

Original Research

Assessment of serum lipid profile in oral leukoplakia patients: A case control study

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ABSTRACT:

Background: The most common oral precancerous lesions are oral leukoplakia (OLP), oral submucous fibrosis (OSMF), and oral erythroplakia. Hence; under the light of above mentioned data, the present study was planned for assessing the serum lipid profile in OLP patients. **Materials & methods:** A total of 20 OLP patients and 20 healthy controls were enrolled in the present study. Complete demographic and clinical details of all the patients were obtained. A self-framed questionnaire was made for assessing the detailed past medical history and habit history of all the patients. Blood samples were obtained from all the subjects and were sent to laboratory for assessment of serum lipid profile. All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software. **Results:** Significant results were obtained while comparing the mean lipid profile among the patients of the OLP group and control group. **Conclusion:** Alteration in serum lipid profile does occur in OLP patients.

Key words: Lipid profile, Oral leukoplakia

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INTRODUCTION

Cancer is the second most common cause of death after heart diseases in developed countries, and the third leading cause of mortality following heart and diarrheal diseases in developing countries.¹ Oral squamous cell carcinoma (OSCC) comprises 92–95% of all oral cancers.² It is noteworthy that many oral squamous cell carcinomas develop from potentially malignant disorders (PMDs).^{1,3}

The most common oral precancerous lesions are oral leukoplakia (OLP), oral submucous fibrosis (OSMF), and oral erythroplakia. Actinic cheilitis, some miscellaneous inherited diseases such as xeroderma pigmentosum and Fanconi's anemia, and immunodeficiency are another potentially malignant disorders for oral carcinoma as well as these three diseases. In recent years, emphasis has been placed on detecting molecular markers from body fluid, such as saliva, urine and others, for detecting cancer, predicting prognosis, and monitoring disease progression. The idea of screening and following patients with malignancy by blood-based tests is appealing from several

points of view including its ease, economic advantage, non-invasiveness, and possibility of repeated sampling.⁴⁻⁶ Hence; under the light of above mentioned data, the present study was planned for assessing the serum lipid profile in OLP patients.

MATERIALS & METHODS

The present study was conducted with the aim of assessing the serum lipid profile in OLP patients. A total of 20 OLP patients and 20 healthy controls were enrolled in the present study. Complete demographic and clinical details of all the patients were obtained. A self-framed questionnaire was made for assessing the detailed past medical history and habit history of all the patients.

Exclusion criteria for the present study included:

- Subjects beyond the age range of 30 to 60 years,
- Diabetic subjects,
- Hypertensive subjects,
- Subjects who refused to give the informed consent

Blood samples were obtained from all the subjects and were sent to laboratory for assessment of serum lipid profile. All the results were recorded in Microsoft excel sheet and were analyzed by SPSS software. Mann-Whitney u test was used for assessment of level of significance. P-value of less than 0.05 was taken as significant.

RESULTS

In the present study, a total of 40 subjects were analyzed. Among these 40 subjects, 20 subjects were of OLP while the remaining 20 subjects were healthy controls. Mean age of the subjects of the OLP group and the healthy control group was 46.5 years and 42.8 years respectively.

Table 1: Age-wise and gender-wise distribution of subjects of OLP group

Age group (years)	Gender			
	Males		Females	
	Number of patients	Percentage	Number of patients	Percentage
Less than 30	3	15	0	0
30 to 40	4	20	2	10
41 to 50	4	20	1	5
51 to 60	4	20	2	10
Total	15	75	5	25

Table 2: Serum lipid profile of patients of OLP group and control group

Serum lipid profile	OLP group	Control group	p- value
TC (mg/dL)	173.2	180.2	0.00 (Significant)
HDL (mg/dL)	46.5	48.6	0.45
TG (mg/dL)	150.7	115.4	0.04 (Significant)
LDL (mg/dL)	97.1	113.5	0.02 (Significant)
VLDL (mg/dL)	30.8	23.5	0.01 (Significant)

In the present study, mean TC levels among the OLP group and the healthy control group was 173.2 and 180.2 mg/dL respectively. Mean HDL levels among the OLP group and the healthy control group was 46.5 and 48.6 mg/dL respectively. Mean TG levels among the OLP group and the healthy control group was 150.7 and 115.4 mg/dL respectively. Mean LDL levels among the OLP group and the healthy control group was 97.1 and 113.5 mg/dL respectively. Significant results were obtained while

comparing the mean lipid profile among the patients of the OLP group and control group.

DISCUSSION

The terminology for oral lesions that may have the potential to progress to malignancy has varied over the years. The term premalignant is commonly used and is widely understood, but it implies that an individual lesion may inevitably become malignant. However, the risk is only statistically increased, and therefore the term potentially malignant, which suggests that the progression to malignancy is only a potential risk, has become more widely accepted. Potentially premalignant is an alternative term that is in keeping with the concept that not all lesions—for example, leukoplakia—will have any potential to progress to malignancy and that the clinician is faced with a mucosal change that is only a potentially premalignant lesion.⁵⁻⁷

Numerous disorders have been associated with an increased risk of squamous cell carcinoma (SCC), including leukoplakia, erythroplakia, oral lichen planus, oral submucous fibrosis, actinic cheilitis, palatal lesions of reverse cigar smoking, discoid lupus erythematosus, and some inherited disorders, such as dyskeratosis congenita and Fanconi anemia.^{8,9}

In the present study, a total of 40 subjects were analyzed. Among these 40 subjects, 20 subjects were of OLP while the remaining 20 subjects were healthy controls. Mean age of the subjects of the OLP group and the healthy control group was 46.5 years and 42.8 years respectively. Byakodi R et al evaluated the alterations in serum lipid profile in premalignant lesions/conditions cases and proven cases of oral cancer with respect to healthy controls. Decrease in serum total cholesterol, triglycerides, HDL, LDL, VLDL in the subjects with premalignant lesions/conditions and oral cancer as compared to the controls was statistically significant. Thus, it was found that there is an inverse relationship between serum lipid levels and premalignant lesions/conditions and oral cancer patients.⁹

In the present study, mean TC levels among the OLP group and the healthy control group was 173.2 and 180.2 mg/dL respectively. Mean HDL levels among the OLP group and the healthy control group was 46.5 and 48.6 mg/dL respectively. Mean TG levels among the OLP group and the healthy control group was 150.7 and 115.4 mg/dL respectively. Mean LDL levels among the OLP group and the healthy control group was 97.1 and 113.5 mg/dL respectively. Significant results were obtained while comparing the mean lipid profile among the patients of the OLP group and control group. Srinivasan S conducted a study to understand the role of these lipids in the oral potentially malignant disorders like Oral Leukoplakia, Oral Submucous fibrosis and also in Oral Squamous Cell Carcinoma. A total number of 75 patients were involved in the study. An inverse relationship exists between serum lipid profile in Oral cancer and Oral Potentially Malignant

disorders. The lower serum lipid status may be a useful indicator for initial changes occurring in neoplastic cells.¹⁰ Sepolia N et al estimated serum lipid profile in patients with premalignant disorders. A total of 25 patients with presence of any form of premalignant pathology, as diagnosed and confirmed with histopathologic examination, were included in the present study. Another 25 age- and gender matched healthy controls who reported for routine medical checkup were also included. Complete demographic details of all the subjects were obtained. Blood samples were obtained from all the subjects and were sent to central laboratory where an auto analyzer was used for evaluation of serum lipid profile. Significant results were obtained while comparing the mean serum lipid profile in between the premalignant group and the control group. Alteration in serum lipid profile in patients with premalignant disorders might have both diagnostic and prognostic implication.¹¹

CONCLUSION

From the above results, it can be concluded that alteration in serum lipid profile do occur in OLP patients. However; further studies are recommended.

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