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Rejection of the transplanted heart: What can we do to diagnosis?

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Introduction: The gold standard of diagnosis of rejection after HTX is endomyocardial biopsy. However, non-invasive methods for the early diagnosis of rejection reactions are currently being studied. With the improvement of the possibilities of ultrasound diagnosis of heart function, it becomes possible to study longitudinal deformation of the myocardium, as an early marker of violations of the contractile function of the heart.

Objective: To determine the possibilities of ultrasound TDI and strain heart rate as early markers of graft rejection.

Method: Patients n=32 after HTX were divided into two groups according to the results of EMB. The first group (1R, 2R) n=23 patients (20 men, the average age was 41±1.2 y); the second group (3R) n=9 patients (seven men, the average age 44±2.6 y). The duration of EMB after transplantation was 4-60 months. Survey methods: TDI and strain (Epic Q7 Philips). EMB signs of rejection of the humoral type (immunofluorescence study) and cellular (perivascular and interstitial infiltrate with or without necrosis and fibrosis).

Results: In case of TDI, there was no reliable difference between the two groups: mean Smed: 7.81±1.7 cm/s vs. 7.97±2.1 cm/s and mean Slat: 8.78±2.18 cm/s against 8.4±1.45 cm/s (as p=NS). However, the mean longitudinal strain of the left ventricle (strain) in the first group (-16.5±0.9) was significantly higher in comparison with the second group (-12.2±1.2), (p<0.05). Sensitivity and specificity for longitudinal deformation were 68% and 46%, respectively. In all patients (n=5, 1gp-1, 2g-4) with vasculopathy detected with CAG, the mean longitudinal deformation of the LV is decreased (strain-13.3).

Conclusion: Strain can be considered as a non-invasive marker of chronic transplant rejection and vasculopathy after cardiac transplantation.

Biography

Gulzhan Myrzakhmetova is a cardiologist, candidate of Medical Science. She graduated from Almaty State Medical Institute in General Medicine. She has extensive work experience at regional cardiology hospitals. She has published more than 20 research articles. Her research interest includes heart transplantation, MSC and HF.