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Evaluation of cardiac functions by tissue Doppler echocardiography in children with familial Mediterranean fever

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Objectives: Although familial Mediterranean fever (FMF) may carry a potential for cardiovascular disorders because of sustained inflammation during its course, there have been limited numbers of studies investigating the cardiac functions in pediatric patients. The aim of this study was to assess the both ventricular diastolic function using conventional echocardiography and tissue Doppler imaging in children with FMF.

Methods: The study population included 25 patients with FMF (12 females; mean age: 11.8 ± 5.30 years) and 23 healthy subjects as controls (13 females; mean age: 9.88 ± 3.69 years). All the patients enrolled in the study fulfilled the clinical criteria for FMF. All the patients were homozygous for mutations in FMF gene. The both ventricular functions were measured using echocardiography comprising standard M-mode and conventional Doppler as well as tissue Doppler imaging during an attack-free period.

Results: C-reactive protein and fibrinogen levels were significantly higher in FMF patients as compared to healthy controls ($p=0.01$). The conventional echocardiographic parameters with myocardial performance index were in normal ranges and similar in FMF patients and controls ($p>0.05$). However, right ventricular diastolic dysfunction was observed in FMF patients documented by tissue Doppler imaging ($p=0.03$ for E't and A't wave ratio).

Conclusions: We have demonstrated that although left ventricular functions were comparable in the patients and the healthy subjects, right ventricular diastolic function indices were impaired in FMF patients by using tissue Doppler imaging during childhood. Impaired right ventricular diastolic function may be an early manifestation of cardiac involvement in pediatric patients with FMF.