One-year Clinical and Echocardiographic Outcomes for the 19 mm Trifecta Aortic Bioprosthesis in a Selected Female Patient Sample with Small Body Surface

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BACKGROUND
The St. Jude Medical Trifecta aortic valve is a tri-leaflet stented pericardial valve designed for supra-annular placement. Particular design features may offer benefits for patients with small body size.

OBJECTIVE
The objective of this retrospective, single-center study was to evaluate the clinical and echocardiographic performance of the 19 mm Trifecta aortic prosthesis in selected female patients with small body size at 1-year follow-up.

METHODS
- Case reports of 31 female patients (mean age 70.6 years, range 56–82) with a mean body surface area of 1.6 (range 1.24–1.78) who underwent aortic valve replacement with the 19 mm Trifecta valve between March 2011 and January 2012 were analyzed.
- Indications: Aortic stenosis: 64.5% (N=20), insufficiency: 9.7% (N=3), aortic steno-insufficiency: 25.8% (N=8)
- A total of 7 patients (22.6%) underwent concomitant procedures (coronary artery bypass grafting in 13%, mitral valve replacement in 6%, and ascending aorta replacement in 3%).
- All patients underwent physical exam and echocardiography at follow-up.

RESULTS
- Hemodynamics at baseline and 1-year follow-up are shown in Table 1.
- Mortality:
  - No intraoperative deaths
  - In-hospital mortality: 3.2% (N=1)
  - No deaths at follow-up (mean follow-up 17.2 months, range 13.6–21.2). Follow-up was 100% complete.
- No prosthetic endocarditis, valve thrombosis or structural deterioration
- One case of mild perivalvular leak (no treatment required)

Table 1. Hemodynamic Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Baseline</th>
<th>1-year Follow-up</th>
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<tbody>
<tr>
<td>Mean pressure gradient</td>
<td>50.4 mmHg (27–67)</td>
<td>10.8 mmHg (5–18)</td>
</tr>
<tr>
<td>Mean aortic valve area</td>
<td>0.56 cm² (0.40–0.68)</td>
<td>1.43 cm² (1.13–1.77)</td>
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<tr>
<td>Mean aortic valve area index</td>
<td>0.35 cm² (0.25–0.48)</td>
<td>0.73 cm² (0.67–0.82)</td>
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<tr>
<td>Mean ejection fraction</td>
<td>56.4% (45–65)</td>
<td>57.5% (50–65)</td>
</tr>
<tr>
<td>New York Heart Association Class</td>
<td>I or II: 100% at baseline</td>
<td>I: 100%</td>
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</tbody>
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SUMMARY OF KEY FINDINGS

- The mean pressure gradient decreased significantly from 50.4 mmHg (27–67) at baseline to 10.8 mmHg (5–18) at 1-year follow-up.
- The Trifecta valve also demonstrated substantial hemodynamic benefits in other parameters.

CONCLUSION

- The Trifecta valve demonstrated excellent hemodynamic performance that remained stable through 1-year follow-up in a selected patient group of females with small body size.

REFERENCE

1. De Feo M, Della Corte A, Vitagliano E, et al. One-year Clinical and Echocardiographic Outcomes for the 19 mm Trifecta Aortic Bioprosthesis in a Selected Female Patient Sample with Small Body Surface. 7th Biennial Scientific Meeting of the Society for Heart Valve Disease and the Heart Valve Society of America; Venice, Italy. June 22-25, 2013.