SUPPLEMENTARY DATA

Table S1. Sensitivity analysis adjusting for study center in the multivariable logistic regression model for prevalent HF hospitalization

Variable	OR (95%CI)	*P*
Male sex	1.84 (1.22-2.78)	.004
Organic TR	1.88 (0.76-4.68)	.172
Functional TR associated with left-sided valvular disease	1.52 (0.71-3.28)	.281
Functional TR associated with LV systolic dysfunction or primary RV disease	3.42 (1.08-10.81)	.036
Functional TR associated with pulmonary hypertension	3.13 (1.33-7.38)	.009
sPAP, per mmHg	1.01 (1.00-1.02)	.049
LV systolic dysfunction	1.88 (1.10-3.20)	.020
Chronic kidney disease	1.34 (0.92-1.95)	.132
Obstructive sleep apnea	1.59 (0.88-2.88)	.124
Right-sided HF	7.26 (4.34-12.17)	< .001
Study center 2	3.30 (1.45-7.53)	.004
Study center 3	2.54 (1.14-5.67)	.023

HF, heart failure; LV, left ventricle; OR, odds ratio; sPAP, systolic pulmonary artery pressure; TR, tricuspid regurgitation.

Sensitivity analysis including study center as a fixed effect in the multivariable logistic regression model for prevalent HF hospitalization. The main predictors identified in the primary analysis remained materially unchanged after adjustment for center.

Table S2. Sensitivity analysis evaluating the linearity assumption for systolic pulmonary artery pressure

sPAP quartiles	sHR (95%CI)	*P*
Q1 (reference)	1.00	—
Q2	1.13 (0.72-1.77)	.596
Q3	1.11 (0.73-1.71)	.622
Q4	1.46 (0.93-2.30)	.100

Q, quartile; sHR, subdistribution hazard ratio; sPAP, systolic pulmonary artery.

Adjustment variables (footnote): adjusted for previous HF hospitalization, NYHA functional class III-IV, tricuspid valve surgery (time-dependent covariate), and study center. Death was treated as the competing event.

The absence of statistically significant departures across sPAP quartiles supports the use of sPAP as a continuous variable in the primary model, although a non-linear relationship cannot be completely excluded.

Table S3. Assessment of the proportional subdistribution hazards assumption in the Fine-Gray model

Predictor	Interaction with follow-up time, *P*	Interaction with log follow-up time, *P*
sPAP	.686	.573
Previous HF hospitalization	.519	.190
NYHA class III–IV	.019	.010
Tricuspid valve surgery	.100	.200

HF, heart failure; NYHA, New York Heart Association; sPAP, systolic pulmonary artery pressure.

The proportional subdistribution hazards assumption was assessed using Fine-Gray models with time-varying coefficients, including interactions with both linear follow-up time and log-transformed follow-up time. A significant interaction suggests a time-varying effect.

Table S4. Time-varying subdistribution hazard ratio of NYHA class III-IV in the Fine-Gray model

Follow-up time	Estimated sHR
1 year	1.80
3 years	1.24
5 years	1.05
7 years	0.95

NYHA, New York Heart Association; sHR, subdistribution hazard ratio.

Estimated subdistribution hazard ratios were derived from the Fine-Gray model incorporating a time-varying coefficient for NYHA class III-IV. The effect progressively attenuated over time and approached the null value at later follow-up periods.

Table S5. Sensitivity analysis considering tricuspid valve surgery as an additional competing event in the Fine-Gray model for incident HF hospitalization

Variable	sHR (95%CI)	*P*
sPAP, per mmHg	1.01 (1.00-1.02)	.003
Previous HF hospitalization	2.13 (1.53-2.98)	< .001
NYHA functional class III-IV	1.66 (1.19-2.31)	.003

HF, heart failure; NYHA, New York Heart Association; sHR, subdistribution hazard ratio; sPAP, systolic pulmonary artery pressure.

Sensitivity analysis in which tricuspid valve surgery was treated as an additional competing event together with all-cause mortality, rather than as a time-dependent covariate. The main predictors identified in the primary Fine-Gray model remained materially unchanged, supporting the robustness of the findings to alternative handling of surgical intervention during follow-up.

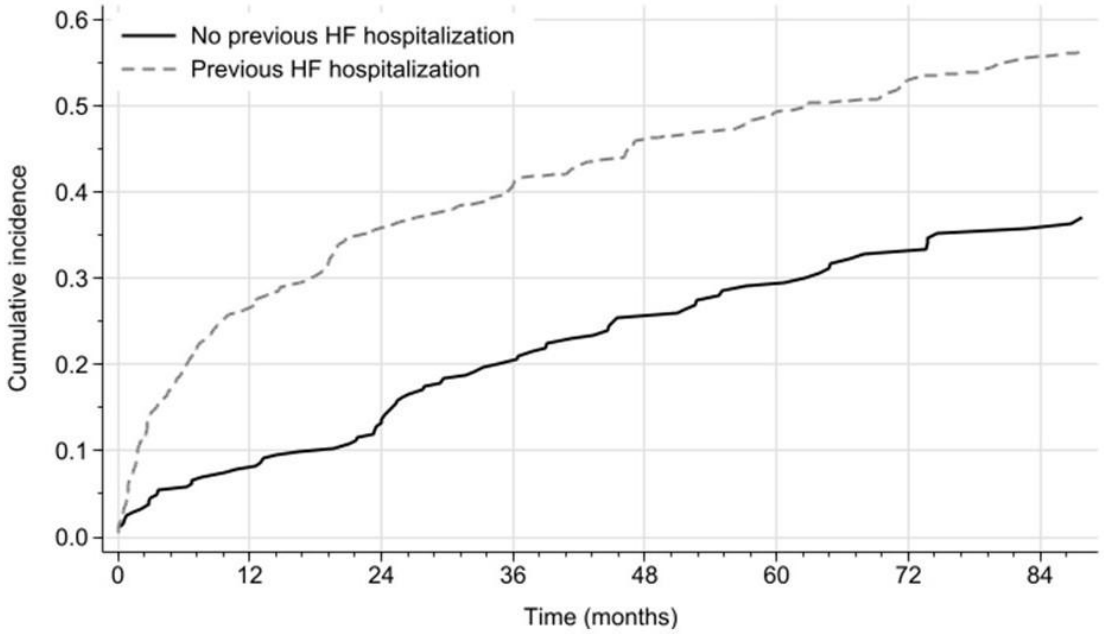
Table S6. Sensitivity analysis adjusting for study center in the Fine-Gray model for incident HF hospitalization

Variable	sHR (95%CI)	*P*
sPAP, per mmHg	1.01 (1.00-1.02)	.032
Previous HF hospitalization	2.12 (1.52-2.94)	< .001
NYHA functional class III-IV	1.69 (1.22-2.33)	.001
Tricuspid valve surgery (time-dependent covariate)	0.56 (0.32-0.96)	.034
Study center 2	0.86 (0.47-1.58)	.619
Study center 3	0.75 (0.43-1.31)	.314

HF, heart failure; NYHA, New York Heart Association; sHR, subdistribution hazard ratio; sPAP, systolic pulmonary artery pressure.

Sensitivity analysis including study center as a fixed effect in the Fine-Gray competing-risk model for incident HF hospitalization. All-cause mortality was considered the competing event. The main predictors identified in the primary analysis remained materially unchanged after adjustment for center.

Figure S1. Cumulative incidence of first heart failure hospitalization after diagnosis of significant tricuspid regurgitation, stratified by previous heart failure hospitalization. Death was considered a competing event.



No previous HF hospitalization (at risk)								
	242	201	171	135	111	89	74	58
Previous HF hospitalization (at risk)								
	225	156	122	98	78	62	49	39