## 14<sup>th</sup> International Conference on Clinical & Experimental Cardiology

November 14-16, 2016 Orlando, Florida, USA

## RVOT and posterior-lateral LV pacing match improves biventricular resynchronization in patients with dilated cardiomyopathy

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**Objective:** Evaluate the efficacy of biventricular lead location match on cardiac resynchronization.

Methods: Consecutive patients with dilated cardiomyopathy who candidate to CRTD were enrolled into the study. After posterior-lateral lead was implanted, patients were randomized into right ventricular apex match pacing group (RVA) and right ventricular output tract match pacing group (RVT). Active screw-in leads were anchored on the endocardial wall of RVA and RVOT respectively. Physiocurve CRTD generates (Medtronic Co.) were connected and optimal working parameters were adjusted by ECG and echocardiography. Regular follow up was conducted in clinic for more than 6 months. NYHA class decrease, 6MWD increase, EF increase, BNP level decrease and QRS width decrease were compared between RVA and RVT groups.

**Results:** Fifty patients were enrolled into the study. Four patients were excluded for LV lead location. Forty-six patients (92%, 56.3 $\pm$ 5.7 yrs and male 27) were randomized into RVA group (22, 56.1 $\pm$ 5.3 yrs, male13) and RVT group (24, 56.5 $\pm$ 5.9 yrs, male 14). All procedures were successful without complications. At the follow up of 11.3 $\pm$ 4.7 months, the resynchronization efficacy in RVT group was significantly superior to that in RVA group (NYHA class decrease 1.2 $\pm$ 0.5 vs. 0.7 $\pm$ 0.3, P<0.05; 6MWD increase 236.75 $\pm$ 39.6m vs. 129.3 $\pm$ 53.8m, P<0.01; EF increase 12.6 $\pm$ 5.1% vs. 7.3 $\pm$ 6.5%, P<0.01; BNP decrease 3756.3 $\pm$ 379.2u vs. 2027.5 $\pm$ 493.2u, P<0.01; QRS width decrease 19.6 $\pm$ 6.1ms vs. 13.5 $\pm$ 7.2ms, P<0.05).

**Conclusions:** RVOT lead location is superior to RV apex in the improvement of cardiac resynchronization efficacy by matching posterio-lateral LV pacing.

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