Assessment of left atrial and left ventricular function in chronic rheumatic mitral regurgitation by strain imaging

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Introduction: There is a paucity of data on left atrial (LA) and left ventricular (LV) deformation characteristics in patients with chronic, isolated, rheumatic mitral regurgitation (MR).

Methods: This observational study was conducted at Nizam’s Institute of Medical Sciences, Hyderabad between January and June 2014. Sixteen patients with chronic isolated moderate or severe rheumatic MR (all in sinus rhythm) were compared to 19 healthy age and gender matched controls. All patients underwent imaging using a Philips iE33 2D system with an S5-1 transducer. The assessment of MR severity was based on standard guidelines. Speckle tracking analyses were performed using the Philips QLAB 9 quantification software. Patients with poor images and conflicting comorbidities were excluded.

Results: The mean age of patients with chronic MR was 31 ± 11 years with 12 females (75%). Left ventricular ejection fraction was >60% in 12 patients and subnormal (50-60%) in 4 patients. There was no difference in peak LA global longitudinal strain (PALS) between the chronic MR and the control group (26 ± 10% vs. 31 ± 6%, p = 0.12). There was a difference in peak LV global longitudinal strain (PVLS) between chronic rheumatic MR and control group (−19 ± 3 vs. −17 ± 2%, p = 0.03). In the chronic MR group 5 (31%) of the patients had decreased PALS and normal PVLS, 6 (37%) had decreased PALS and PVLS, 5 (31%) had normal PALS and PVLS. None of the patients had a normal PALS with impaired PVLS. There was a negative correlation between the mean PALS and PVLS (r = −0.7). Pearson’s correlation coefficient was computed between Trop I and PALS (r = 0.14, p = 0.46). There was no difference in peak LA global longitudinal strain between chronic rheumatic MR and control group. However, impairment of LA longitudinal function can precede impairment in LV longitudinal mechanics. These data suggest that reduction in PALS may be a more sensitive marker of severe MR than reduction in PVLS. The clinical significance of this finding needs to be validated in a larger cohort.

Correlation of regional wall motion abnormality (RWMA) by tissue Doppler imaging (TDI) with Troponin I levels – In patients with Non ST elevation Myocardial Infarction (NSTEMI)

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Background: Troponin I detects level of myocardial injury well below threshold required to result in regional wall motion abnormality (RWMA). Levels of Trop I at which RWMA appear are not well known. Detection of myocardial ischemia by visual assessment of RWMA is fraught with variability and low reproducibility. This study uses tissue Doppler imaging (TDI) to identify and quantify RWMA in Non ST elevation Myocardial Infarction (NSTEMI).

Aim: To use TDI as a useful diagnostic tool to identify and quantify RWMA in patients with NSTEMI.

Objectives: To correlate Trop I levels in patients with NSTEMI, with quantified RWMA by tissue Doppler.

To predict level of Trop I at which RWMA appears by pulsed systolic tissue Doppler imaging.

Methodology: The study was a non randomized observational prospective study done on patients with no prior documented history of CAD, admitted to Amrita Institute of Medical Sciences, Kochi with the diagnosis of ACS – NSTEMI with elevated Trop I. These patients were subjected to pulsed systolic TDI and quantified for RWMA within 24 h of onset of chest pain. This value was correlated with levels of Tropoin I.

Results: Totally 25 patients, majority of them being males (m = 22), who were admitted to AIMs, Kochi with ACS-NSTEMI were studied. 17 of them were found to have quantifiable or non-quantifiable RWMA by pulsed systolic TDI. Patients with RWMA had a mean Trop I level of 7.51, while those without RWMA had a mean Trop I of 0.14 (p value < 0.001), proving the correlation between Trop I levels and presence of RWMA to be statistically significant.

Pearson’s correlation coefficient was computed between Trop I and quantitative RWMA, and was found to be non correlating for most of the segments. The sensitivity, specificity, and accuracy of pulsed TDI were validated. Out of 17 patients with RWMA by TDI, only 8 had RWMA even by visual assessment.

Conclusion: Pulsed systolic TDI is a reliable, reproducible, and accurate diagnostic tool to identify and quantify RWMA, which may otherwise be missed by visual assessment in patients with NSTEMI.

Profile of patients undergoing TEE for PUO at tertiary care hospital

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Transeosophageal echocardiography is a very important investigation for the evaluation of patients with PUO. We studied the profile of these patients.

Materials & methods: 100 consecutive patients who were referred for TEE were analysed.

Total number of patients: 100, M:F 1.5:1, number of patients with vegetation: 86.7%, structural abnormal heart: 75%, prosthetic valve endocarditis: 4.2%, pacemaker lead vegetation: 4.2%.

Culture positive endocarditis: 62.5%, culture positive with vegetation: 83.3%, vegetation on a structurally normal heart: 75%.

Conclusion: We had nearly 35% of cases with culture negative endocarditis who responded to antibiotics and many of these were in a structurally normal heart. This stresses the importance of TEE in evaluation of fever.

Left ventricular mass – A facade for left ventricular calcification

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Calcification overlying the left side of the heart on a chest radiograph may involve either the pericardium or, alternatively, the