

Predictors of successful tricuspid transcatheter edge-to-edge repair: data from the FUTILIDAD-IT registry

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BACKGROUND

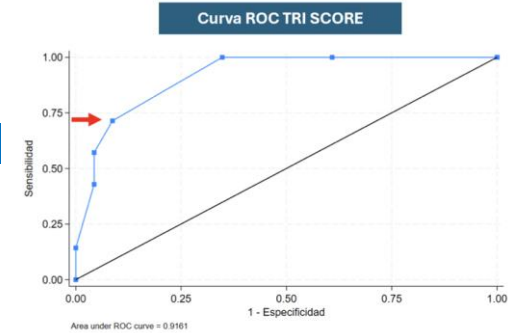
Tricuspid regurgitation (TR) is a common disease with a progressive increase in mortality with increasing disease severity. Transcatheter therapies for the treatment of TR is a new intervention and may offer an alternative to surgery

METHODS

From August 2021 to June 2024, 41 patients with significant tricuspid regurgitation who were candidates for treatment were enrolled in the FUTILIDAD-IT registry, a single-centre registry of the Vall D'Hebron University Hospital. We assessed baseline characteristics, described interventions and present data from a 6-month follow-up. Finally, we evaluated which variables correlated with successful percutaneous edge-to-edge repair.

RESULTS

The most common cardiovascular risk factors were atrial fibrillation (70%), arterial hypertension (56%) and dyslipidaemia (44%). 22% of patients had PMK/ICD and 10% had concomitant left valve pathology. 63% had edema, a clinical signs of right heart failure, and 39% were in NYHA class III-IV. On baseline echocardiography, 22% had torrential TR, 44% had massive TR, and 34% had severe TR. The most common aetiology was functional atrial (54%) and functional ventricular (24%). 25% had severe right ventricular dilatation and 61% had mild to moderate dilatation, while 37% had moderate/severe right ventricular dysfunction. 12% of patients underwent surgery and 88% underwent percutaneous intervention. 66% of patients had a positive interventional outcome, defined as mild to moderate tricuspid regurgitation after treatment. At 6 months follow-up, 28% of patients were in NYHA class III-IV and 50% had mild or mild-to-moderate tricuspid regurgitation. The severity of tricuspid regurgitation, the TRI-SCORE and the numbers of clips implanted were associated with the success of transcatheter repair.



Demographic Characteristics	
Age	67±12
Sex	M 15(37) F 26(63)
BMI	27,3±6,5
Comorbidity	
Atrial Fibrillation	29(70)
Arterial Hipertension	23(56)
Diabetes Mellitus	7(17)
Dyslipidaemia	18(44)
Smoke	6(15)
Chronic Coronary Syndrome	6(15)
Chronic Kidney Disease	15(37)
PMK/ICD	9(22)
Eurscore II	5,6±4,1
TRI-SCORE	4,2±1,9

Quantification Of Tricuspid Regurgitation	
Tricuspid Regurgitation Grading	Severe 14(34) Massive 18(44) Torrential 9(22)
Eziology	Organic 9(22) Atrial Functional 22(54) Ventricular Functional 10(24)
Vena Contracta	14±4
Gap	5,8±2,3
EROA	1,6±0,4
Right Cavities	
Right Atrium Area	34,5±12
TAPSE < 17	15(37)
Right Ventricular Dilatation	No dilatation 6(15) Mild-Moderate 25(61) Severe 10(25)
PAPs	44,2±14,8
Hemodynamics	
PAPm	24,9±11,8
Pulmonary Vascular Resistance	2,3±2,2
Cardiac Output	4,4±1,2

CONCLUSION

In this monocentric real-world registry, severity of tricuspid regurgitation, TRI-SCORE ≥6 and the numbers of clips implanted were associated with success of transcatheter repair. Identifying parameters that predict the success of transcatheter repair may be a useful tool for clinicians to guide indication to percutaneous repair.

	Successful	Unsuccessful	p-value
Tricuspid Regurgitation Grading			0,002
	Severe 24(86)	4(14)	
	Massive-Torrential 1(20)	4(80)	
TRI-SCORE	4±1,2	6,3±2	<,001
Euroscore II	5,7±4	5,4±4	0,88
Gap	5,9±2,2	5,3±3,2	0,67
Number of clips implanted			0.03
	1 7(87)	1(13)	
	2 18(78)	5(22)	
	3 0(0)	6(100)	

Surgery	Annuloplasty 2(5) Prosthesis 3(7)
Heterotopic Prosthesis	3(7)
Transcatheter Edge-To-Edge Repair	33(81)
Number Of Clips Implanted	1 8(24) 2 23(70) 3 2(6)
Post-Implant Tricuspid Tricuspid Regurgitation Grading	Mild 8(20) Mild to Moderate 19(46) Moderate to Severe 6(15) Severe 3(7)
Positive Outcome Of The Intervention	27(66)