

Right ventricle systolic and diastolic function in juvenile-onset systemic lupus erythematosus patients

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Background: Cardiovascular events are a major cause of mortality and morbidity in patients with systemic lupus erythematosus (SLE). Several studies have described impaired systolic and diastolic function in adults with SLE, but very few reports have been published in children.

Aim: The aim of our study was to describe right (RV) ventricular systolic and diastolic function in a population of adolescents and children with SLE .

Methods:

Cross-sectional and retrospective study of juvenile-SLE patients' medical records. All patients underwent two-dimensional, M-mode, conventional Doppler and tissue Doppler imaging (TDI) to evaluate systolic and diastolic right ventricular function.

Results:

13 Juvenile-SLE female patients were included, with disease onset between 6 and 16 years of age (mean 11,8 years), and mean disease duration of 6,6 years (2-15 years). One patient had moderate to severe aortic regurgitation (AoR), one had pulmonary hypertension (HTP), 5 patients had systemic hypertension (HTA); RV systolic function was normal in all patients except for one, with AoR (TDI S velocity 9,3 cm/s, tricuspid annular plane systolic excursion (TAPSE) 14,8 mm).

RV diastolic function markers were altered in some patients: decreased peak velocity of E wave in 4 patients, with increased A' wave velocity in 1 patient (HTP case). E/E' and E/A ratios were normal in all cases. RV outflow tract acceleration time was decreased (implying increased mean pulmonary artery pressure) in the patient with HTP.

Due to the small sample size, no correlations with other clinical or laboratorial markers were statistically significant. BNP was increased only in the AoR patient.

Conclusion: SLE patients can have subclinical cardiac dysfunction, and diastolic changes can be an early sign. Subtle abnormalities of the RV diastolic function were found even in the presence of a preserved systolic function. Preclinical detection of ventricular dysfunction may identify a pediatric population at risk requiring early and aggressive interventions for the prevention of cardiovascular events.