Results of unplanned Right Ventricular Assist Device for severe Right Ventricular Failure after Continuous Flow Left Ventricular Assist Device Insertion

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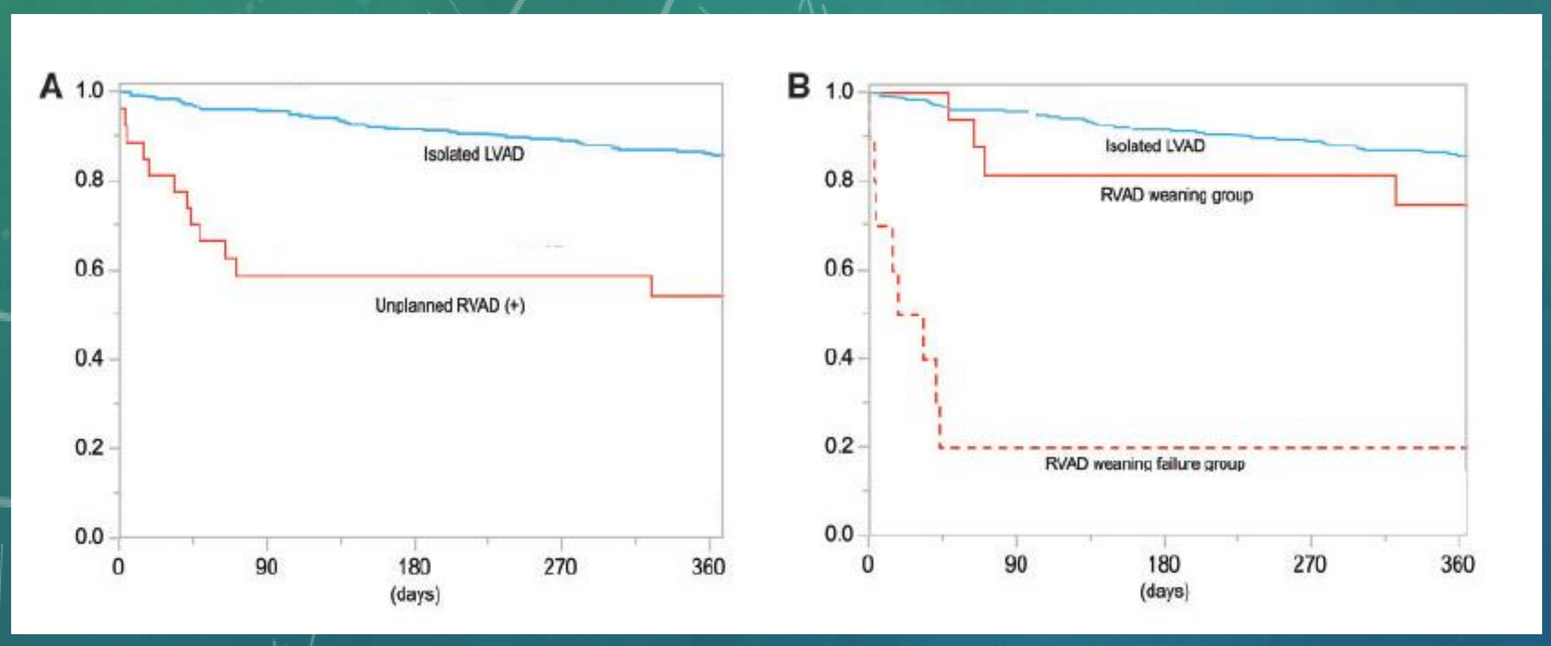
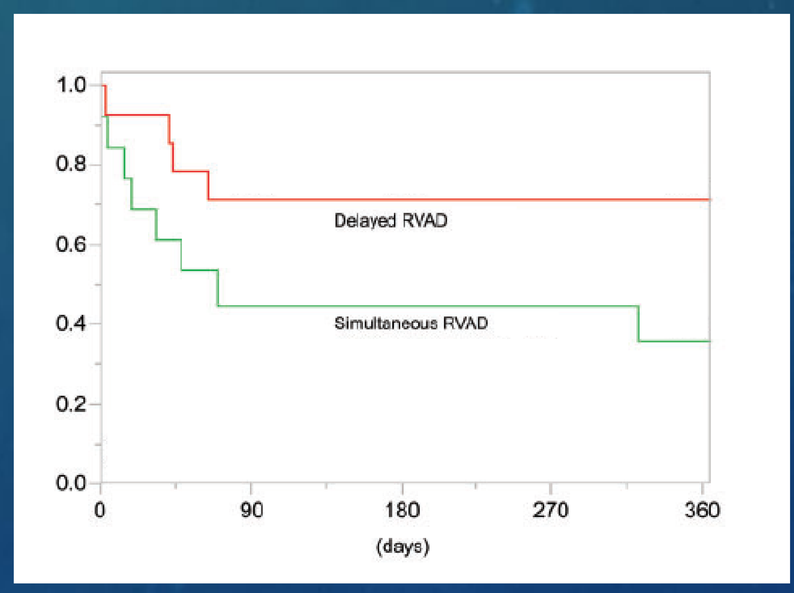
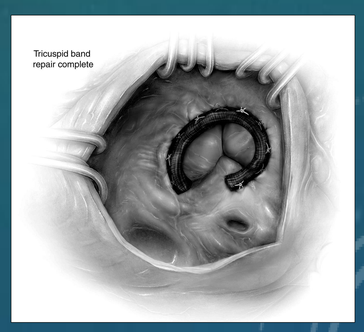
Purpose: Currently, severe right ventricular failure (RVF) requiring right ventricular assist device (RVAD) support after left ventricular assist device (LVAD) insertion results demanding. This study evaluates outcomes in patients who required unplanned RVAD support early after continuous-flow (CF) LVAD insertion.

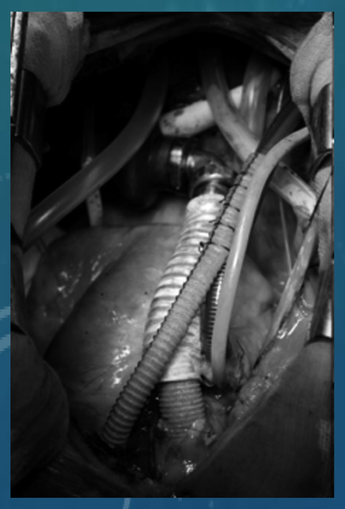
Methods: We retrospectively reviewed 158 patients who underwent HeartMate II / HeartMate 3 / HeartWare CF LVAD insertion between 2006 and 2016. Thirty-eight (24.05%) patients required unplanned Levitronix CentriMag RVAD for severe RVF early after LVAD insertion. We compared early and late outcomes in patients with without RVAD.

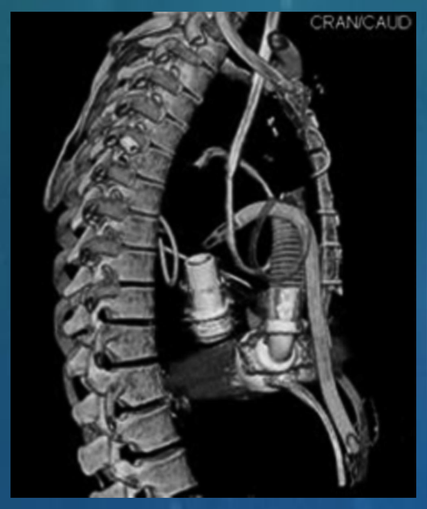
Results: The median time to RVAD implantation after primary CF-LVAD implantation was 1.0 (0-3) day. Twenty-five (65.7%) patients could be weaned from RVAD median of 14 (10-18) days. The majority of RVAD weaned patients (n=20, 80%) underwent tricuspid valve repair, on beating heart, with complete ring insertion at time of LVAD placement. In the isolated LVAD group, overall survival at 12 months was 85%, whereas 56% in the unplanned RVAD group, respectively (p = 0.001). The 12-month overall survival rate in patients who were weaned from RVAD was 76.5%, whereas in patients who could not be weaned from RVAD, the overall survival was 20% (p < 0.001). Readmission free rate for RVF at 1 year was 50% in the unplanned RVAD group and 90% in the isolated LVAD group (p = 0.003).

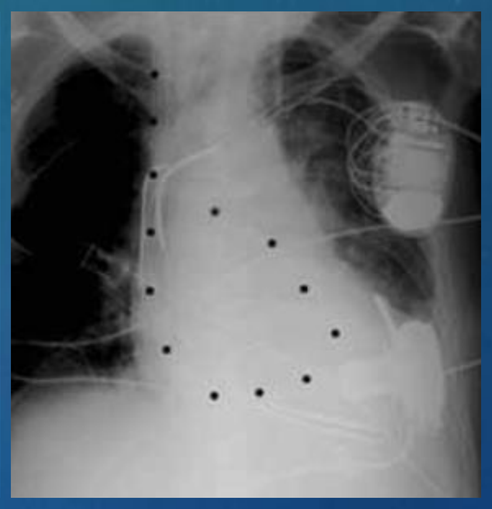












Conclusion: Among patients who required unplanned RVAD after CF-LVAD implantation, the majority of patients could be weaned from RVAD and tricuspid valve played a significant role. However, careful attention should be paid to the recurrence of RVF particularly in case of idiopathic dilative cardiomyopathy, in terms of etiology.

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Disclosures: None