

# **Study of effect of Curcumin in the treatment of leucoplakia.**

**Prof.(Dr.) Desai N.S.  
D Y Patil University, Navi Mumbai**

## **Introduction:**

The word leukoplakia means "white patch", and is derived from the Greek words. Oral leukoplakia is commonly seen in those who smoke, chew tobacco is also associated with this type of lesion. Leukoplakia is a premalignant lesion, and development of cancer can be noticed from the lesion as compared other healthy surrounding area. The chance of transformation into oral squamous cell carcinoma (OSCC, a type of oral cancer) varies from upto 20%, and this may take place from 1 to 30 years. The vast majority of oral leukoplakias will not turn malignant, however some subtypes hold greater risk than others. No interventions have been proven to reduce the risk of cancer developing in an area of leukoplakia, but people are generally advised to stop smoking and limit alcohol consumption to reduce their risk. Sometimes the white patch will shrink and eventually disappear after stopping smoking, but this may take up to a year. In many cases, areas of leukoplakia will slowly expand, become more white and thicken if smoking is not stopped.

Leukoplakia could be classified as mucosal disease, and also as a premalignant condition. Although the white color in leukoplakia is a result of hyperkeratosis or acanthosis similarly appearing white lesions that are caused by reactive keratosis smoker's keratosis or frictional keratoses .

It has been found that there is no effective treatment for leukoplakia have been shown to be effective in preventing malignant transformation. Some treatments may lead to healing of leukoplakia, but do not prevent relapse of the lesion or malignant change. Regardless of the treatment used, a diagnosis of leukoplakia almost always leads to a recommendation that

possible causative factors such as smoking and alcohol consumption be stopped, and also involves long term review of the lesion, to detect any malignant change early and thereby improve the prognosis significantly.

Curcumin is the principal curcuminoid of the popular spice turmeric, of family *Zingiberaceae*.. The curcuminoids are natural phenols that are responsible for the yellow color of turmeric. Curcumin can exist in several tautomeric forms, including a 1,3-diketo form and two equivalent enol forms. The enol form is more energetically stable in the solid phase and in solution.

Curcumin is a pleiotropic molecule possibly capable of interacting with molecular targets involved in inflammation. In vitro, curcumin modulates the inflammatory response by down-regulating the activity of cyclooxygenase-2, lipoxygenase, and inducible nitric oxide synthase enzymes; and inhibits several other enzymes involved in inflammation mechanisms. Clinical trials in humans are studying the effect of curcumin on various diseases, including multiple myeloma, pancreatic cancer, myelodysplastic syndromes, colon cancer, psoriasis, arthritis, major depressive disorder and Alzheimer's disease.

Considering the importance of curcumin and its protective properties, it warranted study against certain untreatable conditions like leukoplakia which leads to cancer was studied.

### **Material and Methods:**

1. Curcumin: 100mg/lowzents were obtained from M/s Gel Nova, Navi Mumbai as complementary
2. The subjects were screened in a medical checkup camp conducted for the NMMT bus and conductor drivers of Navi Mumbai.
3. A total of 900 drivers and conductors were screened.

## Observations:

A oral health checkup camp for bus drivers and conductors was carried out at Turbhe dept, Navi Mumbai. A total of 900 individuals were screened for oral health, diabetics, high blood pressure and hearing loss.

Data was collected for the subjects who were habituated for chewing tobacco and smoking. It was observed that 22 subjects showed sever symptoms of leucoplakia.

All those observed with leucoplakia were educated for the ill effects of tobacco and smoking on their health and were advised to chew these curcumin lowzens THREE times a day for 30 days as a preventive treatment.

The follwup of these leukoplakia subjects was taken two times in a month and were advised to maintain good oral health.

Fig.1. Some cases of leucoplakia.



Fig.2. After 30 days of fallow up who consumed curcumin lowzens.



↑ Complete recovery from leukoplakia after 30 days..

## **Conclusions:**

**It was observed that out of 22 subjects educated and given preventative medication showed significant improvement. Four subjects showed complete recovery who stopped chewing the tobacco while others showed variations in recovery period. While to prove curative property of curcumin further more studies need to be carried to understand the mode of action.**

## **References;**