



Predictors of prognosis for isolated tricuspid regurgitation after left -sided valve surgery: degree of myocardial fibrosis

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Objective

Isolated tricuspid valve surgery following left-sided valve surgery is considered a high-risk procedure, and the timing of the procedure is critical to patient survival. We sought to analyze data from consecutive patients undergoing isolated tricuspid valve surgery to identify factors that predict the prognosis of the procedure and thus guide clinical decision making.

Methods

A total of 90 patients who underwent minimally invasive tricuspid valve surgery for tricuspid regurgitation after previous left heart valve surgery in Hospital from Jan 2015 and Oct 2022 were retrospectively analyzed, all patients were followed up and risk factors were statistically analyzed.

Results

All patients were followed up, 2 perioperative deaths and 8 deaths 2-3 years after discharge in 90 patients, with 30-days mortality rate of 2.2% and overall mortality rate of 11.1%. In the univariate regression analysis, age, preoperative creatinine, right atrial diameter, tricuspid regurgitation area, and severe myocardial fibrosis were strongly associated with poor prognosis, and in the multifactorial regression analysis, severe myocardial fibrosis was an independent influence on poor prognosis(Table1).

Table1

Variables	Univariate analysis			Multivariate analysis		
	HR	95%CI	P value	HR	95%CI	P value
Age(years)	0.9	0.82-0.99	0.03	0.876	0.76-0.99	0.33
Female	0.44	0.12-1.71	0.24			
Hypertension	0.61	0.12-3.10	0.55			
Pre-op creatinine (umol/l)	0.98	0.96-1.00	0.04	0.99	0.96-1.02	0.67
Total bilirubin (umol/l)	1	0.90-1.06	0.99			
Right atrial (mm)	0.96	0.92-1.00	0.037	0.96	0.88-1.04	0.27
Area of tricuspid regurgitation (cm ²)	0.93	0.88-0.99	0.023	1.01	0.90-1.13	0.91
Severe myocardial fibrosis	23.67	5.20-107.66	<0.001	0.06	0.08-0.40	0.004

Conclusions

The degree of myocardial fibrosis can be used as an indicator to assess the risk and prognosis of isolated tricuspid valve surgery. Surgery should be performed before significant myocardial fibrotic lesions occur in the right heart myocardium.