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## TCT@ACC-i2: The Interventional Learning Pathway

**ASSESSMENT OF SEVERITY OF MITRAL STENOSIS BEFORE AND AFTER PERCUTANEOUS TRANSVENOUS MITRAL COMMISSUROTOMY BY USING MITRAL LEAFLET SEPARATION INDEX.**

Poster Contributions

Hall C

Saturday, March 29, 2014, 10:00 a.m.-10:45 a.m.

Session Title: Valvular and Structural Heart Intervention

Abstract Category: 43. TCT@ACC-i2: Mitral and Structural Heart Disease

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**Background and purpose:** Rheumatic fever and rheumatic heart disease continue to be the major health problem in all developing countries including Bangladesh. Rheumatic mitral stenosis is a very common problem in our population having an incidence of 54 percent among rheumatic heart disease with a female preponderance of 2:1. Percutaneous balloon mitral commissurotomy (PTMC) is appealing because the mechanism of valve dilation closely parallels the mechanism of surgical mitral commissurotomy. Mitral leaflet separation (MLS) index is a novel method to assess the severity of mitral stenosis. The aim of this study is to correlate the MLS index with 2D echo planimetry method and Doppler PHT method in patients undergoing PTMC.

**Methods:** A prospective study was done in National Institute of Cardiovascular Diseases, Dhaka, Bangladesh, Al-Helal Heart Institute, Mirpur, Dhaka and Uro-Bangla Heart Hospital, Lalmatia, Dhaka during the period of August 2006 to June 2012. Two hundred and seventy five (275) patients with rheumatic mitral stenosis who underwent PTMC were evaluated clinically, by echocardiography and by catheter during and after procedure. The severity of Mitral Stenosis was assessed using 2D mitral valve area; pressure half time and MLS index. The MLS index was estimated by measuring the maximal separation of tip of the mitral leaflets in end-diastole in PLAX view and in apical 4-chamber view (A4C view).

**Results:** Mean age of the study population was  $23.51 \pm 13.22$  years. Most of the population are female (83%). After PTMC mean mitral valve area increased from  $0.83 \pm 0.14$  cm<sup>2</sup> to  $1.69 \pm 0.39$  cm<sup>2</sup> as measured by echocardiography (2D Planimetry). Pre-PTMC, mean MVA (PHT) was  $0.80 \pm 0.35$  cm<sup>2</sup> and MLS index was 5.97 mm. A good correlation was observed between MVA (2D) and MLSI ( $r = 0.36$ ,  $p = 0.0132$ ) and also between MVA (PHT) and MLSI ( $r = 0.54$ ,  $p = 0.0001$ ). Post-PTMC, mean MVA (PHT) was  $1.62 \pm 0.39$  cm<sup>2</sup> and MLSI was 11.24 mm. Here also, a good correlation was observed between MLSI and MVA (2D) ( $r = 0.39$ ,  $p = 0.0084$ ); however, a poor correlation was observed between MLSI and MVA (PHT) ( $r = 0.15$ ,  $p = 0.27$ ).

**Conclusion:** MLSI can be used as a complementary method for the assessment of Mitral Stenosis severity before as well as after PTMC.