



P120 Early Sympathovagal Imbalance Associates with Future Arrhythmic Events in Hypertensives

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ABSTRACT

Purpose/Background/Objectives: Cardiac autonomic dysfunction is associated with increased cardiovascular mortality and arrhythmias. The aim of the study was to investigate the effect of heart rate variability (HRV) in the prognosis of future arrhythmic events.

Methods: We studied 292 untreated at baseline hypertensives (mean age 53 ± 13 , 153 males). Cardiac autonomic function was evaluated by analysis of short-term HRV using 24-h ambulatory blood pressure monitoring and the standard deviation of measurements. Left ventricular mass index (LVMI) was estimated echocardiographically. Aortic stiffness was assessed with carotid-femoral pulse wave velocity (cfPWV) and aortic augmentation index corrected for heart rate (AIx@75). Patients were followed up for 13 years. The primary endpoint was a composite of atrial/ventricular tachycardias, symptomatic multiple premature ventricular contractions, second and third-degree heart blocks and pacemaker/defibrillator placement.

Results: Patients with the primary endpoint ($n = 37.13\%$) had lower 24-h daytime HRV (9.6 beats per minute vs 11.1 beats per minute, $p = 0.005$), higher systolic blood pressure (168 mmHg vs 163 mmHg, $p = 0.003$), higher cfPWV (8.4 m/s vs 7.7 m/s, $p = 0.005$), higher LVMI (133 g/m^2 vs 122 g/m^2 , $p = 0.002$) and higher AIx@75 (29.0% vs 26.3%, $p = 0.043$) compared to patients with no events. In Cox regression analysis, only higher HRV was associated with lower risk of arrhythmic events (Hazard ratio per 1 mmHg = 0.87, 95% Confidence intervals 0.76 to 0.995, $p = 0.043$) when adjusted for age, gender, cfPWV, LVMI and AIx@75.

Conclusion: Lower heart rate variability is associated with increased risk of future arrhythmic events suggesting an early sympathovagal imbalance that could lead to future events.

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