POLYMORPHISMS IN NUCLEOTIDE EXCISION REPAIR GENES MODIFY THE RISK OF CUTANEOUS MELANOMA

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Nucleotide excision repair (NER) constitutes one of the DNA repair pathways involved with repair of DNA lesions caused by ultraviolet light (UV) exposure, a causative agent of skin cancers, including melanoma. The aim of this work was verify whether polymorphisms in genes involved in NER could modify the susceptibility to melanoma development. A case-control study was designed to assess the frequency of known polymorphisms of *XPA*, *XPG*, *XPC*, *ERCC1* by PCR-RFLP. Here we report on the results obtained from the analysis of 177 melanoma cases and 165 controls. Increased risk for melanoma was estimated in patients whose *XPC* genotype was homozygous for the presence of (a) poly-AT region in intron 9 (odds ratio [OR] 3,06; 95% interval confidence [95%IC] 1,59-5,86); (b) A/A in splicing site of intron 11 (OR 3,0; IC 95% 1,55-5,78); and (c) Gln/Gln 939 codon (OR 2,83; IC 95% 1,44-5,55). Analysis of these three polymorphisms in XPC also showed a dependent inheritance pattern, suggesting strong linkage disequilibrium. The genotype His/His in codon 1104 of XPG showed a protective effect (OR 0,39; IC 95% 0,16-0,96). No association was found regarding the other polymorphisms (-4 G/A XPA; Asn118Asn ERCC1). Thus polymorphisms in selected NER genes associate with melanomagenesis.

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