Kaustab Mukherjee et al., J Cancer Sci Ther 2016, 8:9(Suppl)
http://dx.doi.org/10.4172/1948-5956.C1.084

Association of proline allele at codon 72 of TP53 gene with triple negative breast cancer (TNBC) in females from North Eastern Region, India

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The term triple negative breast cancer (TNBC) denotes those tumors which fail to express estrogen receptor (ER), progesterone receptor (PR) and human epidermal receptor (Her2) by immunohistochemical analysis and molecular as well as epidemiological studies have shown that TNBC exhibit rapid rate of cancer progression, high rate of local growth, metastasis and moreover resistant to conventional anti-neoplastic therapies. Studies revealed TNBC as a heterogeneous disease with a distinct molecular subtype in respect to the structural and expressional profiling of genes. Till date, a very little data are available from India describing the epidemiological and genetic status of TNBC. The aim of the present study was to find out the association of TP53 gene codon 72 polymorphism with the risk of TNBC in females from North Eastern region (N.E.R), India. We performed a case-control study comprising of 94 immunohistochemically confirmed TNBC cases and age, sex and ethnicity matched 205 healthy community controls. Genotyping of TP53 codon 72 polymorphism was carried out by PCR-RFLP methods. To find out the association of TP53 gene codon 72 polymorphisms with the risk of TNBC, both univariate and age adjusted multivariate logistic regression analysis was performed. Present study revealed that proline allele at codon 72 of TP53 gene is significantly associated with TNBC. Moreover, stratified logistic regression analysis based on menopausal status showed that proline allele at codon 72 of TP53 gene is more significantly associated with TNBC in young (premenopausal) females in comparison to the postmenopausal females in N.E.R, India.

Biography

Kaustab Mukherjee has completed his MSc in Zoology, Specialized in Molecular Endocrinology and Mammalian Reproductive Physiology from Banaras Hindu University (BHU) and currently pursuing his PhD. He is currently working as a Scientist "C" in the project entitled "DBT animal house facility for North East India" in Regional Medical Research Centre Dibrugarh, Indian Council of Medical Research, India.

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