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Clinical Outcomes Following TricValve Implantation: Single-Centre Experience at the University Hospital Centre Zagreb | Retrospective follow-up analysis

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Introduction: Severe tricuspid regurgitation (TR) is associated with progressive right atrial and ventricular remodeling, systemic venous congestion, right-sided heart failure, and increased morbidity and mortality[1]. Orthotopic transcatheter tricuspid valve interventions (TTVI) have emerged as the treatment options for patients with severe TR who remain symptomatic despite optimal medical therapy. However, a substantial proportion of patients are ineligible for these procedures due to unfavorable anatomical characteristics. Caval valve implantation (CAVI) using the TricValve system represents a promising treatment option for these patients, with potential benefits in quality of life and reverse remodeling of the right heart[2,3].

Patients and Methods: We retrospectively analyzed 11 patients with severe tricuspid regurgitation who underwent TricValve implantation at University Hospital Centre Zagreb.

Results: The mean age at the time of intervention was 77.0 ± 3.9 years. At baseline, eight patients (72.7%) were in NYHA functional class III, two (18.2%) in NYHA class II, and one (9.1%) in NYHA class IV. During follow-up, three patients (27.3%) died, including one death attributed to heart failure and two deaths from non-cardiac causes (acute leukemia and pneumonia). Eight patients (72.7%) had complete longitudinal follow-up data and were included in the paired analysis. The mean follow-up duration was 17.1 ± 7.7 months. A significant improvement in functional status was observed, with mean NYHA class decreasing from 2.75 ± 0.46 at baseline to 1.75 ± 0.71 at follow-up (p = 0.016). Seven patients (87.5%) experienced an improvement of one NYHA functional class, while one patient (12.5%) remained unchanged (**Figure 1**). Peripheral oedema decreased from 75.0% at baseline to 37.5% at follow-up. Two patients (25.0%) experienced at least one heart failure hospitalization during follow-up. No statistically significant changes were observed in NT-proBNP levels (1,722 ± 1,036 vs. 1,931 ± 1,766 ng/L; p = 0.641) or renal function, as assessed by eGFR (51.8 ± 20.3 vs. 50.9 ± 20.3 mL/min/1.73 m²; p = 0.813).

Conclusion: In this small single-centre cohort, TricValve implantation was associated with a significant improvement in NYHA functional class and a reduction in the prevalence of peripheral oedema among patients who survived and completed follow-up. However, these clinical improvements were not accompanied by statistically significant changes in NT-proBNP levels or renal function. Given the small sample size, variable follow-up duration, and survivor- only longitudinal analysis, these results should be interpreted with caution.

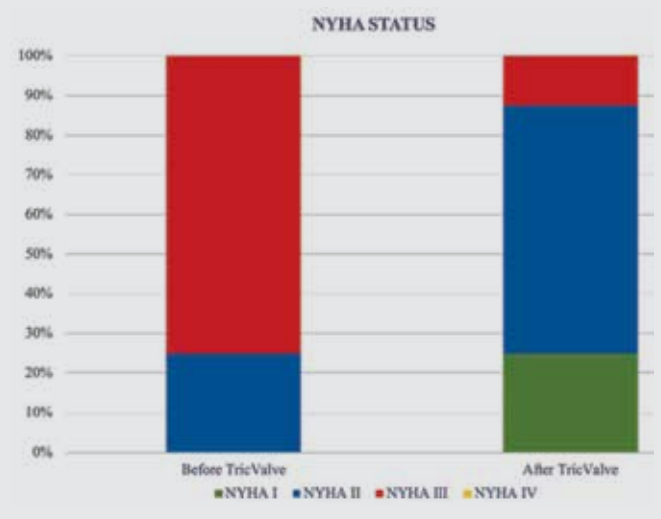


FIGURE 1. New York Heart Association (NYHA) status before and after TricValve procedure.

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