AGE-RELATED METABOLIC DISORDERS BY CARDIOVASCULAR DISEASES IN WOMEN WITH CONSIDERATION OF THE GENETIC PREDISPOSITION

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INTRODUCTION

Cardiovascular disease is a most frequent cause of early disability and high mortality. The influence of various risk factors is different between men and women; the effect of the menopause is important in women and age-dependent risk factors play additional role along with well-known atherosclerotic factors, as well as the genetic predisposition. Despite of this , many studies of cardiovascular disease have included mostly men [1, 2], Postmenopausal women's life is characterized by loss of ovarian follicular activity and estrogen deficiency [1]. Metabolic rearrangement of the organism is an increased risk of atherosclerosis progression and atherosclerotic damage of blood vessels [3]. Numerous studies conducted on genetics of cardiovascular diseases [4].

AIM

The aim of our study was to establish age-related metabolic disorders of cardiovascular diseases in women with consideration of the genetic predisposition.

MATERIAL AND METHODS

58 reproductive-aged (less than 45 years) and 32 menopausal (more than 45 years) women with dislipidemia, arterial hypertension, obesity, metabolic syndrome and other symptoms , who had been admitted to the Central Clinic of Tbilisi State Medical University (Georgia) during 2009–2011, were investigated and compared with each other. Subjects with cystic disease, ovariectomy, or using hormonreplacement therapy was excluded from studiing group.

In each group we investigated blood estradiole, Lipid spectrum (LDL, HDL, TG, VLDL, TC), Fibrinogen, C-reactive protein levels (CRP). Estrogens content in blood was measured by ELISA method. Lipid spectrum in peripheral blood from patients was investigated by enzyme-colorimetric method. Using Doppler investigation of arteries in color duplex scan mode carotid intima-media thickness was established.

Statistical analyses of the obtained results were performed by SPSS (version 10.0) program package. Result were obtained in form of standard deviation of average values. Difference between groups was assessed by student *t*+ criterion. In all cases statistical confidentiality was defined according to < 0.05 index.

Research complies with the norms of the bioaticle's Foundations. The local ethics committee approved the protocol, and informed consent was obtained from all participants.

RESULTS AND DISCUSSION

According to our data in menopausal women blood estradiol levels and HDL were statistically significantly

reduced. Fibrinogen, LDL , triglycerides and total cholesterol levels and catalase activity were increased, while C-reactive protein and VLDL levels were not significantly changed in these two age groups. It is noteworthy that the lipid metabolism disorders were more expressed especially in menopausal women with the genetic predisposition to atherosclerotic–induced cardiovascular diseases. At the same time, in menopausal, as well as in reproductive-aged, women with the genetic predisposition to atherosclerotic-induced cardiovascular diseases a positive correlation between VLDL, TC, TG levels and the severity of hypertension was revealed, but between HDL level and the severity of hypertension the negative correlation was established; estrogen-dependent factor does not play a major role in the pathogenesis of these diseases in women with the genetic predisposition to atherosclerotic-induced cardiovascular diseases.

Some correlations were detected between the parameters of lipid metabolism, atherogenesis intensity (carotid artery intima-media thickness) and inflammatory markers (C-reactive protein and fibrinogen levels). There is positive correlation between fibrinogen and CRP, between fibrinogen and TG, TC levels. CRP level Increase was revealed in patients with the genetic predisposition to atherosclerotic-induced cardiovascular diseases, as well as in diabetic patients . Increasing of fibrinogen and CRP levels correlates with carotid intima-media thickness. In women with the genetic predisposition to atherosclerotic-induced cardiovascular diseases CRP level was increased in both reproductive and menopause ages, but In women, who had not genetic predisposition to atherosclerotic-induced cardiovascular diseases, statistically significant increase of CRP level was detected only in menopause age. In women with the genetic predisposition to atherosclerotic-induced cardiovascular diseases the level of blood pressure was increased.

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