

Allelic frequencies of p53 codon 72 polymorphism and human papillomavirus-mediated cervical cancer In Papua New Guinean women

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Publication Type: Journal Article

Keywords: p53 Codon 72 Polymorphism; Cervical Cancer; Human Papillomavirus.

From: Pacific Journal of Medical Sciences 2015; 15(1):3-14

Country Papua New Guinea

Language:English

Abstract: Cervical cancer is regarded as a sexually transmitted disease caused by the human papilloma virus (HPV) detected in up to 80 per cent of the cancer biopsies. Genetic susceptibility of a p53 allelic variant has been postulated to play a vital role in carcinogenesis. This study was aimed at determining the allelic frequencies of p53 codon 72 polymorphism in Papua New Guinean women and also assessing the presence of HPV in cervical cancer biopsies. Peripheral blood (3-5 mL) was collected from 53 healthy females of reproductive age (19-37 years) with no known past and current history of HPV infections. Sixty-two cervical biopsies along with cervical swaps were obtained from patients (19-54 years) with clinical symptoms and histopathological confirmation of cervical cancer. DNA was extracted from the peripheral blood samples and cervical samples. Exon 4 was amplified with PCR and further genotypic analyses performed by Restriction fragment length polymorphism (RFLP) and single-stranded conformational polymorphism (SSCP). Of the 53 normal samples analyzed, 3.8 % (2/53) were Arginine homozygous, 58.5 % were Proline homozygous and 37.7 % were heterozygous. For the cancer samples, 14.5 % (9/62) were Arginine homozygous, 54.8 % were Proline homozygous and 30.7% were heterozygous. HPV genome was detected in 83.9 % (52/62) of the cervical cancer samples. The genotypic trend and allelic frequencies were consistent with literature.