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Association of Xeroderma pigmentosum Group D Gene Polymorphism with Colorectal Cancer Risk in Kashmiri Population

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Abstract : The Xeroderma pigmentosum group D gene (XPD) plays a key role in nucleotide excision repair (NER) pathway of the damaged DNA. Genetic polymorphisms in the coding region of the XPD gene may alter DNA repair capacity of the protein and hence can modulate the risk of colorectal cancer (CRC) risk. The aim of the study was to determine the genetic association of XPD Lys751Gln polymorphism with the risk of colorectal cancer (CRC) development. 120 CRC patients and 160 normal controls were assessed for genotype frequencies of XPD Lys751Gln polymorphism using PCR-RFLP technique. We observed a significant association ($p < 0.05$) between the XPD Lys751Gln polymorphism and the risk of developing CRC ($p < 0.05$). Additionally, Gln/Gln genotype of the XPD gene doubled the risk for the development of CRC [$p < 0.05$; OR=2.25 95% CI (1.07-4.7)]. Our results suggest that there is a significant association between the XPD Lys751Gln polymorphism and the risk of CRC.

Keywords : colorectal cancer, polymorphism, RFLP, DNA Repair, NER, XPD
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