No Circadian Changes of Heart Rate Turbulence Parameters in Patients with Myocardial Infarction

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Background: Heart rate turbulence (HRT) is a technique to identify patients at risk of cardiac mortality in patients with myocardial infarction (MI). However, little information is available concerning its circadian changes.

Purpose: The aim of the present study was to determine whether circadian changes in HRT parameters were found or not in post-MI patients.

Methods: We enrolled 37 post-MI patients (age 72±11, male 25). All patients underwent a 24-hour Holter electrocardiogram for assessing HRT. The determination of HRT was composed of two parameters: turbulence onset (TO) and turbulence slope (TS). In addition, we also calculated heart rate variability (HRV) variables. Circadian changes of each index were evaluated in the two time periods: daytime (9-21 h) and nighttime (21-9 h).

Results: The values of TO and TS were -0.32±0.72% and 2.14±2.09ms/RRI, respectively during daytime and -0.25±0.90% and 2.41±2.44ms/RRI, respectively at nighttime. No circadian changes were found in TO and TS. As regards HRV, SDNN and HF components represented lower values at nighttime than during daytime (P=0.04 and P=0.03, respectively).

Conclusion: In post-MI patients, no circadian changes were found in HRT parameters whereas they exist in some of HRV variables.

Keywords: heart rate turbulence, circadian change, myocardial infarction