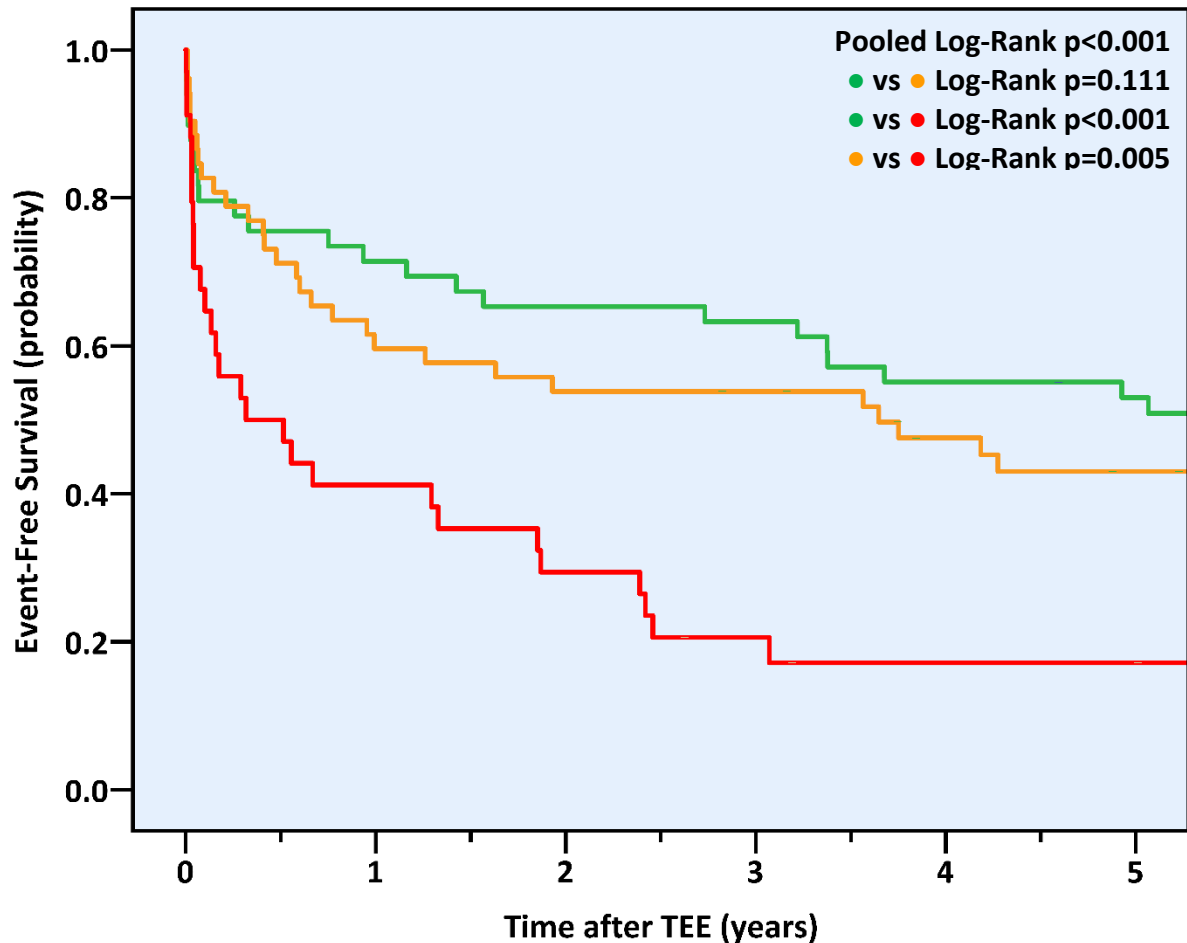


**Supplemental Figure S1.** Five-Year Cumulative Incidence of the Combined Outcome of All-Cause Mortality, Mitral Intervention, or New-Onset Atrial Fibrillation According to Detailed Pulmonary Venous Flow Pattern at Baseline



**No. at Risk**

<b>Normal PVFP</b>	49	35	32	31	27	24
<b>Blunted PVFP</b>	52	31	28	26	21	18
<b>Reversed PVFP</b>	34	14	10	6	4	4

PVFP = pulmonary venous flow pattern; TEE = transesophageal echocardiogram

**Supplemental Table S1.** Univariable Cox Proportional Hazard Model for the Combined Outcome of All-Cause Mortality, Mitral Intervention, or New-Onset Atrial Fibrillation at 5 Years

	HR (95% CI)	P-Value
<b>Clinical Variables</b>		
Age (continuous)	0.99 (0.98-1.01)	0.475
Sex Male	1.04 (0.68-1.59)	0.859
BMI (continuous)	1.01 (0.96-1.06)	0.835
BSA (continuous)	1.18 (0.44-3.18)	0.746
Hypertension	0.73 (0.48-1.10)	0.133
Diabetes Mellitus	0.87 (0.43-1.72)	0.679
NYHA Class (per 1 class rise)	1.36 (1.05-1.78)	<b>0.021</b>
<b>Echocardiographic Parameters</b>		
Severe MR	1.99 (1.27-3.13)	<b>0.003</b>
MR PISA EROA		
Continuous	4.86 (1.28-18.41)	<b>0.020</b>
≥0.4cm <sup>2</sup>	2.11 (1.06-4.21)	<b>0.033</b>
MR PISA RVol		
Continuous	1.01 (1.00-1.01)	0.064
≥60mL	1.71 (0.79-3.72)	0.175
Prolapse Site		
Anterior	0.49 (0.24-1.03)	0.059
Posterior	1.67 (1.06-2.63)	<b>0.028</b>
Both	0.78 (0.46-1.32)	0.359
LV ESD		
Continuous	0.99 (0.97-1.01)	0.318
≥40mm	0.56 (0.29-1.04)	0.068
LA Diameter		
Continuous	1.35 (1.02-1.79)	<b>0.015</b>
>55mm	1.48 (0.68-3.19)	0.325
LA Area		
Continuous	1.03 (1.01-1.050)	<b>0.017</b>
>20cm <sup>2</sup>	1.07 (0.69-1.73)	0.770
RV Dysfunction	3.35 (0.82-13.73)	0.093

## MR and PVFP Supplement

PASP		
Continuous	1.01 (0.99-1.03)	0.164
≥50mmHg	1.14 (0.69-1.86)	0.613
PVFP		<b>&lt;0.001</b>
Reversed (vs Normal)	2.79 (1.66-4.70)	<b>&lt;0.001</b>
Reversed (vs Non-Reversed)	2.28 (1.47-3.54)	<b>&lt;0.001</b>

Figures in bold denote statistical significance.

BMI = body mass index; CI = confidence interval; EROA = effective regurgitant orifice area; ESD = end systolic diameter; HR = hazard ratio; LA = left atrial; LV = left ventricular; MR = mitral regurgitation; PASP = pulmonary arterial systolic pressure; NYHA = New York Heart Association; PISA = proximal isovelocity surface area; PVFP = pulmonary venous flow pattern; RV = right ventricular; RVol = regurgitant volume

# MR and PVFP Supplement

**Supplemental Table S2.** Cox Proportional Hazard Model for the Separate Outcomes at 5 Years

	All-Cause Mortality				Mitral Intervention				New-Onset Atrial Fibrillation			
	Univariable		Multivariable		Univariable		Multivariable		Univariable		Multivariable	
	HR (95% CI)	P-Value	HR (95% CI)	P-Value	HR (95% CI)	P-Value	HR (95% CI)	P-Value	HR (95% CI)	P-Value	HR (95% CI)	P-Value
<b>Clinical Variables</b>												
Age (continuous)	1.08 (1.01-1.15)	0.027	1.07 (0.98-1.18)	0.145	0.99 (0.98-1.01)	0.405			1.04 (0.99-1.07)	0.070	1.03 (0.98-1.08)	0.261
Sex Male	1.94 (0.42-8.96)	0.398			1.26 (0.78-2.04)	0.336			0.72 (0.30-1.71)	0.456		
BMI (continuous)	1.16 (1.03-1.29)	0.011	1.26 (1.08-1.47)	<b>0.004</b>	1.01 (0.96-1.07)	0.675			1.02 (0.91-1.14)	0.726		
Hypertension	55.15 (0.33-92.51)	0.125			0.64 (0.42-0.99)	0.048	0.39 (0.22-0.67)	<b>0.001</b>	0.95 (0.41-2.21)	0.911		
Diabetes Mellitus	1.01 (0.13-7.94)	0.996			1.33 (0.67-2.66)	0.419			0.93 (0.22-3.96)	0.918		
NYHA Class (per 1 class rise)	2.19 (1.08-4.46)	0.031	2.36 (0.74-7.55)	0.148	1.59 (1.18-2.15)	0.002			1.39 (0.80-2.41)	0.245		
<b>Echocardiographic Parameters</b>												
Severe MR	0.91 (0.27-3.09)	0.873			1.97 (1.21-3.20)	0.006	1.51 (0.80-2.85)	0.205	5.63 (1.32-24.11)	0.020	6.21 (0.79-48.38)	0.081
MR PISA EROA												
Continuous	11.17 (0.59-21.85)	0.107			4.51 (1.10-18.36)	0.036			4.16 (0.68-25.60)	0.124		
≥0.4cm <sup>2</sup>	1.55 (0.16-14.90)	0.705			2.12 (1.00-4.48)	0.050			7.09 (0.92-54.57)	0.060		
MR PISA RVol												
Continuous	1.00 (0.99-1.02)	0.448			1.00 (0.99-1.01)	0.299			1.00 (0.99-1.01)	0.401		
≥60mL	33.79 (0.03-95.20)	0.455			1.35 (0.61-2.97)	0.459			36.85 (0.22-62.34)	0.168		
Prolapse Site												
Anterior	0.75 (0.10-5.86)	0.784			0.55 (0.26-1.20)	0.134			0.36 (0.05-2.68)	0.319		
Posterior	1.22 (0.32-4.59)	0.773			1.59 (0.98-2.58)	0.062	2.21 (0.89-4.11)	0.102	1.64 (0.60-4.44)	0.334		

## MR and PVFP Supplement

Both	0.92 (0.20-4.24)	0.910			0.77 (0.44-1.35)	0.363			0.85 (0.29-2.50)	0.763		
LV ESD												
Continuous	1.02 (0.95-1.08)	0.626			0.99 (0.97-1.02)	0.704			1.00 (0.96-1.05)	0.951		
≥40mm	2.09 (0.56-7.89)	0.276			0.60 (0.31-1.16)	0.126			0.79 (0.23-2.67)	0.706		
LA Diameter												
Continuous	1.26 (0.57-2.79)	0.572			1.16 (0.86-1.55)	0.331			1.34 (0.74-2.42)	0.328		
>55mm	4.15 (0.90-19.28)	0.069			0.91 (0.37-2.25)	0.838			0.84 (0.11-6.22)	0.861		
LA Area												
Continuous	1.04 (0.98-1.10)	0.251			1.02 (0.99-1.05)	0.117			1.06 (1.02-1.11)	0.006	1.06 (1.03-1.12)	<b>0.038</b>
>20cm <sup>2</sup>	1.40 (0.30-6.48)	0.667			1.21 (0.67-1.86)	0.661			3.40 (0.80-14.56)	0.099		
RV Dysfunction	0.05 (0.00-92.33)	0.774			2.47 (0.61-10.09)	0.207			33.34 (6.88-61.70)	<0.001	10.54 (1.17-94.99)	<b>0.036</b>
PASP												
Continuous	1.02 (0.98-1.07)	0.342			1.00 (0.99-1.02)	0.642			1.04 (1.01-1.06)	0.012	0.99 (0.96-1.04)	0.964
≥50mmHg	0.43 (0.06-3.33)	0.417			1.01 (0.59-1.73)	0.981			2.22 (0.90-5.44)	0.082		
PVFP												0.051
Reversed (vs Normal)	1.60 (0.23-11.36)	0.639			2.78 (1.61-4.81)	<0.001	1.98 (1.03-4.35)	<b>0.009</b>	1.55 (0.39-6.21)	0.534		
Reversed (vs Non-Reversed)	0.70 (0.15-3.23)	0.697			2.24 (1.42-3.54)	0.001	1.58 (1.35-2.97)	<b>0.016</b>	0.64 (0.22-1.89)	0.419		
<b>Competing Risks</b>												
Mitral Intervention Before AF	0.44 (0.14-1.45)	0.443			NA	NA			0.63 (0.27-1.45)	0.275		
New-Onset AF Before Mitral Intervention	1.07 (0.23-4.94)	0.933			0.54 (0.22-1.32)	0.175			NA	NA		

Figures in bold denote statistical significance.

## MR and PVFP Supplement

AF = atrial fibrillation; BMI = body mass index; CI = confidence interval; EROA = effective regurgitant orifice area; ESD = end systolic diameter; HR = hazard ratio; LA = left atrial; LV = left ventricular; MR = mitral regurgitation; MRA = mineralocorticoid receptor antagonist; NYHA = New York Heart Association; PASP = pulmonary arterial systolic pressure; PISA = proximal isovelocity surface area; PVFP = pulmonary venous flow pattern; RV = right ventricular; RVol = regurgitant volume