

Genetic polymorphism in p53 codon 72 and skin cancer in southwestern Taiwan

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摘要

Abstract

The Pro/Pro polymorphism of p53 codon 72 has been reported to be related to bladder and lung cancer, but its relationship with skin cancer is unclear. We assessed the hypothesis that there is a relationship between the p53 codon 72, Pro/Pro polymorphism, cumulative arsenic exposure, and the risk of skin cancer in a hospital-based case-control study in southwestern Taiwan. From 1996 to 1999, 93 newly-diagnosed skin cancer patients at the National Cheng-Kung University (NCKU) Hospital and 71 community controls matched on residence were recruited in southwestern Taiwan. The genotype of p53 codon 72 (Arg/Arg, Arg/Pro, or Pro/Pro) was determined for all subjects by polymerase chain reaction-restricted fragment length polymorphism (PCR-RFLP). A questionnaire was administered to each subject for collection of demographic information, personal habits, disease history, diet information, and other relevant questions. The Pro/Pro (homozygous) genotype was more frequent in skin cancer patients (cases, 20%; controls, 12%; $P = 0.37$). Subjects with the susceptible genotype Pro/Pro and heterozygous (intermediate) genotype Pro/Arg had 2.18 and 0.99 times risk of skin cancer than the wild type Arg/Arg (95% confidence interval, 0.74-4.38; 95% confidence interval, 0.44-2.21), respectively. Compared with subjects with $18.5 < \text{BMI} < 23$, subjects with $\text{BMI} > 18.5$ had 5.78 times risk of skin cancer (95% confidence interval, 1.06 to 31.36) after adjusting for other risk factors. There was no interaction between BMI and genotype, but the sample size was small. The risk of skin cancer did not significantly vary by tumor cell-type. The risk of skin cancer is increased in individuals with the Pro/Pro genotype. Larger, confirmatory studies are needed to clarify the role of constitutional polymorphisms in p53 and skin cancer risk.