm	1.028	0.971–1.089	0.346
TR ≥ moderate	0.820	0.499–1.348	0.434

Supplementary Figure 2

Title – Correlation between PALS and GLS in patients with FMR

Legend – Pearson correlation analysis showing a strong linear inverse correlation between PALS and GLS ($r = -0.706$, $p < 0.001$). Abbreviations as in **Figure 1**.

