

## P-107

### **The influence of dipper pattern on ventricular functions with tissue Doppler, vascular functions with arterial stiffness and heart rate variability in newly diagnosed arterial hypertension in children**

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**Objectives:** This study is designed to investigate the differences of pulsatile hemodynamic, echocardiographic, 24-hour Holter monitorization and heart rate variability parameters in newly diagnosed arterial hypertension (AH) children and also evaluate these parameters among dipper patterns.

**Methods:** The study group included 30 children with newly diagnosed essential AH and 30 healthy controls. Children with AH were also divided into two groups, dippers, and non-dippers. Physical examinations, 24-hour ambulatory blood pressure monitoring, 24-hour Holter monitorization, 24-h heart rate variability (HRV), conventional 2-dimensional and Doppler echocardiography, and tissue Doppler imaging (TDI) were performed. Pulse wave analysis using an oscillometric device was performed to measure augmentation index (AI) and pulse wave velocity (PWV).

**Results:** A total of 60 subjects were included in our study for analysis from November 2016-November 2017. PWV and heart rate values were significantly higher in children with AH. AI value was significantly higher in the non-dipper group. There were significant differences of M-mode and tissue Doppler echocardiographic parameters between AH and control groups while these parameters were similar according to dipping pattern in AH group. Time domain values, the standard deviation of all RR intervals (SDNN), which reflect parasympathetic activity, were significantly less in AH group. Also, SDNN values were significantly lower in the non-dipper group compared to dipper group. In frequency domain measures, LF (ms<sup>2</sup>) measured in daytime value was significantly lower in AH group compared to control. According to dipper pattern, LF (ms<sup>2</sup>) measured in nighttime values were also significantly lower in the non-dipper group.

**Conclusion:** Our study suggests that with the use of vascular function parameters, echocardiographic measurements, and HRV parameters there are significantly lower values observed in children with newly diagnosed AH compared to controls. While tissue Doppler parameters were similar, HRV parameters related to parasympathetic tone shows significant variations among dipping patterns. Elevated PWV and AI values were found in AH group and non-dipper group respectively.