

Serum Uric Acid Levels in Normotensive Children With Family History of Essential Hypertension

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Many factors, including family history, genetics, insulin resistance and high body mass index may play a role in the development of essential hypertension. The family history of hypertension is an important risk factor for essential hypertension seen in children. It has been said that hypertensive patients with nondipper blood pressure status have higher end organ damage. Increased left ventricular mass is an important marker for hypertensive cardiac injury. It has been reported that elevated serum uric acid concentrations contribute development of essential hypertension at early stages. The aim of this study was to evaluate diurnal blood pressure variation (dipper and nondipper status) of normotensive children with family history of essential hypertension and relationship between left ventricular mass and serum uric acid level. The children aged between 8-22 years were enrolled. Forty (19 girls, 21 boys) of them were the normotensive offspring of hypertensive parents and twenty (10 girls, 10 boys) of them were the normotensive offspring of normotensive parents. Medical history has been obtained, physical examination, 24h ambulatory blood pressure monitoring, echocardiographic examination and calorimetric enzymic measurement of serum uric acid have been performed. Children with family history of hypertension divided into two subgroups according to blood pressure variation as dipper and nondipper group. The nondipper group showed higher left ventricular mass index and serum uric acid levels compared with dippers and controls ($p < 0.001$). Left ventricular mass index results of children with family history of hypertension were corrected by age and then Ridge regression analysis was performed. It is observed that left ventricular mass index change with serum uric acid levels ($p < 0.001$), daytime systolic blood pressure levels ($p < 0.001$), night systolic ($p: 0.006$) and diastolic blood pressure levels ($p: 0.029$). We conclude that cardiac injury begin much more earlier and its related to elevated uric acid concentrations in the nondipper normotensive children with family history of hypertension.