Percutaneous treatment for severe tricuspid regurgitation with Tricvalve device

Chilean National Registry (TRV-CHILE)

Alberto Barria , Cardiologist

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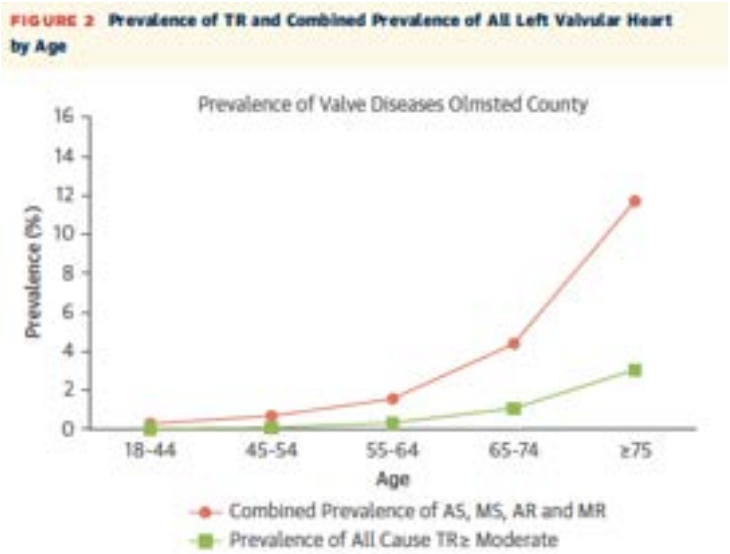
Disclosure of Relevant Financial Relationships

Within the prior 24 months, I have had a financial relationship with a company producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients:

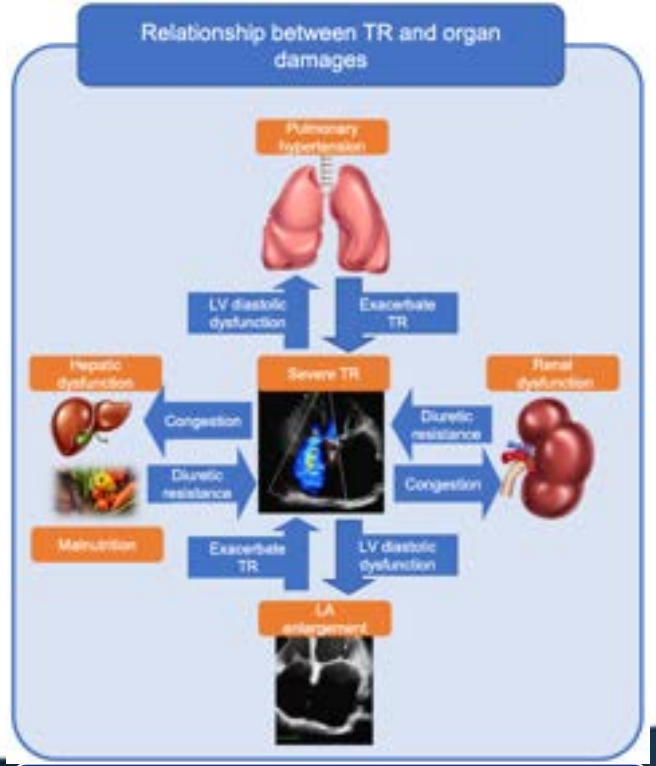
Nature of Financial Relationship	Ineligible Company
Grant/Research Support	CMS Chile
Consultant Fees/Honoraria	-
Individual Stock(s)/Stock Options	-
Royalties/Patent Beneficiary	-
Executive Role/Ownership Interest	-
Other Financial Benefit	-

Tricuspid regurgitation: what we know?

- Prevalence depends on the aging of a given population
- Most relevant clinical manifestations



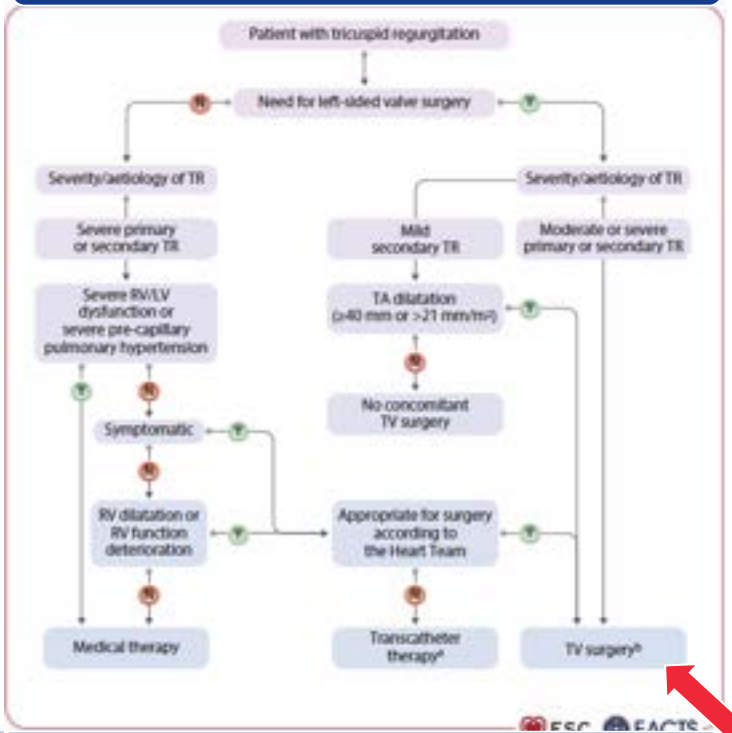
Topilsky Y et al J Am Coll Cardiol Img 2019;12:433–42

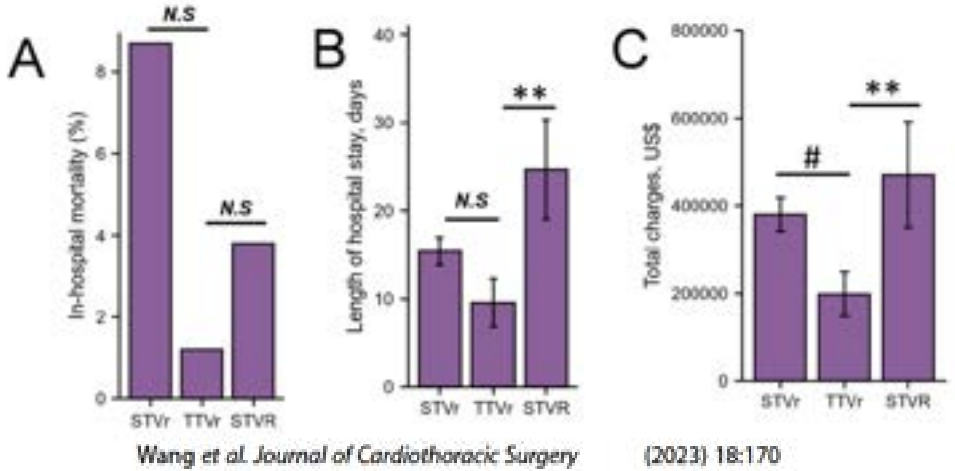


Nishiura et al. J Am Heart Assoc 2023;12: e025751

Tricuspid regurgitation: what we know?

European Guidelines 2025





Praz et al: European Heart Journal(2025) 00, 1-102

Our population and demograpic proyections

Chile

Chilean demographics measured at 2019

Chilean population pyramid

From: Instituto Nacional de Estadíasticas de Chile website https://www.ine.gob.cl/estadisticas/sociales/demografia

CRF TCT

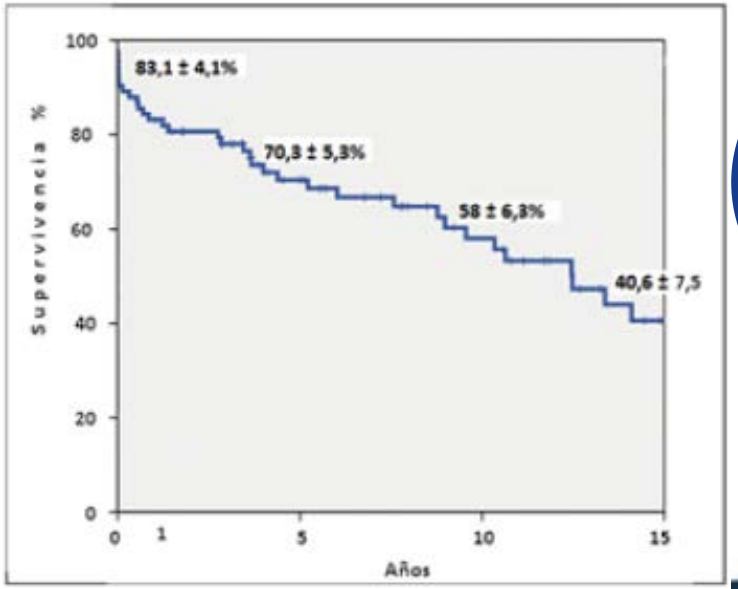
Severe tricuspid regurgitation therapy and local outcomes

- 83 patients
- Tricuspid valve replacement 1991 to 2017

Etiology

Etiología	n	%
Reumática	20	24
Dilatación anillo 2° patología izquierda	16	19
Malformación de Ebstein	14	17
Endocarditis Infecciosa	8	9,6
Congénita no Ebstein	6	7,2
Carcinoide	5	6
Disfunción prótesis tricúspide	4	4,8
Otras	10	12
Total	83	100

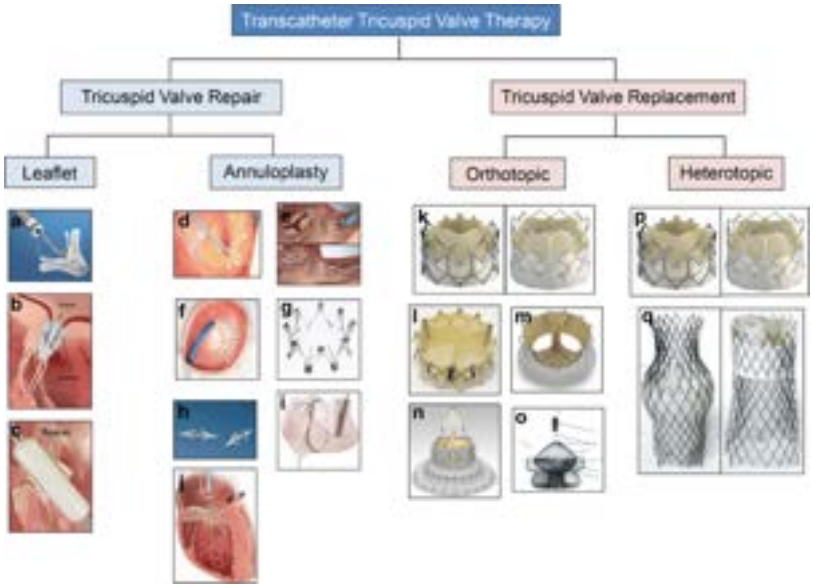
Short & Long term ouctomes



9.6% Operative Mortality

Muñoz C et al Rev Chil Cardiol 2020: 39; 16- 23

Percutaneous therapeutics options worldwide and local



Elmariah et al .Current treatment Options in Cardiovascular Medicine (2019) 21:26

Tricuspid valve replacement heterotopic (local)

- Quickly available
- Accepted by public/private insurance
- Learning curve
- Not demanding anatomical requirements

Local registry TR treatment / heterotopic valve replacement

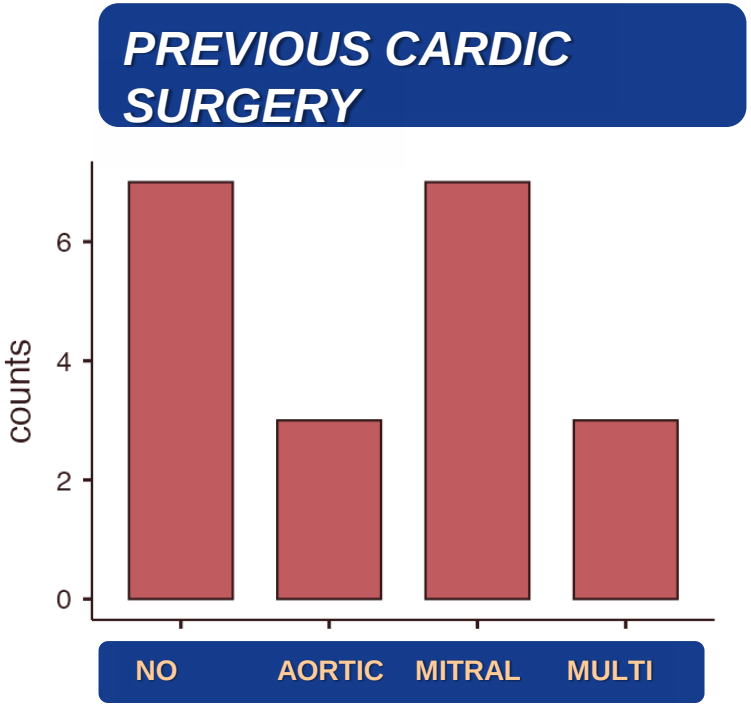
- Santiago de Chile
- Prospective registry
- 5 Hospitals (public/ private)
- Severe & symptomatic TR
- No candidates for cardiac surgery
- Surface Echocardiogram
- Angio CT scan
- Right heart catheterization

Elegibility

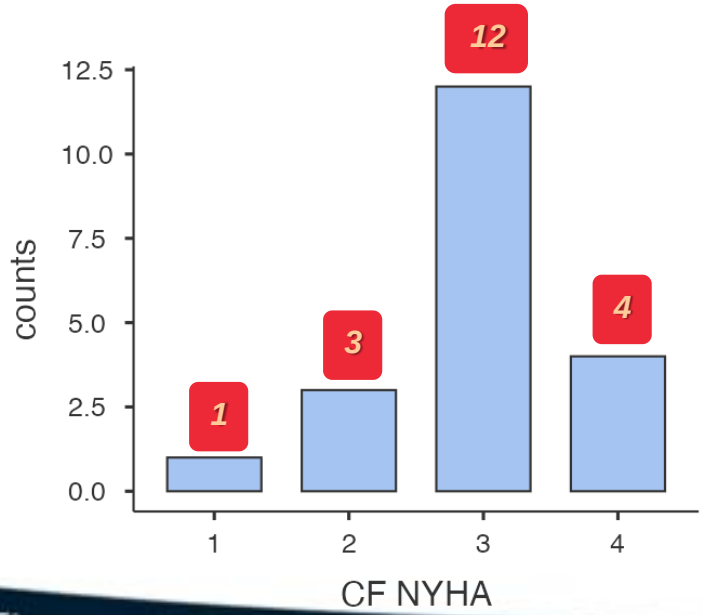
- No severe pulmonary hypertension
- No severe right failure by echocardiography
- Adequate landing zone by CT scan
- No previous caval device
- Written informed consent
- No tricuspid bioprosthesis

Population Characteristics

Population	Total 20 cases
Age (years)	71.4± 9.4
Female	13(65%)
Diabetic	6 (30%)
Peripheric vascular dis.	2(10%)
Liver disease	3(15%)
Atrial fibrillation	17(85%)
Pulmonary disease	1 (5%)
Coronary disease	2 (10%)
Previous surgery	13(65%)



Clinical & general lab findings

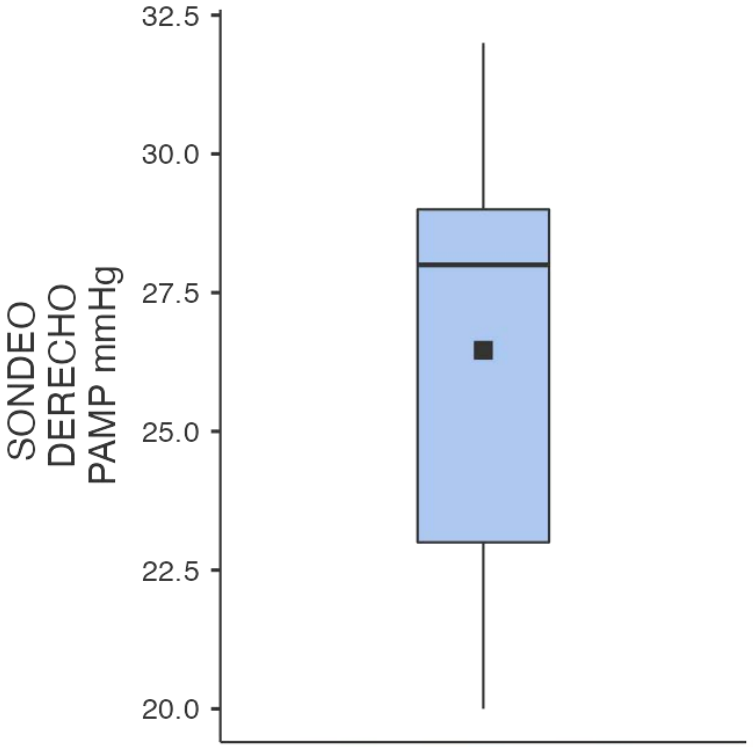


- Dyspnea
- Leg vein edema
- Loop diuretics

- proBNP 3236± 3384
- INR 2.1 ± 1.4
- GOT 47.3 ± 38.4
- GPT 38.4± 45.0

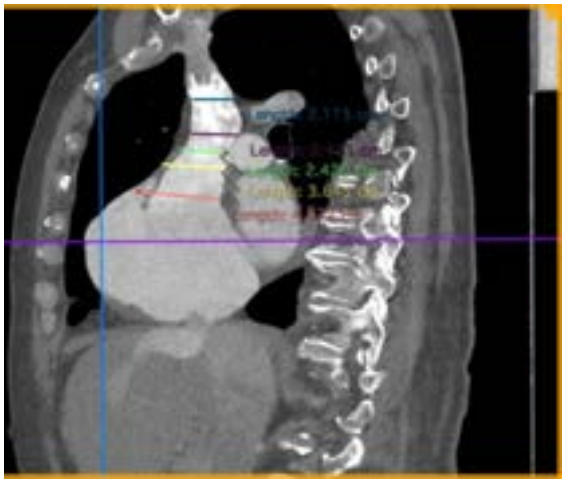
Hemodynamic assesment

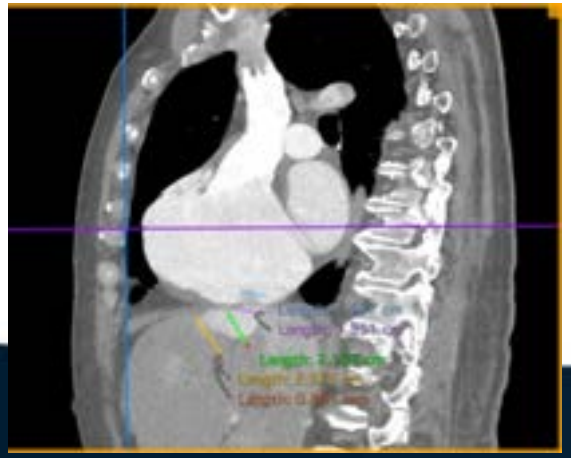
- Median pulmonary pressure
  - 26.5 ±4.1mmHg
- Pulmonary vascular resistance
  - 2.0 ± 1.1. wood U
- Wedge pressure
  - 16.4 ± 5.3



Pre- procedure evaluation

EUROSCORE 4.6 (1.0- 18)

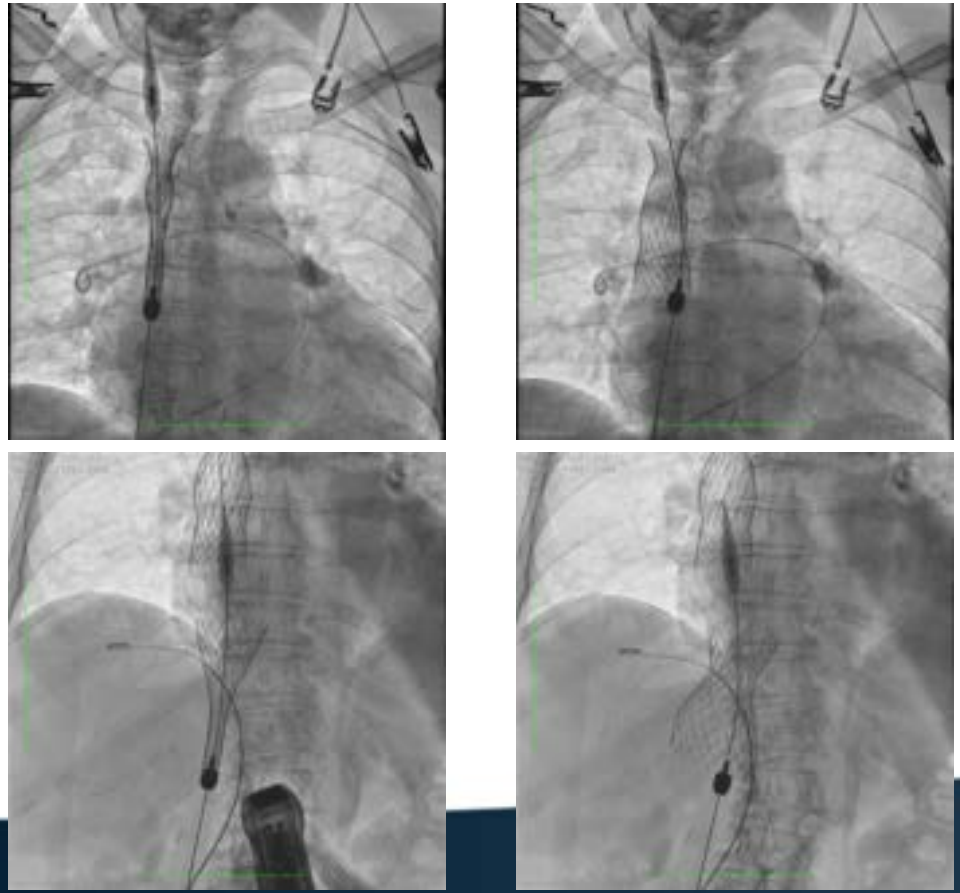




Echocardiogram	Total 20 cases
Ejection fraction %	54±11
Tricuspid reflux Severe Massive Torrential	 5 (25%) 9 (45%) 6 (30%)
TAPSE (mm)	14.1±6.8
Right Ventricle diameter (mm)	47.1±8.4
Right atrial volume (mm3)	70±73.2
Hepatic reflux	5/11 cases

Heterotopic Tricuspid valve implantation

- Sedation & local anesthesia
  - General anesthesia
- Double femoral venous access
  - Pigtail (marker)
  - Tricvalve device
- Surface echo
- Vascular dilator 14 – 16F
- 27.5F venous sheath
- Vascular closure device or *figure of 8 suture*



Inmediate Results

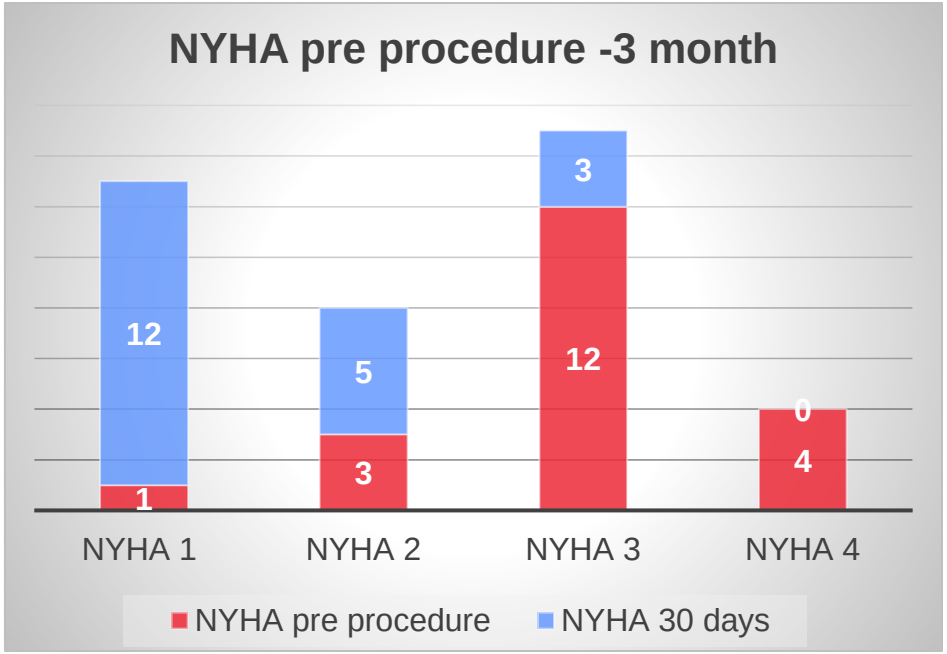
Peri procedure	Total 20 cases
Success	20 (100%)
Death	0
Stroke	0
Myocardial infarction	0
Tamponade	0
Device embolization	1
Open heart surgery	0
New pacemaker	1(5%)
Hospitalization (days)	4(2-91)

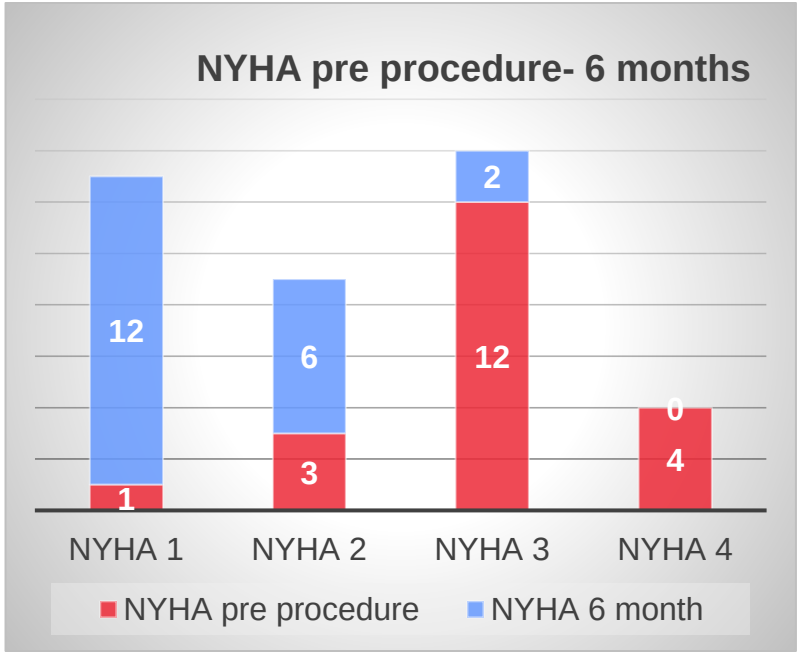
5 cases prolongued index admission

3 due to insurance issues

2 due to right heart failure peri-procedure

Clinical follow up





0 day 80% NYHA 3- 4

6 month 80% NHYA 1-2

Follow up

TOTAL 20 CASES	BASELINE	30 DAYS	6 MONTHS	12 MONTHS
DEATH	-	0	1(5%)	1 (5%)?
RE ADMISSION	-	4 (20%)	7 (35%)	7 (35%)
CARDIAC DEATH	-	0	0	0?

Conclusions

- Heterotopic tricuspid valvular replacement if a safe option for severe tricuspid reflux in selected population
- This procedure relieved symptoms in the most of our population
- High success rate
- Does not require TE echo or general anesthesia
- Better results in terms of success or adverse events in comparison to surgery (local data)
- 1 year Follow up 1 is pending

Acnowlegements

	Hospital
Dr Bastián Abarca	Sotero del Rio Hospital
Dr Germán Armijo	San Juan de Dios Hospital
Dra Pabla Cataldo	Instituto Nacional del Tórax Hospital
Dr Jorge Sandoval	Instituto Nacional del Tórax Hospital
Dr Martín Valdebenito	Sotero del Rio Hospital
Dr Nicolas Veas	BUPA Hospital