ABSTRACT

In 1963, Grinspan found an interesting association of oral lichen planus with diabetes mellitus and hypertension, which he called as Grinspan syndrome. Various studies carried later had ambiguous findings. Oral lichen planus is a common condition, recognized over hundred years from now, with an unclear etiopathogenesis. But, it is premalignant in nature and needs attention at earliest. Thus, a study was conducted to assess the association of oral lichen planus, diabetes mellitus and hypertension. The study comprised of 150 subjects divided in three groups. Group I comprising of 50 confirmed cases of oral lichen planus. Group II comprising of diabetic patient. Group III comprising of hypertensive patient. The objectives were (a) to assess blood sugar level and blood pressure in (50) oral lichen planus, (b) examine (50) diabetic patients for oral lichen planus and hypertension, (c) examine (50) hypertensive patients for oral lichen planus and (d) assess for any correlation among all three conditions (oral lichen planus with diabetes mellitus and hypertension).

Thorough examination of group I for diabetes and hypertension, group II for oral lichen planus and hypertension and group III for oral lichen planus and diabetes was done. The results were analyzed using Chi-square test for correlation. The study showed that presence of only four diabetic patients and eight hypertensive patients among 50 oral lichen planus patients. Only one patient had all the three findings which were statistically insignificant. No oral lichen planus was observed in diabetic or hypertensive cases.

Thus, it is conclusive that diabetes mellitus and hypertension do not play a direct role in the etiology of lichen planus. It could be lichenoid lesions due to the type of the drug and its duration.

Keywords: Oral lichen planus, Diabetes mellitus, Hypertension.

INTRODUCTION

Lichen planus although recognized over hundred years from now, its etiopathogenesis has not been understood in depth and conclusively.

Over these years, many researchers have worked to determine the etiological factors, pathogenesis, characteristics and management of lichen planus.

In 1963, Grinspan et al found an interesting association of oral lichen planus (OLP) with diabetes mellitus (DM) and vascular hypertension (BP) and hence called Grinspan syndrome. Later, many researchers carried out studies to confirm the findings of Grinspan. The results of some of the researchers were consistent with that of Grinspan, while the others did not find the results consistent with that of Grinspan and others.

As the difference in the results persisted about the existence of Grinspan syndrome (OLP, BP and DM) or it was accidental finding, it was proposed to study the corelation among the three conditions in the Indian context.

REVIEW OF LITERATURE

Grinspan in Buenos Aires in 1963, found that, among 61 patients with lichen planus, 23 cases had diabetes, which gave a relative frequency of 38%. However, eight of these 23 patients had a typical oral lichen planus and the limits set for abnormal glucose tolerance test were lower than that set by WHO.

In 1965, a repetitive study by Grupper and Avril confirmed the existence of this symptomatological triad. Therefore, the author defined this complex as ‘Grinspan’s syndrome.’

Howell and Rich in 1973, raised the question of a possible syndrome of oral lichen planus and diabetes mellitus, as they found a prevalence of 13% of patients had diabetes mellitus among the patients of oral lichen planus they studied.

As there were inconsistent findings, it was proposed to take up the study and assess correlation between patients with oral lichen planus, diabetes and hypertension.

AIM

To assess the association of oral lichen planus, diabetes mellitus and hypertension patients.

OBJECTIVES

• To assess blood sugar level and blood pressure in oral lichen planus (50)
• Examine for oral lichen planus and hypertension in (50) diabetic patients
• Examine for oral lichen planus and diabetes in (50) hypertensive patients
• Assess for correlation among all three conditions (oral lichen planus with diabetes mellitus and hypertension).

**MATERIALS AND METHODS**

The 150 cases were selected from the outpatient Department of Oral Medicine and Radiology, KLES Institute of Dental Sciences, Belgaum.

The subjects were divided in three groups. Group I: Patients with clinically and histopathologically confirmed cases were included in the study. Group II: Consisted of diabetic patients confirmed with laboratory investigation (fasting and postprandial blood glucose level). Group III: Consisted of patients confirmed of hypertension. Patients belonging to any age groups, sex and having any type of oral lichen planus were included.

The demographic data of clinically and histopathologically confirmed oral lichen planus was collected. The blood pressure was recorded using the auscultatory method and later the patient’s fasting and postprandial blood was collected from antecubital vein and was sent to laboratory for glucose estimation. Similarly, 50 confirmed cases of diabetes were examined for oral lichen planus and blood pressure was also recorded. Lastly, 50 confirmed cases of hypertension were examined for oral lichen planus and subjected for estimation of blood glucose level. The data was collected and results were statistical analyzed using Chi-square test to see the association among all three variables.

**DISCUSSION**

In group I, 30 (60%) cases ranged from 31 to 70 years, as mentioned by other workers. A total of 19 (38%) cases were below 30 years and only one case was above 70 year. Thirty-two (64%) cases were males and 18 (36%) cases were female (Table 1). McCarthy and Shklar found equal predilection in males and females, other studies have revealed female predominance, although occasional surveys have suggested a male predominance. Our study indicates male predominance, which could be due to poor attendance of the female group to the dental hospital.

Lichen planus was seen at various sites in oral cavity. Shklar and McCarthy found 80% of involvement of buccal mucosa and Shklavouhou reported about 83% involvement of buccal mucosa with buccal mucosa showing higher predominance (Table 2).

Oral lichen planus showed pleomorphism in clinical appearance as it was seen in reticular (38 cases), papular (3 cases), erosive (7 cases) and plaque type (6 cases). (Vide Table 3).

Only four cases had cutaneous involvement, among which two had lesions on the arm and legs, one had involvement of face and neck and other had involvement of chest and back (Table 4).

Currently, etiology of lichen planus is considered multifactorial, including mechanical and electrochemical trauma, infections, allergies, endocrinal disorders, salivary gland disorders, nervousness and heredity. Immunological reactions, psychological strain, overwork, mucosal irritation factors and habits are implicated as predisposing factors.


In our study, only four cases were having diabetes. Christensen et al, Lozada Nur F and Silverman, Nigam PK et al, Borghelli and Holmstrup did

<table>
<thead>
<tr>
<th>Sl no.</th>
<th>Disorder</th>
<th>No. of patients</th>
<th>Males</th>
<th>Females</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Diabetes mellitus</td>
<td>4 (8%)</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Hypertension</td>
<td>8 (16%)</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Diabetes mellitus and hypertension</td>
<td>1 (2%)</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Cutaneous lichen planus</td>
<td>8 (16%)</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>Hemiplegia</td>
<td>1 (2%)</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>Rheumatoid arthritis</td>
<td>1 (2%)</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>Myocardial infarction</td>
<td>1 (2%)</td>
<td>1</td>
<td>0</td>
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</table>
not find any statistical difference in glucose tolerance test in oral lichen planus patients and general population.

Only one subject had oral lichen planus, diabetes mellitus and hypertension (Grinspan’s syndrome). This result is inconsistent with Grinspan’s study (1963) where he found eight cases of typical lichen planus out of 23 cases of diabetes mellitus. The studies have confirmed Grinspan syndrome based on isolated cases or small sample of subjects.

In group III, with 50 cases of hypertension, no subject had oral lichen planus. Only few studies have confirmed association of lichen planus with hypertension. These studies did not consider the iatrogenic effect of various drugs (Barnett,22 Menter MA,23 Holt and Navratnam,24 Downham,25)

Bravard et al.,26 Firth NA and Reade27 did state the lichenoid reactions as finding due to medication for either diabetes or hypertension.

From this study and review literature it is quite agreeable that diabetes mellitus and hypertension do not play a direct role in the etiology of lichen planus. The occurrence of lichen planus like lesions in the oral cavity could be due to the drugs given to the patients suffering from these systemic ailments. Such oral lesions may be also dependent on the type of the drug and its duration.

CONCLUSION

Among the group I, male patients aged 31 to 70 years predominated the study. Cheek mucosa was common site of involvement followed by tongue, gingival lip and palate. Reticular was major type of oral lichen planus. Cutaneous involvement was only with few cases. Diabetes mellitus, hypertension and lichen planus was in only one case. Group II and group III did not show any significant association with lichen planus.

Thus, it can be concluded that oral lichen planus may not be directly associated with diabetes mellitus and hypertension, but could be contributing to lichen planus like lesions in the oral cavity as a result of various medications these patients are on. Further, the presence of these oral lesions in diabetic and hypertensive patients, could be attributed to the fact that these patients also suffer a severe mental stress and lichen planus is also seen, patients with emphasize. Thus, the paper stresses on identifying the offending drugs, warrants close monitoring and substituting them appropriately.

However, further study with large sample size and studying the effect of iatrogenic factor (medications) and the immunological factors (stress) among diabetics and hypertensive, could help confirm the association.

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REFERENCES


