



## Heart Failure and Cardiomyopathies

### LIVE PROCEDURE FOR THE TREATMENT OF ISCHEMIC HEART FAILURE - CURRENT SHORT AND MID-TERM OUTCOMES

Moderated Poster Contributions

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**Background:** Ischemic cardiomyopathy is the most common cause of heart failure with reduced ejection fraction (HFrEF). In patients with symptomatic HFrEF, left ventricular (LV) dilatation and transmural scar in the anterior wall, Less Invasive Ventricular Enhancement (LIVE) can be considered to plicate LV scar and decrease LV volumes hence decrease wall stress and increase EF with improvement of HF symptoms.

**Methods:** The LIVE procedure has evolved from a full median sternotomy and on-pump procedure to a hybrid transcatheter and minimal-invasive surgical off-pump procedure. LV reconstruction is achieved by implantation of a series of paired micro-anchors to create a longitudinal plication of LV scar in the LV anterior wall and septum. Procedural improvements have significantly decreased procedural complexity while maintaining efficacy and resolved previous issues of bleeding and tricuspid injury.

**Results:** Between July 2018 and November 2020, 72 patients (83% men; mean age 60 years) underwent the LIVE procedure in 15 centers in Europe and Asia. Procedural success was 100%, and average duration was  $137 \pm 51$  minutes. A mean of 2.4 anchor pairs (median 3) were necessary to adequately reconstruct the LV. Echocardiography showed an increase in LVEF from  $30.1 \pm 10.1$  to  $39.1 \pm 11.6\%$  (change +30.1%,  $p < 0.001$ ) and LV end-systolic volume index reduction from  $71.7 \pm 39.4$  ml/m<sup>2</sup> to  $44.0 \pm 28.7$  ml/m<sup>2</sup> (change -38.0%,  $p < 0.001$ ). No conversion to full sternotomy or support by extracorporeal circulation was needed. Increase of tricuspid regurgitation was observed in only 1 patient (1.39%). No cases of ventricular septal defect or strokes were noted. Early or in-hospital mortality was 1.39% (1 patient), due to severe contrast-induced anaphylactic shock. Late mortality was 1.39% (also 1 patient) due to COVID-19 infection. At latest follow-up, median NYHA class improvement was 1 grade.

**Conclusion:** Hybrid transcatheter and minimal-invasive LV reconstruction is efficacious in patients with HFrEF after anterior myocardial infarction. Results from this latest iteration of the procedure demonstrate its improved safety, efficacy and reproducibility in treating ischemic heart failure.