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Tissue doppler derived left ventricular global diastolic and regional systolic function in children with dilated cardiomyopathy

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Background & Aim: Dilated cardiomyopathy (DCM) is characterized by impaired systolic function of one or both ventricles. The aim of this study is to assess left ventricular (LV) regional systolic as well as global systolic and diastolic functions in children with DCM using tissue Doppler imaging.

Subjects & Methods: The study comprised 30 patients with DCM (4.4 ± 3.3 years) and 10 healthy children as a control group. ECG-gated echocardiography was done using m-mode and conventional Doppler as well as Tissue Doppler imaging to obtain modified Tei index, mitral annular wave velocities (S', E' and A') as well as offline analysis of color tissue velocity imaging to obtain the peak systolic velocities of 12 LV points in 4 chamber apical, 2 chamber and long axis views.

Results: The peak systolic velocities of Mitral annulus as well as the different LV segments of patients were significantly lower than that of the control group. The E/E' ratio of patients was (11.39 ± 2.4). S' and E' wave of lateral and septal aspects of mitral annulus were correlated. The Tei index of LV of patients (0.568 ± 0.1136) was significantly higher than that of the control group. The averaged mid LV segments showed significantly lower peak systolic velocity (3.018 ± 0.777 cm/sec). There was significant difference between different LV segments as regards the peak systolic velocities ($P < 0.05$).

Conclusion: In pediatric DCM the diastolic dysfunction lies in the borderline zone, systolic and diastolic dysfunctions are correlated. There is regional heterogeneity of left ventricular systolic velocities being in general lower in mid segments.

Biography

Sonia A El Saiedi graduated from Medical School, Cairo University 1987. She is trained in Boston Children Hospital in 1998. She is now working as Professor of Pediatric Cardiology in Cairo University Children Hospital, Egypt as well as Director of Pediatric Cardiac ICU and Cardiomyopathy Clinic.

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