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Original Research

Estimation of serum lipid profile in patients with premalignant disorders

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ABSTRACT
Background: Many oral squamous cell carcinomas develop from potentially malignant disorders (PMDs). Correct diagnosis and timely treatment of PMDs may help prevent malignant transformation in oral lesions. Hence; under the light of above mentioned data, we planned the present study to estimate serum lipid profile in patients with premalignant disorders. **Materials & method:** 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. **Results:** Significant results were obtained while comparing the mean serum lipid profile in between the premalignant group and the control group in the present study. **Conclusion:** Alteration in serum lipid profile in patients with premalignant disorders might have both diagnostic and prognostic implication.
Key words: Lipid, Oral cancer, Premalignant.

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INTRODUCTION

In a World Health Organization Workshop, held in 2005, the terminology, definitions and classifications of oral lesions with a predisposition to malignant transformation have been discussed and recommended to use the term "potentially malignant disorders" to eliminate terminological confusion.[1- 3]

It has been well-established by researchers that virtually all oral cancers are preceded by visible clinical changes in the oral mucosa usually in the form of white or red patch (two-step process of cancer development). Prevention and early detection of such oral potentially malignant disorders (OPMDs) have the potential of not only decreasing the incidence but also improving the survival of those who develop oral cancer.[4- 6]

Many oral squamous cell carcinomas develop from potentially malignant disorders (PMDs). Correct diagnosis and timely treatment of PMDs may help prevent malignant transformation in oral lesions. Lack of awareness about signs and symptoms of oral PMDs among general population and even physicians are believed to be responsible for the diagnostic delay of these entities.[7, 8]

Hence; under the light of above mentioned data, we planned the present study to estimate serum lipid profile in patients with premalignant disorders.

MATERIALS & METHODS

The present study was conducted in the department of oral pathology and it included assessment and estimation of 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. All the results were recorded in Microsoft excel sheet and were assessed by SPSS software. Chi- square test was used for assessment of level of significance.

RESULTS

In the present study, a total of 25 premalignant patients and 25 healthy controls were analyzed. Mean age of the patients of the premalignant group was 52.5 years, while mean age of the healthy control group was 53.4 years. There were 15 males and 10 females in the premalignant group while there were 14 males and 11 females in the healthy control group.

Mean triglycerides level among the subjects of the premalignant group and healthy control group were found to be 139.2 mg/dl and 201.2 mg/dl. Significant results were obtained while comparing the mean serum lipid profile in between the premalignant group and the control group in the present study.

Table 1: Demographic data

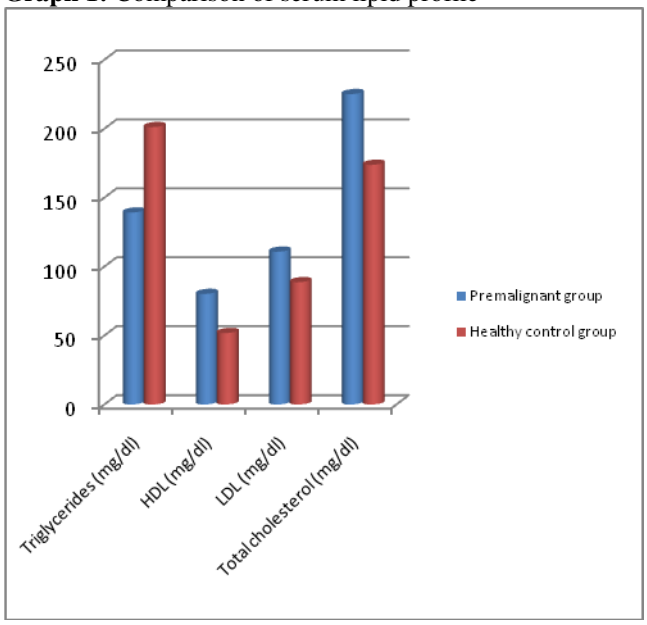
Parameter		Premalignant group	Healthy control group
Age-wise distribution	Less than 30	2	3
	30 to 50	10	8
	More than 50	13	14
Gender-wise distribution	Males	15	14
	Females	10	11

Table 2: Comparison of serum lipid profile

Lipid profile	Premalignant group	Healthy control group	p- value
Triglycerides (mg/dl)	139.2	201.2	0.001 (Significant)
HDL (mg/dl)	80.2	51.8	0.002 (Significant)
LDL (mg/dl)	110.8	88.7	0.001 (Significant)
Total cholesterol (mg/dl)	225.1	173.8	0.001 (Significant)

HDL: High density lipoprotein, LDL: Low density lipoprotein

Graph 1: Comparison of serum lipid profile



DISCUSSION

Oral cancer is one of the most prevalent cancers and is the tenth most common causes of death.[1] Oral squamous cell carcinoma is often preceded by specific potentially malignant disorders; the most common among them are the oral leukoplakia and oral submucous fibrosis (OSMF). Well-known risk factors are consumption of tobacco, areca nut and alcohol, which result in increased free radicals production. Free radicals cause lipid peroxidation, which in turn affects various cellular vital activities including growth, differentiation and gene expression.[8- 10]

In the present study, a total of 25 premalignant patients and 25 healthy controls were analyzed. Mean age of the patients of the premalignant group was 52.5 years, while mean age of the healthy control group was 53.4 years. There were 15 males and 10 females in the premalignant group while there were 14 males and 11 females in the healthy control group. Mehta R et al compare the levels of plasma total cholesterol (TC), low density lipoprotein (LDL), high density lipoprotein (HDL), very low density lipoprotein (VLDL) and triglycerides in patients with oral precancerous lesions/conditions, oral cancer and normal subjects. The study comprised of 60 patients with oral precancerous lesions/conditions, 60 patients with oral cancer and a control group of 60 healthy individuals. The diagnosis of oral precancerous lesions/conditions and oral cancer was confirmed histopathologically. Under aseptic condition 5 ml venous blood of overnight fasting patient was withdrawn from each individual. Serum was separated by centrifugation and plasma levels of TC, LDL, HDL, VLDL and triglycerides were estimated. Descriptive statistical analysis has been carried out in the present study. Statistically significant decrease in levels of plasma TC, LDL, HDL, VLDL and triglycerides was observed in the precancerous and cancerous groups as compared to the control group. On comparison between precancerous and cancerous groups, significant decrease was observed in cancerous group. The change in lipid levels may have an early diagnostic or prognostic role in the oral premalignant lesions/conditions and oral cancer.[11]

Mean triglycerides level among the subjects of the premalignant group and healthy control group were found to be 139.2 mg/dl and 201.2 mg/dl. Significant results were obtained while comparing the mean serum lipid profile in between the premalignant group and the control group in the present study. Garg D et al evaluated the alterations in serum lipid profile in untreated patients of oral submucous fibrosis (OSMF), oral leukoplakia, and oral lichen planus and proven cases of oral cancer with respect to healthy controls. In this case control study, 20 clinically and histopathologically proven patients of oral precancer and oral cancer each were compared with 20 healthy controls. In these groups, serumlipids including: (i) Total cholesterol. (ii) Triglycerides (TGL). (iii) High density lipoprotein cholesterol (HDL), low density lipoprotein cholesterol (LDL) and very low density lipoprotein cholesterol (VLDL) were analyzed. Decrease in plasma total cholesterol, triglycerides, HDL, LDL, VLDL in the subjects with the oral precancer and oral

cancer as compared to the controls was statistically significant. There was also decrease in plasma levels of TGL and VLDL in oral cancer subjects as compared to precancer subjects. Thus, it was found that there is an inverse relationship between plasma lipid levels and patients. Post operative morbidity was increasing along with more operating time and increase in the depth of mandibular third molar impaction.[12]

CONCLUSION

From the above obtained results, the authors conclude that alteration in serum lipid profile in patients with premalignant disorders might have both diagnostic and prognostic implication.

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