RABIN MEDICAL CENTER
BEILINSON • HASHARON

# Tricuspid Valve Replacement: The Effect of Gender on Operative Results

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# DISCLOSURE

- None

# Background 1

- TR is the result of functional or organic disease
- TV repair is the preferred option whenever possible
- Operations of the TV are uncommon in cardiac surgery[1]

1 - The Society for Cardiothoracic Surgery in Great Britain & Ireland. Sixth National Adult Cardiac Surgical Database Report 2008. http://www.scts.org/modules/resources/default.aspx?type=bluebook

# Background 2

- TVR is associated with a high operative mortality[1]
- There is a growing interest in gender medicine [2,3]

1 - Iscan ZH, et al. What to expect after tricuspid valve replacement? Long-term results. Eur J Cardiothorac Surg 2007;32:296—300
2 - Higgins J, et al. Influence of patient gender on mortality after aortic valve replacement for aortic stenosis. J Thorac Cardiovasc Surg 2011;142:595-601
3 - Seeburger J, et al. Gender Differences in Mitral Valve Surgery. Thorac Cardiovasc Surg 2013;61:42–46

# Aim

- To analyze our 7 year experience with tricuspid valve replacement and characterize specific risk factors for this operation

# Methods

- Retrospective analysis of all tricuspid valve replacement cases operated on in our institution from January 2005 to August 2012

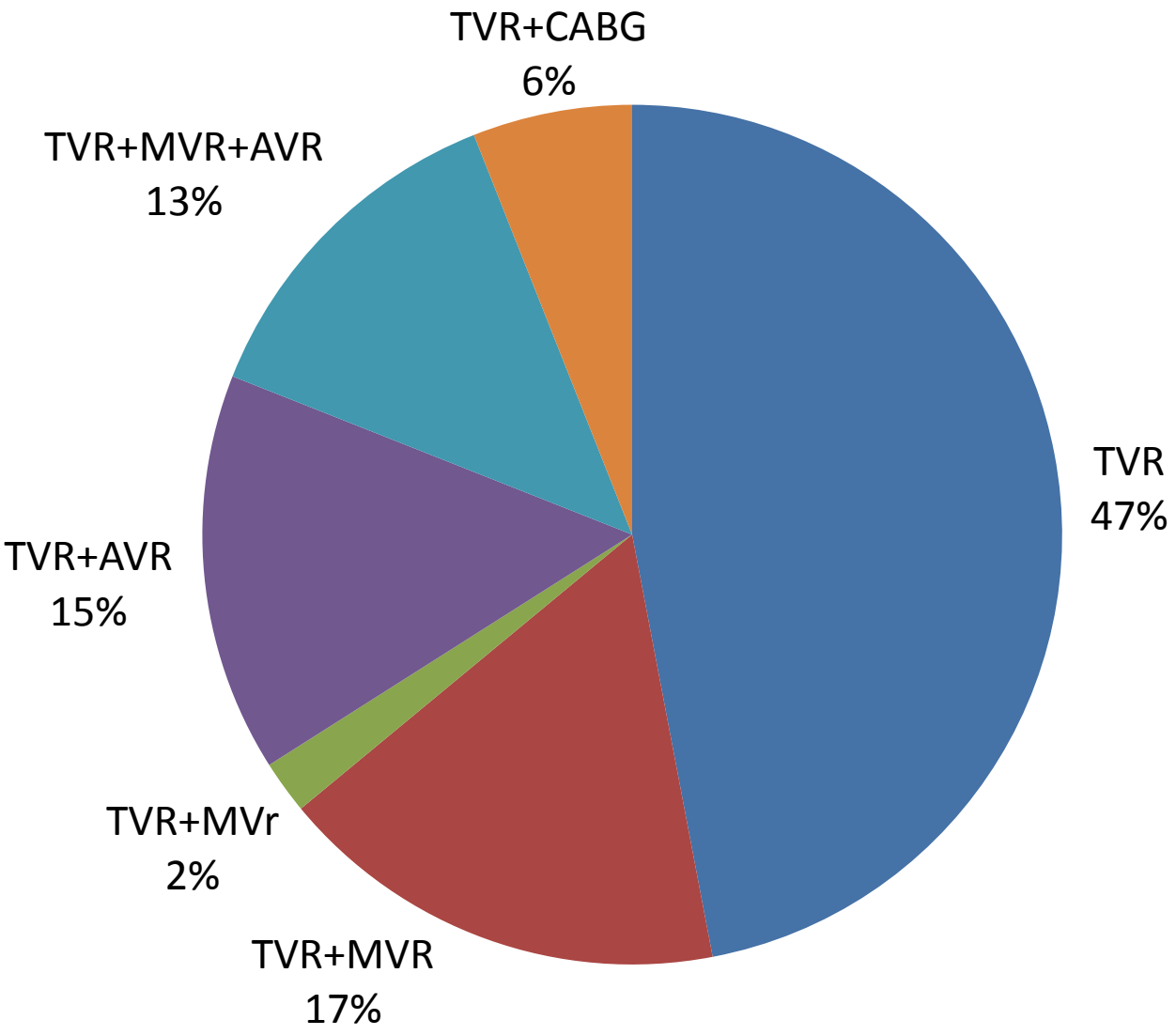
# Results - Patient characteristics 1

| | N=67 (%) |
|---|---|
| Age (mean±SD) | 58±14 |
| - Female | 61±13 |
| - Male | 54±13 |
| Gender | |
| - Female | 45 (67%) |
| Etiology | |
| - Rheumatic | 48 (72%) |
| - Endocarditis | 3 (5%) |
| - A. Fib. | 6 (9%) |
| - Pacemaker | 2 (3%) |
| - Other | 8 (12%) |
| Previous CVA | 6 (9%) |
| Atrial fibrillation | 44 (66%) |

# Results - Patient characteristics 2

| | N=67 (%) |
|---|---|
| Previous cardiac operation | 48 (72%) |
| Number of previous operations: | |
| 1 | 11 (16%) |
| 2 | 18 (27%) |
| 3 | 14 (21%) |
| 4 or more | 5 (7%) |
| Preoperative RV function | |
| Good | 4 (6%) |
| Moderate | 44 (66%) |
| Severe | 14 (21%) |
| N/A | 5 (7%) |

# Results - Intra-operative 1



# Results - Intra-operative 2

| | Mean | Range |
|---|---|---|
| Type of valve | Bioprosthesis 55 (82%)<br>Mechanical 12 (18%) | |
| Size of valve | 31 mm. | 23-35 mm. |
| Bypass time | 165±79 min. | 57-465 min. |
| Cross clamp time | 120±50 min. | 38-218 min. |

# Post-op Morbidity

| | Number (%) |
|---|---|
| Hospital mortality: overall | 12 (17.9%) |
| - Male | 0 |
| - Female | 12 (27%) |
| Re-exploration d/t bleeding | 12 (18%) |
| Renal failure requiring renal replacement therapy | 7 (10%) |
| Low cardiac output | 20 (30%) |
| Prolonged mechanical ventilation | 19 (28%) |
| Permanent Pacemaker insertion | 6 (9%) |
| ICU stay (median) | 3 days |

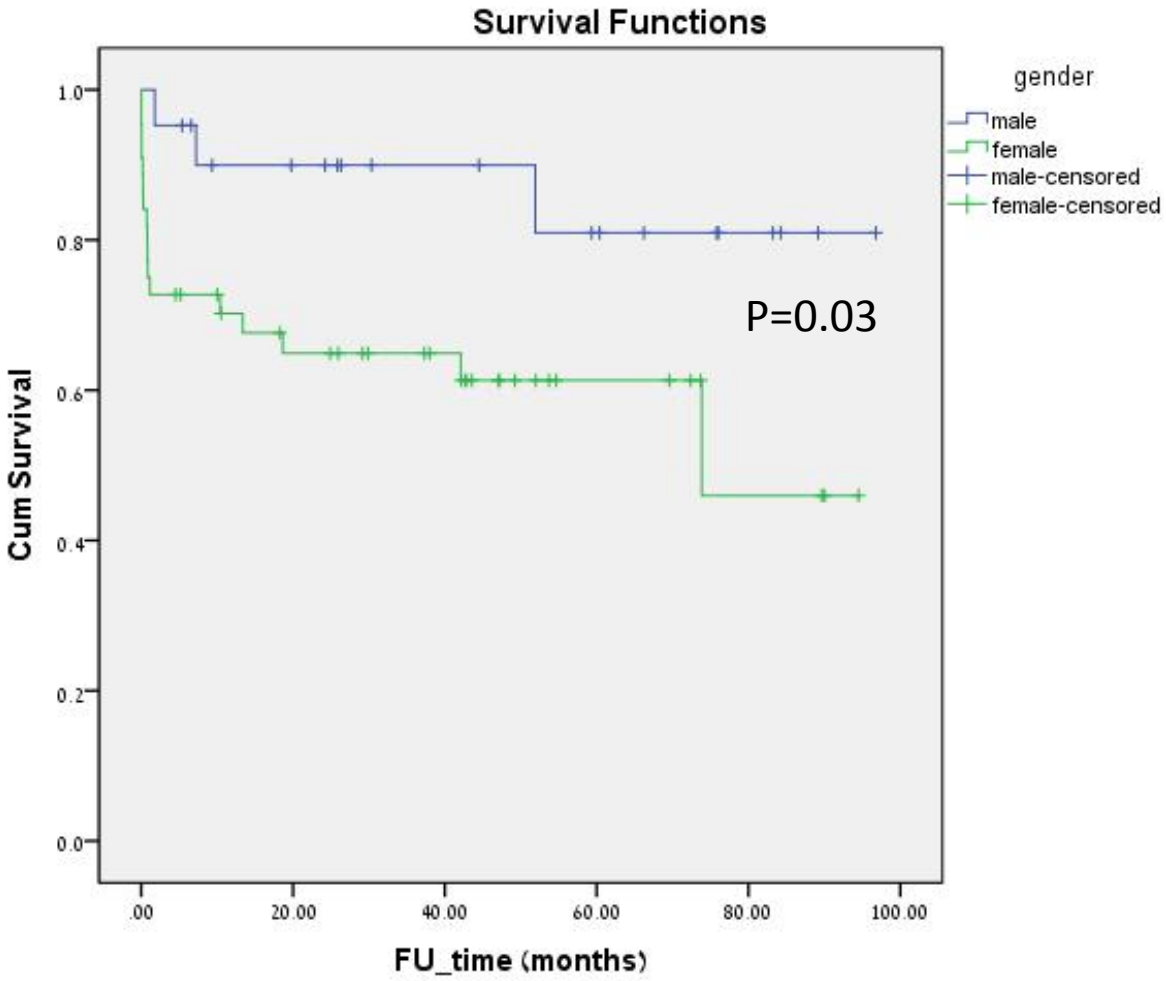
# Univariate analysis for Hospital Mortality

| Risk factor | Hospital mortality with risk factor (%) | Hospital mortality without risk factor (%) | *p* value |
|---|---|---|---|
| Female gender | 12/45 (26.7%) | 0/22 (0%) | 0.007 |
| REDO operation | 10/48 (20.8%) | 2/19 (10.5%) | 0.485 |
| Pre-operative CVA | 3/6 (50%) | 9/61 (14.8%) | 0.066 |
| Chronic atrial fibrillation | 7/44 (15.9%) | 5/23 (21.7%) | 0.738 |
| Post op. Renal failure | 6/12(50%) | 6/55 (10.9%) | 0.005 |
| Prolonged mechanical ventilation | 9/19 (47.4%) | 3/48 (6.3%) | <0.001 |

# Follow up 1

- NYHA- 2.5±0.7
- 92.6% - less then grade 2 TR
- Mean gradient – 5.0±2.9 mmHg
- RV function – 72% with good RV function

# Follow up 2


Survival Functions
gender
male
female
male-censored
female-censored
P=0.03
Cum Survival
1.0
0.8
0.6
0.4
0.2
0.0
.00
20.00
40.00
60.00
80.00
100.00
FU_time (months)

# Conclusions

- This subset of patients represents very high risk patients
- TVR remains a high risk operation
- Women undergo TVR at an older age with higher mortality
- First time TVR is associated with reasonable operative results

Thank you!

# Causes of mortality

- Sepsis – 2
- Multiple organ failure – 5
- Low cardiac output – 2
- CVA – 1
- Stuck valve – 1
- SCD - 1