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ASSOCIATION OF VEGF GENE AS PROGNOSTIC MARKER IN SUBJECTS WITH ORAL SUBMUCOUS FIBROSIS (OSMF) OF NORTH KARNATAKA POPULATION

By

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ABSTRACT

BACKGROUND AND OBJECTIVES: Oral cancer imposes a considerable problem worldwide being a highly lethal and disfiguring disease. Various studies have shown the association of VEGF -460C/T polymorphism in Oral cancer, Diabetic retinopathy Breast Cancer, Prostate Cancer, but very few studies are known to validate the association of the VEGF gene with potentially premalignant conditions like Oral submucous fibrosis (OSMF). An estimate from 1996 indicated that globally, about 2.5 million people have OSMF, but studies have found that over 5 million people are affected in India alone (0.5% of the Indian population). It is also estimated that up to 20% of the world's population use betel nut in some form, so the incidence of OSMF is likely to be much higher than current estimates suggest, and it is regarded as a public health issue in India. Keeping in view the malignant transformation rate of OSMF being 7-30%, this study was taken up with an intention to study the possible role of VEGF gene as a prognostic marker and to predict the outcome of the disease.

METHODOLOGY: The sample size comprised of 30 patients with Oral submucous fibrosis and 20 controls free from habit and free from the lesions. A detailed history of the subjects was recorded following which clinical examination and histopathological confirmation was done. Blood sample was drawn from all the subjects participating in the study. Genomic DNA extraction and PCR amplification were done. The polymorphism was detected by polymerase chain reaction-based restriction analysis.

RESULTS: In this present study males 28(93.33%) had a higher preponderance than females 2(6.67%). 64% of the population in the study were in the age group of 21-40yrs suggesting that OSMF is more commonly seen in this age group. Predominantly in this study around 14% of the cases were below 20yrs of age.

CC genotype was seen in 76.67% of the cases and 95% of the controls, 6.67 % of the cases and 5% of the controls show CT polymorphism, 16.67% of the cases and 0% controls show TT polymorphism. Even though p value >0.05 in the present study each findings are considered statistically significant, considering 10% level of significance. The frequency of the ''T'' allele in the patient group (20%) was greater than that in the control group (2.5%). 20% of OSMF cases showing T allele in the current sample is again a statistically significant finding. However, there was no significant correlation between the association of habits, frequency of habits, duration of quid placement, site of quid placement and style of chewing with the nature of polymorphism.

CONCLUSION: Nonetheless further research is required to understand the possible role of VEGF 460C/T in malignant transformation of OSMF. The studies in this aspect could be designed with a larger sample size and also other associated habits like smoking and alcohol can be considered. However in this present study we conclude that VEGF 460C/T has the potential to become a prognostic marker in predicting the outcome of the disease.

KEY WORDS: Oral cancer, VEGF, Oral submucous fibrosis, Polymorphism