An Alternative for Early Detection of Cardiac Involvement in Gaucher Type 1 Disease: Speckle Tracking Echocardiography
Sabire Gökalp¹, Serkan Ünlü², Aslı İnci¹, İlyas Okur¹, Fatih Ezgü¹, Leyla Tümer¹
¹ Gazi University Faculty of Medicine, Department of Pediatric Metabolism
² Gazi University Faculty of Medicine, Deparment of Cardiology

Background:
Gaucher type 1 disease is a multisystemic lisosomal disorder. Cardiovascular system is affected over time. The function of both ventricles may have been affected in patients with Gaucher Disease. In this study, we sought to investigate deformation properties of right (RV) and left ventricle (LV) in patients with Gaucher Disease by using speckle tracking echocardiography.

Methods:
Total of 19 patients were included. Nine patients with Gaucher Diseases were enrolled. A matching control group consisting ten healthy indivuduals was created. Two-dimensional echocardiography datasets were obtained for both ventricles in all patients. LV global longitudinal strain (GLS), RV free-wall (FW) LS were analyzed.

Results:
No significant differences were observed for the LV ejection fraction (EF), peak systolic velocity of the tricuspit annulus, tricuspid annular plane systolic excursion and RV fractional area change by being in the normal range for both groups (p=NS for all). The speckle tracking measurements showed that patients with Gaucher Disease has decreased longitudinal deformation of LV (-20.1% ± 1.3 vs.-22. 4% ± 2.6, p=0.029) and RV (-22.2% ± 2.3 vs.-25. 4% ± 3.7, p=0.036) compared to healthy volunteers.

Conclusion:
Patients with Gaucher Disease showed lower LV and RV deformation. In conclusion, our data suggest that subclinical LV and RV systolic dysfunction could be observed in patients with Gaucher Disease. However, larger follow-up studies are required to validate our results.
