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The value of markers for assessing of hypertension development in young patients

Dumitru Matei, MA Iancu, CG Bejan, LN Ghilencea, CC Diaconu

University of Medicine and Pharmacy Carol Davila, Bucharest, Romania

Corresponding author: Professor Dumitru Matei, University of Medicine and Pharmacy, 'Carol Davila', Department of Family Medicine, Bucharest, Romania. E-mail: drmateidumitru@yahoo.com

Background: In this study we aimed at the involvement of risk factors in the occurrence of hypertension in young people such as family history of hypertension, premature cardiovascular disease and diabetes, smoking, the fasting glucose, dyslipidemia, pulse rate and anthropometric value.

Method: In this observational study we included one hundred male patients aged up to 55 years old (46.9 ± 5.7) from which 50 with hypertension and 50 were normotensive. The two groups of patients were compared in terms of the values of fasting plasma glucose, the pulse rate, the BMI and waist circumference, their positive family history of hypertension, premature cardiovascular disease and diabetes, and regarding the prevalence of dyslipidemia, diabetes and smoking.

Results: Patients in the group with hypertension showed values of fasting glucose ($p=0.014$), the pulse rate ($p=0.001$), BMI ($p=0.001$), the waist circumference ($p=0.001$) and the ratio waist/hip circumference ($p=0.001$), significantly higher than their average in normotensive patients group. Also the prevalence of diabetes ($p=0.003$) and dyslipidemia ($p=0.001$) was significantly higher in patients with hypertension. Patients in the group with hypertension had a family history of premature cardiovascular disease ($p=0.012$), diabetes ($p=0.006$) statistically significantly more frequent than in the group with normal blood pressure. In the case of electrocardiographic parameters evaluated statistically only shortened QT interval ($p=0.011$) was observed.

Conclusions: The data reveal the role of elevated fasting glucose and obesity in hypertension appearance in young patients. The existence of diabetes or dyslipidemia are also risk factors for the occurrence of hypertension in young people. So the history of premature cardiovascular disease and diabetes at their relatives is a genetic background for further development of hypertension in young people.