

**SUPPLEMENTARY DATA**

**Table 1 of the supplementary data.** Imputed values functional outcomes and predictors

	No prior PVR (n = 488 visits)	Prior PVR (n = 399 visits)
<i>CMR measurements</i>		
RVEDVi, mL/m <sup>2</sup>	141.1 [126.0-153.3]	126.1 [116.0-135.0]
RVEF, %	47.3 [45.1-50.0]	45.2 [42.0-47.5]
LVEDVi, mL/m <sup>2</sup>	84.8 [78.9-92.0]	87.3 [83.0-91.3]
LVEF, %	57.0 [54.0-59.3]	56.6 [54.5-58.0]
PR fraction, %	32.0 [27.0-38.8]	17.3 [13.8-20.2]
<i>Echocardiographic measurements</i>		
LVEF, %	59.0 [55.0-62.0]	59.0 [55.0-62.0]
Tricuspid annular systolic velocity, cm/s	9.7 [8.8-10.7]	8.2 [7.0-9.0]
TAPSE, mm	17.6 [16.0-20.0]	15.4 [14.0-17.0]
Right ventricular fractional area change, %	39.5 [36.0-43.0]	37.0 [33.0-40.0]
Peak systolic gradient across RVOT, mmHg	20.6 [15.8-25.0]	27.0 [19.0-34.0]
Systolic RV/RA-pressure gradient, mmHg	30.6 [26.0-36.3]	35.3 [30.0-40.0]
<i>Electrocardiogram</i>		
Maximal QRS width on ECG, ms	145.4 [130.0-160.0]	150.1 [140.0-160.0]
<i>Cardiopulmonary exercise testing</i>		
Peak VO <sub>2</sub> , mL/min/kg	27.0 [22.3-30.0]	26.5 [23.3-28.8]
Peak workload, W	156.1 [123.0-171.4]	150.2 [128.3-163.9]
<i>Natriuretic peptides</i>		
NT-proBNP, pg/mL	181.4 [120.4-288.7]	187.5 [123.3-265.7]

CMR, cardiac magnetic resonance imaging; ECHO, transthoracic echocardiography; LVEDVi, left ventricular enddiastolic volume normalized to body surface area; LVEF, left ventricular ejection fraction; NT-proBNP, N-terminal fraction of pro-B-type natriuretic peptide; Peak VO<sub>2</sub>, maximal O<sub>2</sub>-consumption on cardio-pulmonary exercise testing; PVR, pulmonary valve replacement; RVEDVi, right ventricular enddiastolic volume, normalized to body surface area; RVEF, right ventricular ejection fraction; RV/RA-pressure gradient, systolic pressure gradient between right ventricle and right atrium.

The data are presented as median [interquartile range].

**Table 2 of the supplementary data.** Pooled estimates for primary and secondary outcome variables

	Estimate	95%CI	P
<i>RVEF, %</i>			
Age at visit	-0.06	-0.15 to 0.03	.514
PVR (yes)	-2.80	-8.09 to 2.48	.300
MRI PR fraction	-0.05	-0.11 to 0.02	.180
Palliation (yes)	-1.68	-3.52 to 0.17	.075
Male sex (yes)	-2.15	-3.87 to -0.44	.014
Age at visit × PVR	-0.03	-0.18 to 0.12	.712
PVR (yes) x MRI PR fraction	0.04	-0.07-0.14	.521
<i>RVEDVi, mL/m<sup>2</sup></i>			
Age at visit	-0.11	-0.52 to 0.31	.620
PVR (yes)	-11.29	34.86 to 12.27	.346
MRI PR fraction	0.57	0.29 to 0.86	< .001
Palliation (yes)	2.86	-5.45 to 11.17	.499
Male sex (yes)	13.38	5.56 to 21.20	.001
Age at visit × PVR	0.10	-0.48 to 0.68	.732
PVR (yes) x MRI PR fraction	-0.33	-0.83 to 0.18	.202
<i>LVEF, %</i>			
Age at visit	-0.14	-0.28 to 0.003	.056
PVR (yes)	-1.90	-7.55 to 3.75	.508
MRI PR fraction	-0.002	-0.08 to 0.07	.952
Palliation (yes)	0.40	-1.32 to 2.11	.648
Male sex (yes)	-2.49	-4.10 to -0.88	.002
Age at visit × PVR	0.07	-0.10 to 0.24	.407
PVR (yes) x MRI PR fraction	-0.003	-0.10 to 0.10	.947
<i>LVEDVi, mL/m<sup>2</sup></i>			
Age at visit	0.68	0.25 to 1.12	.003
PVR (yes)	14.31	-2.67 to 31.29	.098
MRI PR fraction	-0.17	-0.35 to 0.01	.068
Palliation (yes)	-4.55	-9.43 to 0.31	.067
Male sex (yes)	7.22	2.73 to 11.72	.002
Age at visit × PVR	-0.58	-1.11 to -0.06	.029
PVR (yes) x MRI PR fraction	0.13	-0.12 to 0.38	.309

<i>Peak WL, Watt</i>			
Age at visit	-1.30	-2.15 to -0.45	.003
PVR (yes)	-37.58	-82.74 to 7.59	.102
MRI PR fraction	-0.06	-0.46 to 0.34	.758
Palliation (yes)	-8.88	20.03 to 2.26	.118
Male sex (yes)	32.32	21.14 to 43.50	< .001
Age at visit × PVR	0.83	-0.41 to 2.08	.188
PVR (yes) × MRI PR fraction	0.02	-0.63 to 0.68	.941
<i>Log(NT-proBNP), ng/l</i>			
Age at visit	0.04	0.02 to 0.05	< .001
PVR (yes)	0.05	-0.69 to 0.79	.896
MRI PR fraction	0.000	-0.01 to 0.01	.895
Palliation (yes)	0.07	-0.14 to 0.28	.534
Male sex (yes)	-0.29	-0.49 to -0.08	.006
Age at visit × PVR	-0.004	-0.02 to 0.01	.683
PVR (yes) × MRI PR fraction	0.003	-0.01 to 0.02	.644

95%CI, 95% confidence interval; LVEDVi, left ventricular enddiastolic volume normalized to body surface area; LVEF, left ventricular ejection fraction; MRI, magnetic resonance; PR, pulmonary valve regurgitation; PVR, pulmonary valve replacement; RVEDVi, right ventricular enddiastolic volume, normalized to body surface area; WL, peak workload on cardiopulmonary exercise testing.

Pooled estimates for primary and secondary outcome variables from linear mixed models considering the interaction between PVR and PR fraction assessed by MRI. Linear mixed models estimated using NLME package by restricted maximum likelihood, with patient-specific random intercepts nested in treatment centers. The data contained imputed records for 887 visits by 307 unique patients.

**Table 3 of the supplementary data.** Complete cases analysis for primary and secondary outcome variables from linear mixed models

	Estimate	95%CI	P	Visits (n)	Patients (s)
<i>RVEF, %</i>				515	234
Age at visit	-0.05	-0.13 to 0.03	.260		
PVR (yes)	-1.20	-4.76 to 2.36	.510		
Palliation (yes)	-3.10	-5.18 to 1.03	.004		
Male sex (yes)	-3.35	-5.32 to -1.38	< .001		
Age at visit × PVR	-0.03	-0.13 to 0.08	.630		
<i>RVEDVi, mL/m<sup>2</sup></i>				509	231
Age at visit	-0.12	-0.49 to 0.26	.540		
PVR (yes)	-41.05	-56.01 to -26.10	< .001		
Palliation (yes)	9.21	-1.85 to 20.27	.100		
Male sex (yes)	24.58	14.08 to 35.08	< .001		
Age at visit × PVR	-0.16	-0.59 to 0.28	.480		
<i>LVEF, %</i>				496	232
Age at visit	-0.06	-0.14 to 0.01	.098		
PVR (yes)	1.72	-1.73 to 5.17	.330		
Palliation (yes)	0.42	-1.30 to 2.13	.630		
Male sex (yes)	-4.40	-6.03 to -2.77	< .001		
Age at visit × PVR	-0.04	-0.14 to 0.06	.420		
<i>LVEDVi, mL/m<sup>2</sup></i>				438	224
Age at visit	0.54	0.33 to 0.75	< .001		
PVR (yes)	10.20	0.25 to 20.15	.045		
Palliation (yes)	-7.67	-12.88 to -2.46	.004		
Male sex (yes)	14.11	9.21 to 19.00	< .0001		
Age at visit × PVR	-0.29	-0.57 to -0.01	.041		
<i>Peak WL, Watt</i>				470	267
Age at visit	-1.70	-2.25 to -1.16	< .001		
PVR (yes)	-57.35	-86.74 to -27.96	< .001		
Palliation (yes)	-14.66	-26.83 to -2.49	.018		
Male sex (yes)	62.05	50.65 to 73.44	< .001		
Age at visit × PVR	1.09	0.31 to 1.88	.006		
<i>Log(NT-proBNP), ng/L</i>				441	225
Age at visit	0.04	0.03 to 0.05	< .001		
PVR (yes)	0.24	-0.38 to 0.86	.440		
Palliation (yes)	0.08	-0.18 to 0.34	.540		

Male sex (yes)	-0.58	-0.82 to -0.35	< .001		
Age at visit × PVR	-0.002	-0.02 to 0.01	.830		

CI: confidence interval; PVR, pulmonary valve replacement; RVEDVi, right ventricular end-diastolic volume, normalized to body surface area; LVEF, left ventricular ejection fraction; LVEDVi, left ventricular end-diastolic volume normalized to body surface area; WL, peak workload on cardiopulmonary exercise testing

Linear mixed models estimated using NLME package by restricted maximum likelihood, with patient-specific random intercepts nested in treatment centers. The data consisted of all complete records.