Title: Investigation of p53 codon72 polymorphism in oral squamous cell carcinoma (SCC) specimens and normal population by PCR

Authors: Deyhimi P. Associate Professor*, Nikbakht Dastjerd M. Assistant Professor**, Morsali F. Dentist, Kazemi Sh. Dentist

Address: Department of Oral Anatomy, School of Dentistry, Isfahan University of Medical Sciences

Background and Aim: A single nucleotide polymorphism at codon 72 of the p53 gene alters the p53 protein structure and affects its activity. This polymorphism depends on geographic regions and race. Also its association with some cancers has been reported. The aim of this study was to investigate this polymorphism in well differentiated oral SCC and normal population in the city of Isfahan.

Materials and Methods: In this case-control study, 20 paraffin blocks of non metastatic and well differentiated oral SCC were selected from archived oral pathology department of dental school between 2001 and 2005. 20 whole blood samples from normal people were considered as control group. After DNA extraction, p53 codon 72 polymorphism was determined by polymerase chain reaction (PCR) technique using specific primers of Arg and Pro and agarose gel electrophoresis. Data were analyzed by Fisher's exact test with \( p<0.05 \) as the level of significance.

Results: The prevalence of Arg/Arg, Arg/Pro and Pro/Pro genotypes in case group were 45%, 45% and 10% respectively compared to 45%, 50% and 5% in controls. There was no statistical significant difference in p53 codon 72 genotypes distribution between case and control groups.

Conclusion: Based on the results of this study, p53 polymorphism could not be considered as a genetic predisposing factor for oral SCC development in Isfahan.

Key Words: Squamous cell carcinoma; Mouth neoplasm; Codon; Genotype; Exon; Polymorphism; p53; Polymerase chain reaction