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P283. An analysis of the relationship between the polymorphism of certain genes in candidates for cognitive impairments against cognitive functions in female white-collar workers

J Bartosiewicz (PL) [1], I Bojar (PL) [2], D Raczkiewicz (PL) [3]

CONTEXT:
The epidemiological research shows that the female sex is an independent risk factor and women are more prone to suffer from cognitive disorders, both mild and dementia, caused by Alzheimer's disease.Progress in molecular biology has led to discovery of genes and related biochemical pathways increasing the risk of certain conditions leading to dementia.The presence of estrogen receptors in processes of thinking and memorizing the brain's resources suggests that they affect the cognitive functions. The gene polymorphism for APOE is the only factor causing the sporadic Alzheimer's disease, which is why it is often mentioned while discussing the genetic determination of other cognitive disorders, including those of mild severity.
OBJECTIVE:
The aim of this study was to assess correlation between the apolipoprotein E gene polymorphism (APOE) and estrogen receptor ? (ER?) and cognitive functions in women.
METHODS:
The computerized battery of the Central Nervous System Vital Signs test was used to diagnose cognitive functions. Authors used genotyping based on detecting differences in the sequences of nucleotides of the APOE allele genes, as well as estrogen receptors or DBH (single nucleotide polymorphism, SNP). For both the polymerase chain reaction (T-ARMS PCR) and multiplex PCR (T-ARMS PCR) the primers for alleles were used.
PATIENTS:
A group of 300 women was recruited to the study. The inclusion criteria were: age (45-60) and intellectual work
MAIN OUTCOME MEASURES:
prevalence of PvuII and XbaI ER? polymorphisms and APOE gene polimorphism, cognitive functions
RESULTS:
No correlation was found between the cognitive functions and presence of genotypes ?2/?3 and ?3/?3 APOE polymorphism. Analyzing the relation between XbaI polymorphism and ER? PvuII an cognitive functions only the correlation between reaction time and presence of both types of estrogen ? receptor polymorphism was noticed. Best grades for reaction time were reported in women with AA genotypes and TT, lower grades were given for women with AG genotypes and TC, while the lowest grades for this cognitive function were received by women with GG genotypes and CC.
CONCLUSIONS:

Due to the huge discrepancies between authors regarding the influence of estradiol concentration and its expression in the central nervous system, as well as the ER ? Xba1 and PvuII genes and APOE gene polymorphism over cognitive functions, there is a need for further research in the subject.

[1] Warsaw Medical University, Warsaw, [2] Department of Women's Health, Institute of Rural Health in Lublin, Poland., [3] Dorota Raczkiewicz – Institute of Statistics and Demography, Warsaw School of Economics, Poland.