

Risk Factors for Recurrent Tricuspid Regurgitation after Pulmonary Thromboendarterectomy for Chronic Thromboembolic Pulmonary Hypertension

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Background

- Many patients with CTEPH have functional tricuspid regurgitation (TR).¹
- Previous recommendation for CTEPH recommends against concomitant TVr with PTE.²
- Early residual TR after PTE is associated with mortality and adverse events.³

Objectives & Methods

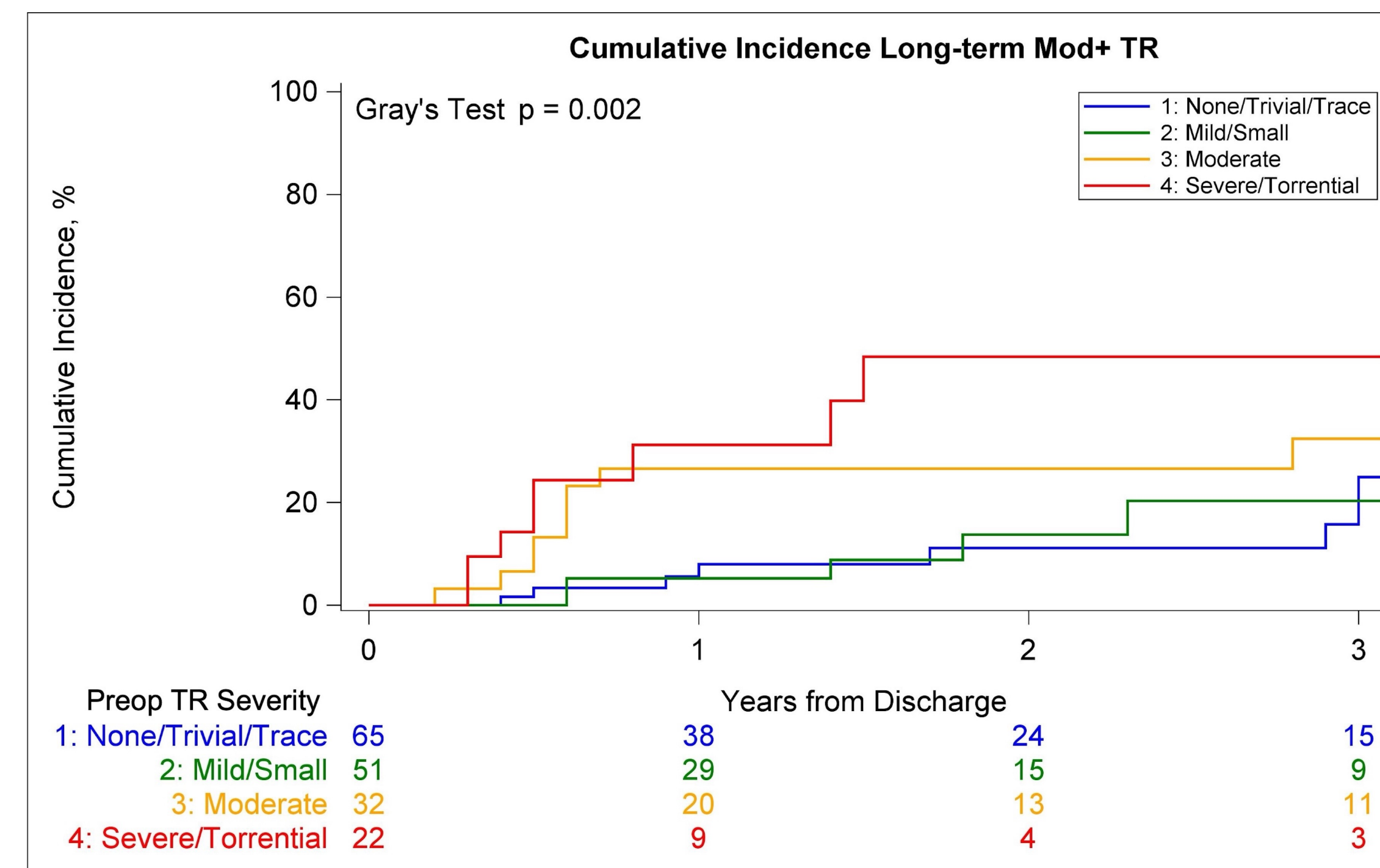
- **Primary Objective:** Identify predictors of recurrent \geq moderate TR
- **Design:** Retrospective cohort study
- 170 PTE patients from 5/2016 – 9/2025
- **Endpoint:** \geq Moderate TR after discharge

Cohort Characteristics

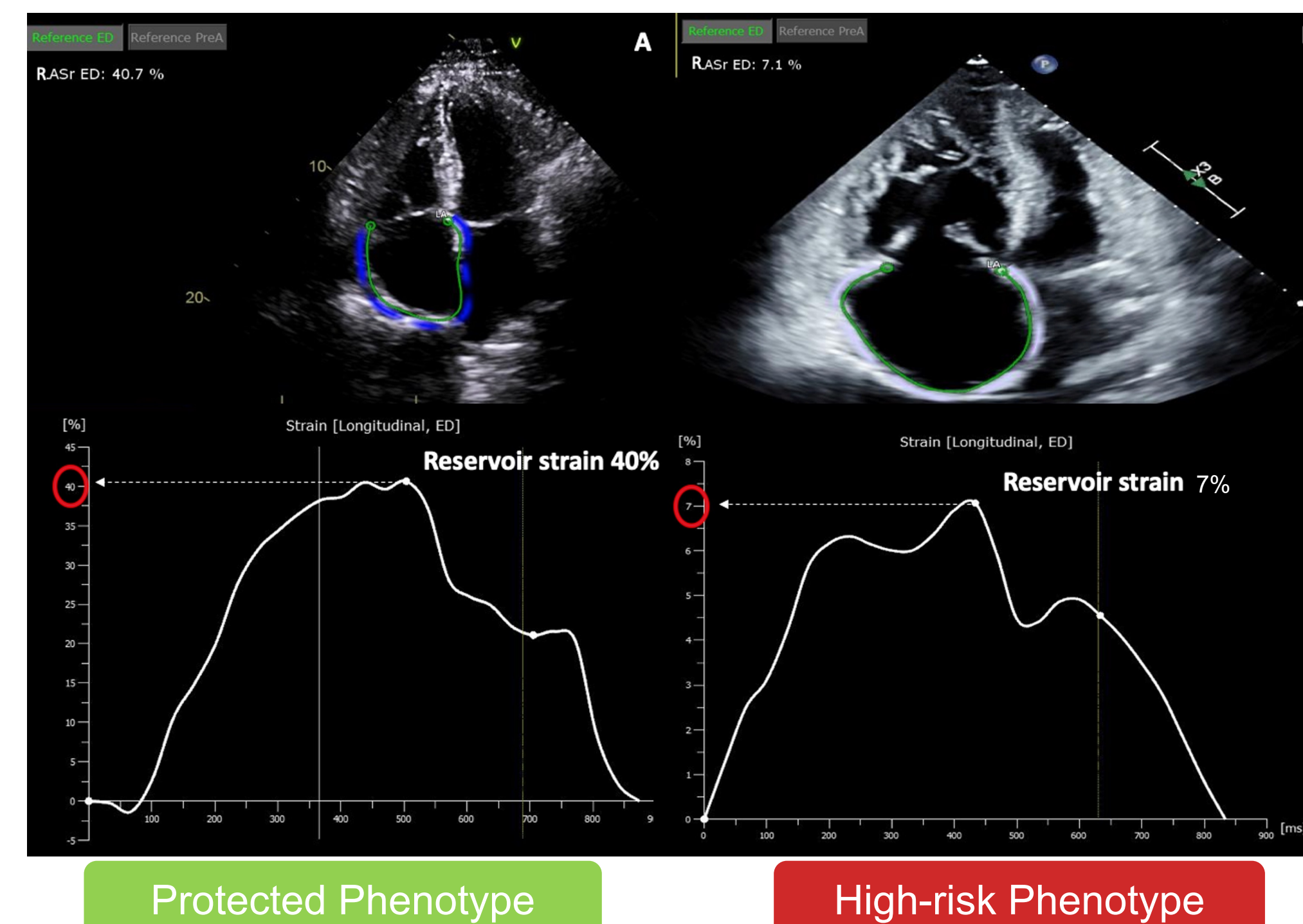
Variables	All (n=170)	No Recurrent TR (N=134)	Recurrent TR (N=36)	P
Age, y	54.6 \pm 14.7	54.5 \pm 14.4	55.1 \pm 16.2	.860
Female	104 (60)	74 (55.2)	27 (75.0)	.051
PVR, WU	6.3 (3.9, 9.4)	6.1 (3.9, 9.1)	7.2 (4.5, 10.8)	.065
mPAP, mmHg	43 (34, 50)	41 (33, 51)	48 (40, 50)	.123
NYHA Class III/IV	133 (80.5)	102 (77.8)	30 (90.9)	.091
O ₂ Therapy	62 (36.5)	45 (33.6)	17 (47.2)	.189
PH Medical Therapy	98 (58.3)	71 (53.8)	27 (75.0)	.036
Preop TR Severity				<.001
None-Mild TR	116 (68.2)	101 (75.4)	15 (41.7)	
Mod-Severe TR	54 (31.8)	33 (24.6)	21 (58.3)	

Continuous variables: mean \pm SD or median (IQR); categorical variables: n (%)

Preop TR Severity Correlates with Recurrent TR



RA Reservoir Strain Buffers Hemodynamic Loading



RA Reservoir Strain Predicts Recurrent TR

Variable	aHR	95% CI	p
Preoperative			
Moderate-severe TR	2.22	1.10–4.51	.027
RASr (per 1% decrease)	1.03	1.01–1.05	.017
TAD (per mm)	1.03	0.97–1.10	.285
TAD >4 cm	1.11	0.55–2.25	.763
Indexed TAD (per mm/m ²)	1.07	0.97–1.18	.176
Pre-discharge			
Mild TR vs none/trivial	3.05	1.42–6.58	.004
Mod-severe TR vs none/trivial	5.48	2.47–12.19	<.001
PVR (per WU)	1.01	1.001–1.009	.007

Conclusion

- Routine TVr should be considered for preoperative severe TR regardless of annulus size
- RASr may guide TVr decisions in moderate TR and post-discharge surveillance
- Larger, multi-institutional cohort is required to better understand drivers of long-term mortality

References

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