Role of Speckle Tracking Echocardiography in Evaluation of Left Ventricular Systolic Function in Patients With Rheumatic Mitral Stenosis

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BACKGROUND

Items	Diseased group	p-value
	Mean ± SD	
LAD	4.53±0.54	<0.001**
IVSS	1.22±0.19	0.003**
LVEDD	4.61±0.58	0.802
LVESD	2.97±0.42	0.356
LVEF	64.67±4.44	0.055

Items	Diseased group	P-value
	Mean ± SD	
Basal Anterior PLSS	-14.87±5.44	0.001**
Basal Inferolateral PLSS	-15.53±4.6	<0.001**
Basal Inferoseptal PLSS	-12.87±3.6	<0.001**
Basal Anterolateral PLSS	-14.47±6.92	<0.001**
Basal Anteroseptal PLSS	-13.6±4.29	<0.001**

Mitral stenosis (MS) is a common valvular disease in developing countries because it is a major consequence of rheumatic endocarditis. In approximately one fourth of patients with pure mitral stenosis there is a decrease in left ventricle systolic performance.

OBJECTIVE

To study the usefulness of speckle tracking echocardiography in the assessment of left ventricular systolic function in patients with rheumatic mitral stenosis.

MATERIALS AND METHODS

Case-control study included 60 persons divided into two groups (30 normal healthy volunteers of control group and another 30 patients of diseased group with pure mitral stenosis) then taking history and examination followed by echo Doppler study using VIVID E9 XD clear for assessment of the LV systolic function by speckle tracking (longitudinal strain).

RESULTS

There is significant difference in left atrial diameter and interventricular septum systolic diameter in two group (increase in diseased group).

LAD: left atrial diameter, IVSS: interventricular septum systolic diameter, LVEDD: left ventricular end diastolic diameter, LVESD: left ventricular end systolic diameter, LVEF: left ventricular ejection fraction.

Also, comparative analysis between some difference in longitudinal strain for each segment between Control and diseased group:

- In diseased group there is decrease in longitudinal strain of basal segments with normal longitudinal strain of apical segments.
-In asymptomatic patients apical segment shows tendency to be super normal

PLSS: peak longitudinal systolic strain.

CONCLUSION

In pure mitral stenosis there are affection of basal segments while apical segments shows normal or supernormal as compensatory mechanism to keep normal systolic function. So, we aim to set a standard parameter for longitudinal strain as method for follow up and detection of subclinical LV dysfunction in patients with pure mitral stenosis.