Original Article

Oral Leukoplakia in Tobacco Consumers among Bihar Population

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Abstract

Background: Oral leukoplakia is a potentially malignant disorder affecting the oral mucosa. **Objectives:** The objectives of this study were to study the prevalence of oral leukoplakia in tobacco consumers among Bihar population. **Materials and Methods:** A total of 200 subjects consisting 130 males 70 females were selected in department of Oral Medicine and Radiology, Patna Dental College and Hospital. The subjects were divided into two groups. The first group was control group with subjects not having tobacco chewing habit consisting of 104 subjects including 73 males and 31 females. Another group included subjects having tobacco chewing habit consisting of 96 subjects, out of which 70 were males and 26 were females. **Results:** The prevalence of oral leukoplakia was found to be 23.5% among total number of subjects and 37.5% among tobacco consumers. Males were more affected than females. The maximum number of cases were reported in age group of 41–50 years. **Conclusion:** Statistically significant correlation between tobacco consumption and the presence of oral leukoplakia is revealed.

Keywords: Oral leukoplakia, Potentially malignant, Tobacco consumers.

Introduction

Oral leukoplakia is potentially malignant disorder affecting the oral mucosa mainly floor of mouth, tongue, and lips. It is defined as "essentially an oral mucosa white lesion that cannot be considered as any other definable lesion." Etiology of oral leukoplakia is multifactorial and many causes are idiopathic.[1] Most common risk factor is the use of tobacco in either smoke or smokeless form.[2] Smoked form includes cigar, cigarette, beedi, and pipe. Smokeless form includes gutka, zarda, snuff, paan, mawa mainpuri tobacco, khaini, and gudakhu. Other synergistic risk factors include alcohol consumption, chronic irritation, fungal infection such as candidiasis,[3] combined micronutrient deficiency, viral infections, hormonal disturbances, and UV exposure. Leukoplakia due to reverse smoking (smoking from burning end) has a 14-fold increase in the risk of malignant transformation compared to leukoplakia due to tobacco used in other forms.[4,5]

Materials And Methods

A list of 200 subjects was obtained from department of Oral Medicine and Radiology, Patna Dental College and Hospital, out of which 130 were male and 70 were female. The subjects were divided into two groups after obtaining their written informed consent. The first group was control group with subjects not having tobacco chewing habit consisting of 104 subjects including 73 males and 31 females. Another group included subjects having tobacco chewing habit consisting of 96 subjects out of which 70 were male and 26 were female. The subjects in the study group belonged to age between 20 and 65 years. All subjects were examined for the presence of oral leukoplakia. The diagnosis was made on the basis of history of tobacco use and clinical examination. Biopsy was mandatory for the diagnosis and was confirmed by histopathological examination.

Results

The control group consisted of 104 subjects among which only 11 of them were seen with leukoplakia (Table 1).

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Discussion

Given the etiology of leukoplakia, many authors have signified the synergistic effect of tobacco and alcohol.[6-8] The most important factor is the time of the impact of these factors.[7-9] In our study, we have observed high frequency of leukoplakia in middle age group, consisting of patients aged 31–50 years with a significant predominance of men. Mostly higher incidence of leukoplakia in men aged 31–50 years has also appeared in the work of some authors.[8] Although, some investigators have shown that the incidence of leukoplakia in women and men is equal[10] or even higher in women.[11] According to Wang *et al*., in a retrospective study including 875 patients from a Chinese population, oral leukoplakia was found to be more in women and the malignant transformation rate in women (14.4%) was higher than men (9.4%).[12] In our retrospective study, oral leukoplakia was diagnosed slightly more often in males. In another retrospective research conducted by Rubert *et al*., in group of 412 patients diagnosed with oral leukoplakia, 281 females were affected over 131 males.[13] In that research, most patients (53.2%) were also non-smokers. In 81.6% of cases, homogenous leukoplakia was diagnosed. However, the authors observed an interesting association between patients with no history of cigarette smoking and presence of clinically non-homogenous form of oral leukoplakia. In analysis of the data from our research, we noted a strong relationship between the occurrence of oral leukoplakia and tobacco consumption and the most commonly diagnosed form of leukoplakia was the homogenous form. Fact to be noted in our research is that only some % of women and some % of men who were diagnosed with leukoplakia consciously reported the problem to the dentist, while, in remaining patients, leukoplakia was detected accidently. Tobacco consumer consisted of majority in both male and female groups. Tobacco use is an important factor in the pathogenesis of leukoplakia as many researchers have indicated in their studies.[8,14]

Table 1 shows that the prevalence of leukoplakia is 10.5% in control group. The group of tobacco chewers consisted of 96 subjects among which 70 were male and 26 were female, out of which 36 were seen with oral leukoplakia (Table 2).

The graph shows that maximum number of cases of leukoplakia is seen in age group of 41–50 years followed by 31–40 years. Minimum number of cases were seen in age group of 20–30 years (Tables 3 and 4).

Conclusion

Our study revealed that there is a statistically significant correlation between tobacco consumption and the presence of oral leukoplakia among the population of Bihar. It is worth noting that dentist is capable of early diagnosis and

Table 1: Prevalence of leukoplakia in control group

Age	Number of Patients	Prevalence (%)
20–30 years	0	Nil
31–40 years	5	4.8
41–50 years	4	3.8
51–65 years	2	1.9
Total	11	10.5

Table 2: Prevalence of leukoplakia in tobacco chewers

Age	Number of Patients		Prevalence (%)
20–30 years	1		1.04
31–40 years	14		14.58
41–50 years	16		16.66
51–65 years	5		5.20
Total	36	Age group	37.5

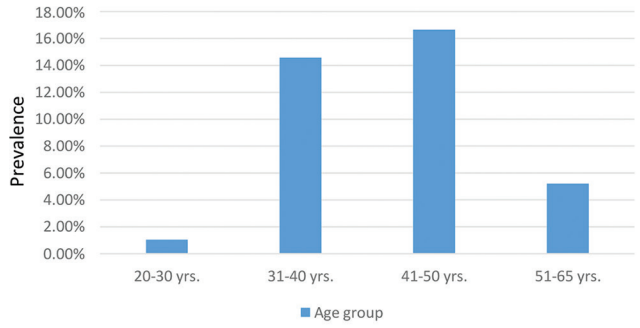
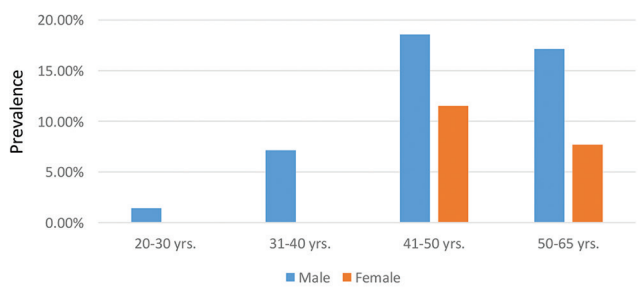


Table 3: Prevalence of oral leukoplakia among male tobacco chewers

Age	Number of Patient	Prevalence (%)
20–30 years	1	1.42
31–40 years	5	7.14
41–50 years	13	18.57
51–65 years	12	17.14
Total	31	44.2

Table 4: Prevalence of oral leukoplakia among female tobacco chewers

Age	Number of patient	Prevalence (%)
20–30 years	0	Nil
31–40 years	0	Nil
41–50 years	3	11.53
51–65 years	2	7.69
Total	5	19.2



implementation of appropriate treatment of leukoplakia and most often, crucial elimination of main etiological factor, which is tobacco consumption through necessary public health programs.

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