

## Influence of Apolipoprotein E Gene Polymorphism on the Risk for Breast Cancer

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**ABSTRACT** Apolipoprotein E (APO E) is a polymorphic gene involved in lipid metabolism with three common alleles  $\epsilon 2$ ,  $\epsilon 3$  and  $\epsilon 4$ . The  $\epsilon 4$  allele has been associated with elevated levels of cholesterol as well as greater risk for coronary heart disease and Alzheimer's disease. In the present study 110 cases of breast cancer and control were studied for APOE genotype distribution using PCR-RFLP (Polymerase chain reaction-Restriction fragment length polymorphism) technique. Significant association of APOE 3/4 with breast cancer (17.3%) was observed. Higher frequency of Breast cancer patients with steroid hormone receptor positive status (18%) were found to be of 3/4 genotype. The elevation in 3/4 genotype frequencies was also found in premenopausal group (21.6%) and in patients with advanced tumor (77.7%). Body mass index (BMI) and familial incidence did not show association with APOE genotype. The results suggest the influence of APOE genotype on development of breast cancer.