

2023 대한심장혈관흉부외과학회

제55차 추계학술대회 & APELSO 2023

2023. 11. 02 (Thu) - 11. 04 (Sat), 그랜드 인터컨티넨탈 파르나스 서울

TRI-SCORE in isolated TR : A single-Center validation study



- Patient selection and correct timing is role of key in deterring favorable outcome after TVR surgery.
- Recently, a prediction model related to TR surgery called TRI-Score has been developed and T-TEER (Triclip transcatheter edge to edge repair) is being chosen the high risk patients estimated by this score similar to TAVI.
- The aim of the study is to validate the discriminatory ability of the TRI-SCORE in predicting in-hospital mortality and long-term result following isolated TR surgery.

1995.03~2023.07
135 isolated TV surgery due to functional TR

Variable (n,%)	Overall (n=135)	Variable (n,%)	Overall (n=135)
Age, years	66.7 (58.9~72.9)	eGFR <30	4 (3.0)
Male	37 (27.4)	Liver cirrhosis or liver dysfunction	30 (22.2)
HTN	55 (40.1)	RV dysfunction at Echocardiography *	50 (37)
DM	19 (14.1)	TRI-SCORE	3 (1.3-4.0)
COPD	3 (2.2)	Prior cardiac surgery (Redo surgery)	56 (41.5)
CVA	11 (8.1)	- Left side valve surgery (AVR or MVR)	45
A.Fib	58 (42.9)	- Tricuspid repair or replacement	3
Symptom of HF(Ascites, pitting edema)	56 (41.5)	- ASD or VSD	5
CHF (EF<40%)	10 (7.5)	- Pericardiectomy or MAZE	2
Furosemide >125mg/day	11 (8.1)	- Heart transplantation	1

Results –Operative date & early clinical outcomes

Variable (n,%)	Overall (n=135)
Timing of surgery	
Diagnosis to surgery interval ≤6months	89 (65.9)
- combined NYHA ≥III or ascites	32
Diagnosis to surgery interval >6months	46 (34.1)
Type of surgery	
<i>TV repair</i>	69 (51.1)
<i>TV replacement</i>	66 (48.9)
<i>Mechanical valve</i>	33
<i>Tissue valve</i>	33
Concomitant surgery	
<i>Coronary artery bypass grafting</i>	6(4.4)
<i>Maze operation or LAA resection</i>	47 (34)
<i>Others (ASD closure o pericardiectomy)</i>	6(4.4)

Early mortality : 3 patient (2.2%) due to heart failure

Variable (n,%)	Overall (n=135)
Hospital stay, days (mean)	24
<Postoperative complication>	
<i>Bleeding requiring operation</i>	1(0.7)
<i>Stroke or hemorrhage</i>	3(2.1)
<i>Heart failure requiring ECMO</i>	1(0.7)
<i>PPM insertion</i>	3(2.1)
<i>Wound complication</i>	4(2.8)

* Early mortality case

TRI-SCORE validation & Risk factor analysis

Mean f/u duration : 72months (range :0-344)

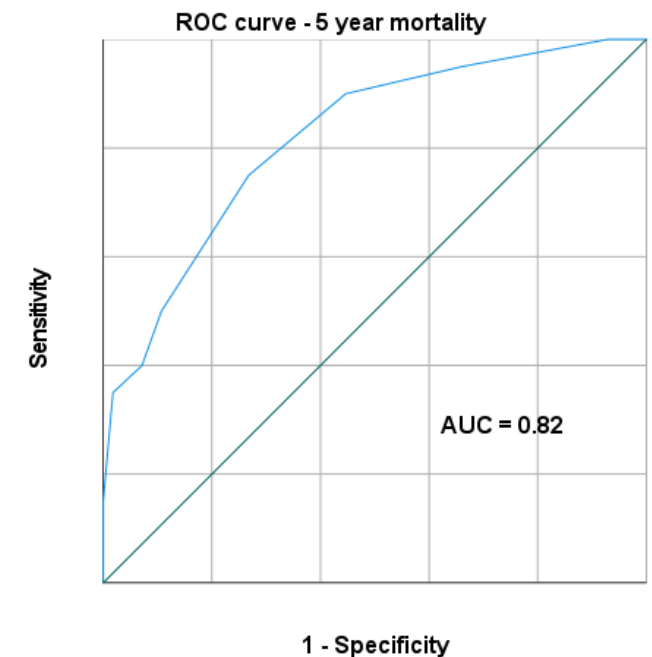
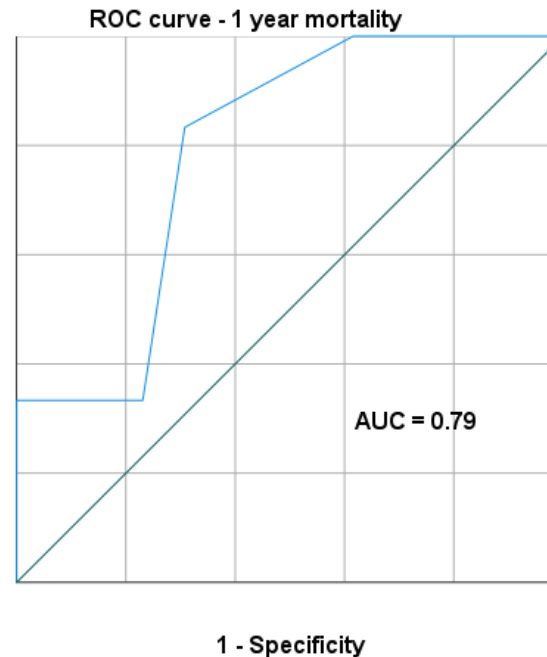
Late mortality : 28 patient (20.7%)

Readmission rate due to heart failure : 17 patients (12.6%)

Redo TV surgery : 6 cases (1 case of TR repair / 5 case of TVR with tissue valve)

Survival rate at 5years and 10years : 80.1%, 60.1%

Multivariable analysis	Odds ratio	99% CI	P-value
Age>70	1.28	[0.445-3.731]	0.53
Previous cardiac surgery	2.07	[0.770-5.561]	0.05
NYHA III-IV	3.46	[1.084-11.048]	<0.01
Pitting edema, Jugular vein distension, ascites	1.59	[0.493-5.113]	0.31
Furosemide > 125mg/day	1.49	[0.390-5.685]	0.44



<ROC curve of TRI-SCORE to predict 1 year-,5 year mortality.
A value of 0.8 is considered the cut-off indication a good performance of score>

- Unexpectedly, the TRI-SCORE cannot predict early and in-hospital mortality because it may be the low number of early mortality in this study. Therefore, the multi-center and large volume study is need this point.
- The external validation confirms the good performance of the TRI-SCORE in predicting the mid-and long-term mortality.