



## Congenital Cardiology Solutions

### OUTCOMES OF CARDIAC RESYNCHRONIZATION THERAPY IN ADULT PATIENTS WITH SURGICALLY REPAIRED TETRALOGY OF FALLOT AND LEFT VENTRICULAR SYSTOLIC DYSFUNCTION

Poster Contributions

Poster Sessions, Expo North

Monday, March 11, 2013, 9:45 a.m.-10:30 a.m.

Session Title: Congenital Cardiology Solutions: Adult Congenital Heart Disease

Abstract Category: 12. Congenital Cardiology Solutions: Adult

Presentation Number: 1292-132

Authors: *Danesh Kella, Faisal Merchant, Wendy Book, Jonathan Langberg, Michael S. Lloyd, Emory University School of Medicine, Atlanta, GA, USA*

**Background:** Although left ventricular (LV) systolic dysfunction is known to occur in adults with repaired Tetralogy of Fallot (TOF), the benefit of cardiac resynchronization therapy (CRT) in this cohort is not well described.

**Methods:** We retrospectively identified all patients with repaired TOF and impaired LV ejection fraction ( $LVEF \leq 40\%$ ) undergoing CRT at our institution ( $n=10$ ) and divided them into two groups: de novo CRT (Group A,  $n=6$ ) or upgrade from existing device (Group B,  $n=4$ ). Echocardiograms were reviewed at baseline (pre-CRT) and medium-term follow-up (6-12 months). CRT response was defined as a reduction in LVESV  $\geq 15\%$  at medium-term follow-up.

**Results:** For all patients, age at surgical repair was  $13.1 \pm 16.0$  yrs and age at CRT was  $44.4 \pm 12.5$  yrs. Baseline LVEF was  $24.0 \pm 10.5\%$ , New York Heart Association (NYHA) class  $2.9 \pm 0.6$  and QRS duration  $179.1 \pm 36.3$  msec. Group A demonstrated right ventricular (RV) conduction delay preponderance whereas all patients in Group B was RV paced at baseline. Time to medium-term follow-up was  $10.4 \pm 5.3$  months. Group A showed significant improvements in LVEF, LVEDV and LVESV (Table). Group B also demonstrated a significant improvement in LVEF with favorable trends in LV volumes. Out of 9 patients with complete data at medium-term follow-up, 8 showed evidence of CRT response (Group A: 4/5; Group B: 4/4).

**Conclusions:** Adults with repaired TOF and LV systolic dysfunction demonstrate significant medium-term response to CRT, even among those with RV conduction delay.

TABLE	Left ventricle ejection fraction (%)		
	Baseline	Medium-term	p
Group A	$21.7 \pm 11.3$	$32.0 \pm 4.5$	<0.01
Group B	$27.5 \pm 9.6$	$42.5 \pm 18.5$	0.05
	Left ventricle end-diastolic volume (cc)		
	Baseline	Medium-term	p
Group A	$251.5 \pm 87.4$	$216.1 \pm 86.5$	0.03
Group B	$272.0 \pm 111.3$	$180.8 \pm 42.1$	0.16
	Left ventricle end-systolic volume (cc)		
	Baseline	Medium-term	p
Group A	$193.7 \pm 71.3$	$147.4 \pm 55.5$	0.03
Group B	$228.1 \pm 104.1$	$106.6 \pm 5.7$	0.09