Poster Session

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The utility of left ventricle deformation in patients with myocarditis with middle-range and preserved ejection fraction

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Background: Predicting malignant ventricular arrhythmias and heart failure in patients (pts) with acute myocarditis and middle-range and preserved EF is challenge Aim: to define whether quantification of myocardial mechanics in early, acute phase of myocarditis offers more information to predict six months outcome of patients.Methods: In the 36 consecutive pts with myocarditis, middle age 32.86 ± 12.04yr, 75% males, echocardiography exam was done 1-3 day of diseases, including conventional parameters and comprehensive speckle tracking LV deformation analysis with longitudinal (L), circumferential (C) strain (S;%), strain rate (SR, 1/sec) and rotational LV mechanics. Results: The most patients were present as infarct-like myocarditis (80.56%), the others patients were present as heart failure-like (11.11%) and arrhythmia-like myocarditis (8.33%). At admission 27 (90%) pts had chest pain, 20 (66.7%) pts had ECG changes, 15 (50%) pts had symptoms of heart failure, 5 (16.7%) pts had arrhythmias. Amount of edema and fibrosis assessed by cardiovascular magnetic resonance (CMR) and echo correlate significantly. Classical and conventional parameters of LV systolic function, and deformation were not significantly different between groups. However, mechanical dispersion index (IMD) of global LS and systolic S were significantly different between groups (p < 0.05). Conclusion: Myocardial deformation imaging, like speckle tracking echocardiography, offers deeper insight into complex mechanical abnormalities during not only LV contraction but LV relaxation in longitudinal directions in patients with acute myocarditis.

	Infarct-like	Arrhythmia-like	Heart failure-like	p
EF (%)	57.5 ± 5.42	54.7 ± 12.9	58.3 ± 6.8	NS
GLS endo (%)	-20.8 ± 2.59	-19.78 ± 2.27	-17.36 ± 5.65	NS
GLS (mid %)	-18.31 ± 2.4	-17.31 ± 1.52	-15.3 ± 5.10	NS
GLS epi (%)	-16.15 ± 2.28	-15.20 ± 0.92	-13.55 ± 4.68	NS
IMD LS (ms)	37.04 ± 7.71	33.04 ± 6.58	60.75 ± 38.56	0.008
CS endo (%)	-26.39 ± 6.93	-21.59 ± 3.88	-25.17 ± 6.48	NS
CS mid (%)	-17.32 ± 6.77	-13.03 ± 2.07	-15.95 ± 4.41	NS
CS epi (%)	-10.99 ± 6.89	-7.13 ± 0.72	-9.53 ± 2.73	NS
IMD CS (ms)	47.69 ± 8.86	41.43 ± 23.92	41.01 ± 20.51	NS
IMD SL peak S*	12.27 (21)	13.96 (4)	20.28 (84)	0.042

*Median and range values are presented.