

## **The Effects of Baseline and Worsening Tricuspid Regurgitation on Long Term Response and Prognosis in Cardiac Resynchronization Therapy Patients**

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**Background:** The severity of TR is determinant of outcome among HF patients. The interaction between CRT and TR have never been examined before. In this study we sought to study the effects of TR status and worsening TR following CRT on response to CRT and on survival.

**Methods:** The study included 184-pts successfully implanted CRT-systems. Patients in group-1 who had no-or-mild TR and in group-2 had moderate-or-severe TR. We followed these patients for one year to evaluate TR deterioration: Group-1 who had >1 grade TR deterioration and group-2 who had no change or improvement in TR. Then we compared the baseline characteristics and outcome between the groups and the effects of TR deterioration on CRT outcome.

**Results:** 30-pts (16.3%) with advanced TR (gr-2) had worse baseline echo parameters and shorter 6MW distance. No significant difference in clinical or echo response to CRT between the two groups. However, pts with moderate-or-severe TR had a significantly higher mortality over 3 years (OR=6.5, 95%CI = [2.0–21.2], p=0.002). During follow-up, 31-pts (16.8%) developed worsening TR. There was no difference in the baseline characteristics between the 2 groups. Worsening TR was not associated with deterioration in RV function or elevation in SPAP. However, patients with worsening TR had significantly reduced clinical response to CRT, 50% vs. 73%, p=0.04. But, there was no difference in echo response or mortality between the 2 groups.

**Conclusions:** The presence of baseline moderate or severe TR is associated with increased mortality without affecting clinical or echocardiographic response to CRT. However, patients with worsening TR following CRT are less likely to respond to CRT. The deterioration in TR is probably caused by the pacing leads passing through the tricuspid valve. It is conceivable that avoidance of lead induced TR by alternative routes could improve the response rate to CRT.