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Time Domain Heart Rate Variability Analysis In Familial Mediterranean Fever Patients

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Introduction: Familial Mediterranean Fever (FMF) is an autosomal recessive autoinflammatory disease, characterized with recurrent fever, abdominal pain, chest pain and joint involvement. Cardiovascular involvement can be seen secondary to chronic inflammation. This severe outcome is a major cause of morbidity and mortality in FMF patients. There are a few studies investigating cardiovascular involvement in FMF patients. Heart rate variability (HRV) is a non-invasive index of neuronal modulation of heart rate. In this study, autonomic functions of heart in preclinical stage of heart disease were evaluated in FMF patients with time domain heart rate variability analysis.
Methods: The study population included 66 patients with FMF during non-attack period and 40 healthy children as controls. Patients and controls underwent 24-hour ambulatory Holter monitoring.
Results: There was no significant differences between the two groups in age, height, sex, body mass index, arterial blood pressure ($p>0.05$). QT and QTc dispersion s, which shows ventricular repolarization homogeneity were similar in the two groups ($p>0.05$). Mean RR time, minimum and maximum heart rate, SDNN and SDANN were similar in the two groups ($p>0.05$). SDNN-i, RMSSD and pNN50 significantly decreased in the FMF patients ($p<0.05$). In the FMF patients, SDNN-i, RMSSD and pNN50 were found 85.5□21.2 ms, 62.8□28.3 ms, and 24.8□12.3% respectively. In FMF patients with and without M694V mutation, time domain HRV parameters were found as similar ($p>0.05$).
Conclusion: Our findings show cardiac involvement can exist in FMF patients even during non-attack period. The analysis of heart rate variability might be helpful to detect cardiac complications in preclinical stage of the cardiac involvement.