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RELATIONSHIP BETWEEN SERUM CHOLESTEROL AND DEVELOPMENT OF HYPERTENSION IN THE POPULATION OF THE BRISIGHELLA HEART STUDY
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Hypertension (HTN) and high serum cholesterol (HC) level are often combined in the same subject where they contribute to the overall cardiovascular risk profile. Moreover, HC is associated with an impaired vasodilatatory capacity and an overexpression of vascular angiotensin II receptors, which can contribute to the development of HTN. Aim of the present study was to investigate the role of HC, if any, in the development of HTN in the Brisighella Heart Study. 1230 normotensive subjects (SBP/DBP<140/90 mmHg) enrolled in the Brisighella Heart Study in 1972 have been divided according to serum cholesterol (T-Chol) tertiles and followed for 12 years to evaluate the proportion of patients developing HTN. After adjustment for the main confounding factors (family history of HTN, age, BMI, sex, and diabetes) the rate of HTN was significantly increased in subjects with T-Chol >239 mg/dl both after 8 (1980) and 12 (1984) years of follow-up.

% HTN 1980 % HTN 1984
T-Chol <200 mg/dl 17.8 25.3
T-Chol = 200–239 mg/dl 18.7 30.8
T-Chol >239 mg/dl 34.9* 52.0*

* P < 0.001 vs. other subgroups

Moreover, the rate of development of HTN was enhanced in the two older subgroups of subjects (30-59 and >59 years). These data suggest that HC could substantially contribute to the development of HTN and strongly support the wide role of lipid lowering drugs and particulary statins in the primary prevention of cardiovascular disease.

Key Words: hypercholesterolemia, hypertension

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HYPERCHOLESTEROLEMIA AND PROGRESSION OF HIGH-NORMOL BLOOD PRESSURE TO HYPERTENSION
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Subjects with elevated serum cholesterol levels are often characterized by blood pressure (BP) values in the high level of the normal range, suggesting that hypercholesterolemia (IC) can influence the development of hypertension (HTN). The aim of the present study was to evaluate the role of IC on incidence of HTN in 70 young subjects with high-normal BP (as defined as WHO/ISH guidelines) followed for 15 years. At the baseline examination, all the subjects underwent: a) complete physical examination with medical history and family history of HTN, b) routine EKG, c) BP measurement at rest and d) in response to mental arithmetic test, and e) determination of serum total cholesterol (T-Chol) levels. At the end of the follow-up period (15 years), the incidence of HTN (BP >140/90 mmHg), corrected by confounding factors (age, sex, BMI, and sodium intake), was greater in subjects with baseline serum T-Chol level > 200 mg/dl. In particular, the predictive cut-off value was T-Chol = 228 mg/dl. Moreover, the presence of IC was more often associated with BP hyperreactivity (HR) to mental arithmetic test, and patients with IC and HR were characterized by the higher risk of progression of HTN.

The results of our study suggest that IC, which alters the peripheral and the renal vascular tone, may have a relevant role in the progression of high-normal BP to HTN. Hence, patients with high-normal BP and IC, which are at high risk of HTN over time, can greatly benefit from lipid-lowering therapy that by reducing the cholesterol levels and improving the vascular compliance could reduce the progression of high-normal BP to HTN.

Key Words: High normal blood pressure, Hypercholesterolemia, Hypertension

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SPREADING OF ARTERIAL HYPERTENSION IN SPECIAL POPULATION
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The objective of the study was to investigate the effect of occupational exposure to heavy metals on the spreading of arterial hypertension. The population living in the region situated near the gold-mining areas and around the most polluted river with heavy metals (Pb, Zn, Cu) in Georgia was chosen.

We used international protocols and arterial hypertension was diagnosed basing on the classification introduced by the American International Committee studying arterial hypertension (1999). Simultaneously spreading of coronary heart disease, its risk-factors and other therapeutic diseases were investigated. The study included 269 persons (18-55 years old), among them 186 women and 83 men. Spreading of arterial hypertension in the population was 37%, among them the mild forms were the highest (22%). Though there was high content of heavy metals in head hair and biological liquids, spreading of arterial hypertension, coronary heart disease as well as other risk-factors were not different from those received from the population of other regions of Georgia. The growth retardation was marked among the whole population as well as pathologic manifestations of cerebration such as anxiety, irritability and aggression and on the top of it there were numerous endocrine pathologies – thyroid hyperplasia, nodular goiter. We didn’t find any relationship between pollution with heavy metals and spreading of arterial hypertension.

Key Words: arterial hypertension, special population, heavy metals

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EFFECTS OF SMOKING CESSION AND PHYSICAL ACTIVITY(pa) ON THE INCIDENCE OF CARDIOVASCULAR DISEASE SUCH AS HYPERTENSION AND PERIPHERAL ARTERIAL DISEASE(PAD); AN EIGHT-YEAR FOLLOW-UP STUDY
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We investigated the effects of life style,such as smoking cessation and (pa), on the incidence of hypertension and PAD in 511 healthy subjects (aged 31-45 years at the first visit)who had received first medical examination between 1990 and 1993 and were reexamined in 2001.Subjects were placed into one of the following 3 classes with respect to smoking habits:the numbers of subjects in each class are shown in parentheses: current smokers(5+2(218),who were subjects with a history of cigarette smoking at entry and during follow-up(122),including attempted