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Volume 65, Issue 10S TCT@ACC-i2: Interventional Cardiology**VOLUME REDUCTION OF MITRAL REGURGITATION IS MAIN CONTRIBUTOR TO INCREASE OF CARDIAC FORWARD FLOW AFTER TRANSCATHETER AORTIC VALVE REPLACEMENT IN PATIENTS WITH PREPROCEDURAL FUNCTIONAL MITRAL REGURGITATION; HEMODYNAMIC ANALYSIS USING ECHOCARDIOGRAPHY**

Poster Contributions

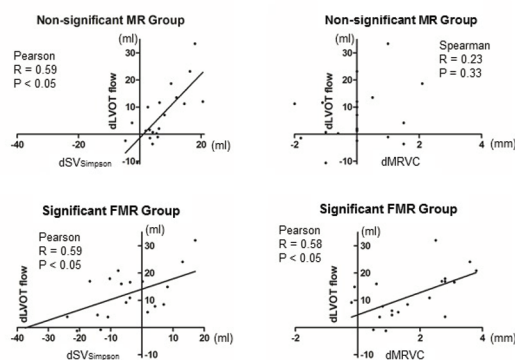
Poster Hall B1

Monday, March 16, 2015, 9:45 a.m.-10:30 a.m.

Session Title: Structural

Abstract Category: 37. TCT@ACC-i2: Mitral and Structural Heart Disease

Presentation Number: 2104-301

Authors: *Yuji Itabashi, Kentaro Shibayama, Hirotsugu Mihara, Hiroto Utsunomiya, Robert Siegel, Hasan Jilaihawi, Raj Makkar, Takahiro Shiota, Cedars-Sinai Heart Institute, Los Angeles, CA, USA***Background:** Mitral regurgitation (MR) was reported to improve after transcatheter aortic valve replacement (TAVR). However, there were few studies analyzing hemodynamics of these patients in relative to the MR improvement.**Methods:** 571 consecutive patients who underwent TAVR from December 2010 to December 2013 were enrolled. From these patients, 20 with at least moderate preprocedural functional MR were found. Age matched 20 patients with none to mild MR were also studied. BNP, vena contracta width (VC), stroke volume by the biplane Simpson's method (SV_{Simpson}), LV ejection fraction (LVEF), and LV outflow tract (LVOT) flow were assessed before and after (3-12 months, median 7 months) TAVR by transthoracic echocardiography. Correlations between the increase of LVOT flow (dLVOTf), and SV_{Simpson} increase (dSV_{Simpson}) and/or VC decrease (dVC) before and after TAVR were analyzed.**Results:** BNP decreased, and LVEF and LVOT flow increased in both groups after TAVR. SV_{Simpson} increased after TAVR in non-MR patients while it did not change in functional MR patients. The significant correlation was observed between dLVOTf and dSV_{Simpson} in non-MR patients. In functional MR patients, dLVOTf correlated with dVC and dSV_{Simpson}, however, only dVC was a predictor of the increase of LVOT flow.**Conclusion:** In both groups, BNP decreased and LVOT flow increased after TAVR. Increase of LVOT flow was caused by improvement of LV contraction in non-MR patients, and it was caused by MR volume decrease in functional MR patients.

Multivariate Analysis of LVOT Flow Increase in Significant FMR Group

Variable	Univariate	Multivariate	
	p value	OR [95% CI]	p value
dSV _{Simpson} (post SV _{Simpson} - pre SV _{Simpson}) (ml)	0.10		
dMRVC (pre MRVC - post MRVC) (mm)	<0.05	3.32 [1.17-9.38]	<0.05

SV_{Simpson}: stroke volume by biplane Simpson's method; MRVC: vena contracta width of mitral regurgitation