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Daily activity improves heart rate variability and sleep quality in patients with mild hypertension and/or stable angina pectoris

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Some studies have evaluated that sleep and physical activity are involved in cardiovascular prognosis. The objective of this study was to evaluate the potential role of daily activity in heart rate variability (HRV) at sleep periods and clarify relationships between daily activities and sympathovagal balance. We conducted this study as a nonrandomized, prospective, six-month study in 42 patients with hypertension and/or stable angina pectoris. Daily activity was measured by the active meter and HRV was evaluated by the Holter 24-hour ambulatory electrocardiogram at the start of the study (BASE) and after 6 months (6MoA). Heart rate, HRV parameters, such as low-frequency (LF), high-frequency (HF) and LF/HF ratio were calculated 1 hour (1After), 3 hours after sleep onset (3After) and 1 hour before awaking (1Awake). The active mass at 6MoA increased in 26 patients (active group), while it decreased in 16 patients (inactive group). LF/HF ratio of 1Awake was higher the inactive group than active group at BASE. LF/HF ratio during sleep, 1After, 3After and 1Awake in inactive group were higher than active group at 6MoA. LF and HF were significantly increased at 1Awake in active group from BASE to 6MoA. There was significant increase in HF at 3After in active group, and in LF/HF ratio at 1After in inactive group. There was significant increase in LF at 1Awake in inactive group. The decrease in active mass changed HRV outcomes with increased LF/HF ratio at all sleep periods. These findings suggest that the increase of daily activity improves sleep quality.

Biography

Natsuki Nakayama has graduated from Nagoya University, Nagoya Japan. She is a registered Nurse, who currently works as an Associate Professor in the Nagoya University Graduate School of Medicine. Her research interest includes preventions of diseases such as cardiovascular disease, gastrointestinal motility and autonomic nervous activity.

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