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AN ASSOCIATION BETWEEN POLYMORPHISMS RS1333049, RS10757278, HYPERTENSION AND DIABETES IN ALBANIAN PATIENTS

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ABSTRACT

Background. Hypertension and type 2 diabetes mellitus play an important role in the initiation and progression of coronary artery disease. The association between rs1333049/rs10757278 polymorphisms, type 2 diabetes mellitus and hypertension has been investigated by many authors and unfortunately no clear conclusions have been made so far. Shedding light on increasing trends in cardiovascular disease this study was aimed at evaluating the association between such genetic variants, hypertension and type 2 diabetes in Albanian patients. Subjects and methods. This was a case-control study involving 177 patients admitted at the cardiology department at Hygeia Hospital during 2015-2016 in Tirana, Albania. Patient characteristics, including clinical information regarding presence of hypertension, diabetes mellitus and other important medical history data were recorded. With regards to hypertension and diabetes, patients were divided into two groups; Non-diabetic/diabetic (Group 1) among which non-diabetic patients were designated as controls whereas diabetic designated as cases, and non-hypertensive/hypertensive (Group 2) among which non-hypertensive patients were designated as controls whereas hypertensive patients as cases. Further evaluation was performed with respect to rs1333049 and rs10757278 polymorphisms and their association with disease status. Patient genotypes were determined by allele specific polymerase chain reaction (ASPCR). Allelic and genotype frequencies were determined and tested against Hardy-Weinberg equilibrium. Odds ratio (ORs) and 95% CI were analyzed by logistic regression considering statistical significance as $p < 0.05$. Results. Despite the fact that recessive and log additive genetic models could be proposed as potential candidates to describe the association, our data did not show a statistical significance between rs1333049/rs10757278 polymorphisms and development of type 2 diabetes and hypertension. Conclusion. Our results, similar to previous studies involving individuals of European origin, provide evidence indicating lack of association of rs1333049/rs10757278 polymorphism with type 2 diabetes and hypertension in Albanian patients. This finding is somewhat controversial due to the fact that CDKN2A/B gene, upon which both polymorphisms are thought to extend their effect, has been shown to be involved with the onset of type 2 diabetes and potentially hypertension.

Key words: Hypertension, type 2 diabetes, rs1333049, rs10757278