Correlation of dietary habits with systolic blood pressure in healthy children

Maria Efthymia Katsa¹, Maria Batsikoura¹, Loukia Dolianiti¹, Vasileios Vasilopoulos¹, Dafni Eleni Kougioumtzi Dimoliani¹, Ioannis Dimopoulos², Andrea Paola Rojas Gil¹

1. School of Human Movement and Quality of Life, Department of Nursing, University of Peloponnese, Sparta, Greece
2. School of Management and Economics Technological Educational Institute of Peloponnese, Kalamata, Greece

Blood pressure could be affected by nutritional habits and intake of many nutrients. Excessive energy intake also plays important role in hypertension. Ann Rev Nutr. 2010;30:365-401.

Pediatric hypertension is a risk factor for adult hypertension and cardiovascular disease which entails the necessity of early detection. Glob Pediatr Health. 2017;4:2333794X17712637.

Aim

To investigate how nutrition habits are correlated with systolic blood pressure (SBP) in children and adolescent population.

Methods

1395 children and adolescents from Greece were enrolled to participate the research. A specially designed questionnaire regarding eating habits - on a weekly basis - was used. Blood pressure was measured twice for each child. The percentile for blood pressure was calculated according to children’s age and height. Children were studied in 3 categories: Group A were children<9 years old (36.77%), Group B were children ≥9 years old and ≤14 years old (36.06%) and Group C were children >14 years old and ≤17 years old (27.17%).

Results

The percentage of children with SBP%>95 was: 29.4% in group A, 35.9% in group B and 34% in group C.

The majority of children consume breakfast every morning (85.9%).

Children of group C consume less fruits, vegetables, cereals, olive oil and milk products and more fast food while they are not used to consume their meals at the same time every day.

Group A

The logistic regression analysis showed that children who consume meat more than 3 times per week have 123.6% greater relative probability for increased SBP% (p= 0.038).

Group B

Children who consume cereals more than 3 times per week have 83.2% greater relative probability for increased SBP% (p= 0.032).

Discussion-Conclusion

Diet plays a crucial role in blood pressure regulation. The adjustment of dietary structure may be helpful in both prevention and treatment of hypertension.

Children who breast-fed may have lower blood pressure since bottle feeding tends to be related to lower social class, a greater tendency to obesity, and a less healthy diet in later life. BMJ. 2003; 327(7425): 1189–1195.

WHO recommends a reduction in sodium intake to control blood pressure in children aged 2–15 years. Sodium is found not only in table salt, but also naturally in a wide variety of products (dairy, meat, processed food etc). WHO, Reducing sodium intake to control blood pressure in children, 2017.

The restriction of saturated fat from infancy until 15 years of age has found to decrease childhood and adolescent blood pressure. Hypertension. 2009 Jun;53(6):918-24.