

Relation between body mass index and blood pressure in pediatrics, Shiraz

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Background and Aims: As many studies revealed that adult hypertension (HTN) are contributed to childhood HTN, childhood blood pressure (BP) predicts adult BP. The incidence of HTN in children may vary according to the patient's body mass index (BMI), gender, ethnicity and family history. Determination of cases with HTN in childhood is very important to prevent HTN and other cardiovascular disease in adult. Therefore this study was performed to evaluate the prevalence of childhood HTN and determining the relation between BMI and BP in our population.

Methods: 209 girls between 9 to 10 years old were selected in this study, randomly. In all subjects weight, height, BMI, systolic blood pressure (SBP) and diastolic blood pressure (DBP) were measured and subjects with elevated SBP and DBP were measured by another physician again. Then standard SBP and DBP of our cases were obtained relating the acquired data to standard growth curve. Statistical analysis was performed by SPSS 16.

Results: Base on the National High Blood Pressure Education Program (NHBPEP) guidelines , subjects are categorized to three groups , normal , prehypertensive and hypertensive which defined as BP percentile < 90th , BP percentile ≥ 90 th and < 95th and BP percentile ≥ 95 th ,respectively for both SBP and DBP. The frequencies of normal, prehypertensive and hypertensive subjects for SBP were 52.2 % , 10.5% and 30.1% respectively and for DBP were 81.3%, 53% and 6.2%. The mean \pm standard deviation of BMI, SBP and DBP were 18.79 ± 4.09 , 114.97 ± 13.47 and 64.75 ± 10.80 , respectively. Statistical analysis revealed that, association between BMI and hypertensive SBP was significant ($p < 0.05$) while the relation between DBP and BMI was insignificant.

Conclusions: this study confirmed that BMI is the major risk factor for HTN in pediatric population therefore, decrease of weight with diet and exercise is recommended.

Keywords: Hypertension; Pediatrics; BMI