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TRANSCATHETER AORTIC VALVE REPLACEMENT RESULTS IN SIGNIFICANT REVERSE REMODELING IN PATIENTS WITH LEFT VENTRICULAR DILATION: A REPORT FROM THE PARTNER I TRIAL

Poster Contributions

Poster Hall B1

Saturday, March 14, 2015, 10:00 a.m.-10:45 a.m.

Session Title: Coronary I

Abstract Category: 30. TCT@ACC-i2: Aortic Valve Disease

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Authors: *Melissa A. Daubert, Philippe Pibarot, Rebecca Hahn, Neil Weissman, William Stewart, Justina Wu, Sammy Elmariah, Brian Lindman, E. Murat Tuzcu, Rakesh Suri, Ke Xu, Martin Leon, Pamela Douglas, Duke University Medical Center, Durham, NC, USA, Duke Clinical Research Institute, Durham, NC, USA*

Background: Left ventricular (LV) reverse remodeling (RR) is often associated with reduced adverse events. This study evaluated the extent and impact of RR after transcatheter aortic valve replacement (TAVR) for severe aortic stenosis (AS).

Methods: We analyzed patients with at least moderate LV dilation (end-diastolic volume index, EDVi ≥ 87 ml/m²) for RR (EDVi decrease ≥ 5 ml/m²) between baseline and 30 days after TAVR. Event rates at 1 year were compared in RR and no RR patients.

Results: Of the 2358 patients, 301 (12.8%) had at least moderate LV dilation and paired baseline and 30-day LV volumes. RR occurred in 209 patients (69.4%). At baseline, those with RR had larger EDVi ($p=0.02$) and higher peak and mean AS gradients ($p=0.007$; 0.004), but similar end-systolic volume index (ESVi, $p=0.33$) and ejection fraction (EF, $p=0.09$). EDVi and ESVi significantly decreased in patients with RR (both $p<0.0001$), but increased in those without RR (Table). A significantly greater increase in EF occurred with RR: $+3.94$ vs $+1.41\%$, $p=0.009$. Moderate-severe paravalvular aortic regurgitation and mitral regurgitation were more likely at 1 year in patients with no RR (both $p=0.02$), but rates of all-cause death ($p=0.56$), cardiac death ($p=0.72$), and repeat hospitalization ($p=0.38$) were similar.

Conclusion: Although LV dilation is uncommon in severe AS, such patients demonstrate significant RR after TAVR. However, this did not correlate with reduced events at 1 year suggesting that RR may not be prognostic in this population.

Table:

	NO REVERSE REMODELING (n=92)				REVERSE REMODELING (n=209)				[Δ No RR] - [Δ RR]	
	BASELINE	30 DAYS	Δ	p-value	BASELINE	30 DAYS	Δ	p-value	$\Delta - \Delta$ (95% CI)	p-value
End-Diastolic Volume Index (ml/m ²)	102.70 \pm 14.91	112.69 \pm 18.80	+9.99 \pm 11.77	<0.0001	107.54 \pm 18.48	74.85 \pm 21.56	-32.69 \pm 20.06	<0.0001	42.69 (38.27-47.10)	<0.0001
End-Systolic Volume Index (ml/m ²)	65.98 \pm 19.31	69.00 \pm 21.81	+3.02 \pm 10.64	0.0121	64.03 \pm 21.55	42.97 \pm 18.23	-21.05 \pm 16.89	<0.0001	24.07 (20.29-27.85)	<0.0001
Ejection Fraction (%)	38.53 \pm 12.60	39.94 \pm 11.64	+1.41 \pm 6.93	0.0329	41.26 \pm 13.21	45.20 \pm 11.98	+3.94 \pm 9.03	<0.0001	2.53 (0.45-4.61)	0.009