Circadian Variation of Late Potentials on 24-Hour Holter Ambulatory ECG in Patients with Brugada Syndrome

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**Background:** There are few reports concerning circadian variation of late potential (LP) in Brugada syndrome (BS). We investigated whether BS associated with circadian variation of LP dynamics in both atria and ventricle. **Methods and Results:** In 35 consecutive patients (mean age 43±14 years, 35 men) with electrocardiograms (ECG) consistent with BS we recorded the atrial and the ventricular signal-averaged ECG on newly developed 24-hours Holter ambulatory ECG system at 4 points (Each 2 points in daytime and nighttime). We measured the RR interval and analyzed the component of HF, LF/HF at the same time. 5 patients were negative LP at daytime and positive LP at nighttime. 25 patients were positive at both daytime and nighttime. 5 patients with negative LP at both daytime and nighttime. There was significant positive correlation between filtered P wave duration and HF (p<0.01). Whereas, there was significant positive correlation between LAS and HF (p<0.01). There tended to be negative correlation between RMS40 and HF (p=0.06). **Conclusions:** Circadian variation ornament LP in both atria and ventricle. These results suggest that increased nocturnal vagal activity may play an important role in the arrhythmogenesis of the BS. **Keywords:** Brugada syndrome, circadian variation