

Table S1 Assessment of proportional hazard assumption on univariable analysis using Schoenfeld residual

Variables	P value*
Clinical variables	
Sex	0.249
Age	0.913
BSA	0.506
History of coronary artery disease	>0.999
Preoperative echocardiography	
Preoperative TR grade (binary)	0.253
TV annulus diameter (mm)	0.922
TV annulus diameter/BSA (mm/m ²)	0.157
Preoperative RVSP (mmHg)	0.867
Preoperative CT	
TAD _{4ch} /BSA (mm/m ²)	0.373
TAD _{LA} /BSA (mm/m ²)	0.910
TAD _{avg} /BSA (mm/m ²)	0.743
RVEDV/BSA (mL/m ²)	0.270
RVESV/BSA (mL/m ²)	0.874
RVSV/BSA (mL/m ²)	0.371
RVEF (%)	0.977
Postoperative CT	
RVEDV/BSA (mL/m ²)	0.924
RVESV/BSA (mL/m ²)	0.654
RVSV/BSA (mL/m ²)	0.465
RVEF (%)	0.905
Postoperative RV volume change	
Change in RVEDV/BSA (%)	0.396
Change in RVESV/BSA (%)	0.389
Change in RVSV/BSA (%)	0.605
Change in RVEF (%)	0.740

*, P value >0.05 indicates that the variable satisfies the proportional hazard assumption.

Table S2 Assessment of proportional hazard assumption on age-adjusted model using Schoenfeld residual

Variables	P value for index variable*	P value for age*	P value for adjusted model*
Preoperative echocardiography			
Preoperative TR grade (binary)	0.250	0.947	0.510
TV annulus diameter (mm)	0.946	0.910	0.993
TV annulus diameter/BSA (mm/m ²)	0.199	0.652	0.439
Preoperative RVSP (mmHg)	0.868	0.993	0.986
Preoperative CT			
TAD _{4ch} /BSA (mm/m ²)	0.413	0.848	0.705
TAD _{LA} /BSA (mm/m ²)	0.957	0.867	0.981
TAD _{avg} /BSA (mm/m ²)	0.755	0.879	0.951
RVEDV/BSA (mL/m ²)	0.335	0.846	0.605
RVESV/BSA (mL/m ²)	0.816	0.961	0.973
RVSV/BSA (mL/m ²)	0.372	0.647	0.640
RVEF (%)	0.908	0.646	0.898
Postoperative CT			
RVEDV/BSA (mL/m ²)	0.878	0.940	0.976
RVESV/BSA (mL/m ²)	0.476	0.987	0.761
RVSV/BSA (mL/m ²)	0.635	0.834	0.893
RVEF (%)	0.674	0.938	0.913
Postoperative RV volume change			
Change in RVEDV/BSA (%)	0.450	0.845	0.750
Change in RVESV/BSA (%)	0.556	0.991	0.838
Change in RVSV/BSA (%)	0.529	0.881	0.795
Change in RVEF (%)	0.449	0.990	0.623

*, P value >0.05 indicates that the variable satisfies the proportional hazard assumption.

Table S3 Optimal cutoff values for classification of groups for survival comparison

Variables	Cut off value
TAD/BSA on echocardiography (mm)	>26.1
TAD _{4ch} /BSA (mm/m ²) on preoperative CT	>27.7
RVEDV/BSA (mL/m ²) on preoperative CT	>169.2
RVSV/BSA (mL/m ²) on preoperative CT	>37.2
Postoperative RVEDV/BSA decrease (%)	<-40.5%

Table S4 Comparison of CT parameters between patients with smaller RV volume decrease and patients with great RV volume decrease

Variables	Preoperative RVEDV/BSA ≤169.2 mL/m ²			Preoperative RVEDV/BSA >169.2 mL/m ²		
	Patients with smaller RV volume decrease (n=49)	Patients with greater RV volume decrease (n=4)	P value	Patients with smaller RV volume decrease (n=5)	Patients with greater RV volume decrease (n=8)	P value
Clinical finding						
Female sex	25 (51.0)	3 (75.0)	0.687	3 (60.0)	5 (62.5)	>0.999
Age (years)	64.0 [54.0; 72.0]	47.5 [45.0; 54.5]	0.029	73.0 [61.0; 75.0]	70.0 [56.0; 76.0]	0.714
BSA	1.6 [1.6; 1.8]	1.7 [1.6; 1.9]	0.363	1.5±0.2	1.7±0.2	0.121
Echocardiographic parameter						
TR grade (severe)	8 (16.3)	3 (75.0)	0.032	4 (80.0)	5 (62.5)	0.962
TV annulus diameter/BSA (mm/m ²)	23.0±3.1	24.3±2.2	0.43	25.4±3.6	28.5±5.4	0.29
Preoperative RVSP (mmHg)	43.7±11.8	42.0±11.7	0.778	67.2±13.7	56.8±20.4	0.336
Postoperative TR grade (≥moderate)	0 (0)	0 (0)	>0.999	1 (20.0)	3 (37.5)	>0.999
Postoperative RVSP (mmHg)	27.6±7.4	31.0±13.7	0.468	38.5 ±13.3	40.5±17.5	0.846
Preoperative CT parameter						
TV annulus						
TAD _{4ch} /BSA (mm/m ²)	25.4±3.0	25.5±0.7	0.862	30.0±3.3	29.7±5.2	0.903
TAD _{L_A} /BSA (mm/m ²)	26.7±3.5	26.2±4.8	0.769	30.0±3.9	27.9±5.7	0.487
TAD _{avg} /BSA (mm/m ²)	26.5±2.9	27.0±1.9	0.772	29.7±3.7	29.0±5.0	0.79
RV parameters						
RVEDV/BSA (mL/m ²)	117.5±21.1	157.7±10.2	<0.001	201.3 [190.1; 203.7]	198.2 [185.3; 220.8]	0.943
RVESV/BSA (mL/m ²)	59.1 [51.9; 68.9]	79.2 [76.5; 81.5]	0.015	105.6±30.8	107.3±33.9	0.93
RVSV/BSA (mL/m ²)	28.5±5.8	28.6±5.6	0.952	34.7±7.0	31.0±11.8	0.549
RVEF (%)	47.2±8.0	49.7±4.7	0.54	49.9±6.7	49.6±14.7	0.977
Postoperative CT parameter						
RV parameters						
RVEDV/BSA (mL/m ²)	98.2±15.9	84.8±11.6	0.108	134.7 [127.1; 137.3]	102.8 [99.4; 115.2]	0.045
RVESV/BSA (mL/m ²)	51.4±13.2	52.4±4.5	0.892	72.7 [68.5; 73.4]	60.1 [53.9; 63.7]	0.019
RVSV/BSA (mL/m ²)	44.5 [40.2; 51.1]	30.6 [26.7; 38.2]	0.02	67.2 [53.7; 68.8]	43.7 [40.2; 59.9]	0.222
RVEF (%)	47.9±8.6	37.8±4.9	0.026	45.0±5.9	45.2±10.2	0.959
Perioperative change in RV parameters						
Change in RVEDV/BSA (%)	-16.8 [-23.8; -6.9]	-45.0 [-51.5; -40.9]	0.001	-34.4±6.4	-47.1±5.5	0.003
Change in RVESV/BSA (%)	-13.9±23.6	-33.6±7.8	0.106	-27.2±12.2	-40.1±13.4	0.11
Change in RVSV/BSA (%)	62.2 [25.9; 87.9]	16.0 [2.2; 24.2]	0.018	89.7±84.2	83.2±71.5	0.884
Change in RVEF (%)	1.0±11.3	-11.8±3.9	0.03	-4.9±9.8	-4.4±11.3	0.937
Postoperative adverse event	0 (0)	0 (0)	>0.999	3 (60.0)	5 (62.5)	>0.999

Data are presented as the n (%), mean ± standard deviation, or median [25th to 75th percentile].