

Periodontal Status of Smoker and Nonsmoker between the Workers at El kubaisa Factory of Cement

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ABSTRACT

Background:The harmful effect of smoking on oral tissues is well reported.The effects of smoking on periodontal health statuses of a group of cement factory workers have been compared with the non smokers.

Methodology: A sample of 175 male subjects were involved 78(44.57%) subject were smokers. Each subject was examined in the medical room in the factory. By using Community Periodontal Index (CPI) score.

Result: The prevalence of periodontal disease among the study subject was 100%. Bleeding and calculus were most frequent observed in the smoker and non smoker workers with statistical difference ($P>0.05$).On the other hand the shallow(74.35%) and deep pocket(23.08%)were observed more in smokers. with significant differences ($P<0.01$).

Conclusions: The maintaining of oral health was neglected by factory workers. Smoking was evidently factor of risk for high levels of periodontal disease. These observation emphasize the need of periodontal treatment in the cement factory workers.

KEYWORDS

Smokers, Community periodontal Index, periodontal health status

المستخلص

المقدمة: الآثار الضارة للتدخين على أنسجة الفم قد لوحظت بشكل جيد.تم مقارنة آثار التدخين على الحالة الصحية للثة لمجموعة من عمال مصنع الأسمنت بين المدخنين و غير المدخنين.

الموادوالعمل: شملت العينة ١٧٥ شخص من الذكور ٧٨ (٤٤,٥٧٪) مدخنين. تم فحص كل شخص في غرفة طبية في المصنع. باستخدام مؤشر مؤشر اللثة المجتمعية.

النتائج: معدل انتشار أمراض اللثة لكل العمال كان ١٠٠٪. وقد لوحظت حالات النزف و التكتلات بنسبة عالية بين المجموعتين وبدون فارق إحصائي ($P>0.05$), ومن ناحية أخرى لوحظ أن الجيوب اللثوية الغير عميقة (٧٤,٣٥٪) والجيب اللثوية العميقة (٢٣,٠٨٪) أكثر في المدخنين. مع وجود فرق احصائي كبير ($P<0.01$).

الاستنتاج: المحافظة على صحة الفم غير معتنى بها من قبل عمال المصنع. التدخين يعتبر بشكل واضح عامل خطر على مستويات عالية من أمراض اللثة. وتؤكد هذه الملاحظة الحاجة الضرورية لمعالجة اللثة عند عمال مصنع الأسمنت.

كلمات مفتاحية: مدخنين، مؤشر اللثة المجتمعية، الحالة الصحية للثة

INTRODUCTION

The smoking and periodontal disease closely related and it is one of the most significant is a factor in the developing most of periodontal disease⁽¹⁾. Smoking of cigarette is a factor of significant risk for disease of periodontal tissues⁽²⁾, that demonstrated by increasing the loss of the attachmen^(3,4,5),developments and progressions of the inflammation of periodontal tissues^(6,7)and increasing the gingival recessions⁽⁸⁾. Several study was indicates that the nicotine which is found in products of tobacco triggers the over production of cytokines inside the body and this is due to lowered of the oxygen level. Cytokines are considered signal chemicals which is involved in the process of the inflammation of periodontal tissues. When the nicotine combined with the bacteria of oral cavity such as P.gingivalis, the effect will be higher level of cytokines, and it will lead to breakdown in the tissue that supporting the teeth⁽⁹⁾. Nicotine is considered the most pharmacologically active compound in tobacco smoker. Cigarette stimulate the sympathetic ganglia to produced neurotransmitter including catecholamine, these affect the alpha-receptor on blood vessels which in turns causes vasoconstriction. The peripheral blood

vessels vasoconstriction that caused by smoking also affect the periodontal tissue⁽¹⁰⁾. In this study ,the CPI index was used to estimate the effect of cigarette on the periodontal health. A prevalence was planned to assess the periodontal status of smoker and non smoker workers of cement factory.

METHOD AND MATERIAL

Cross sectional study was carried out on 175 (97 non smokers and 78 smokers) cement factory workers. Subjects who suffered from systemic disease and who were not willing to participate were excluded from the study. Prior to examination of each subject the workers interview to record information regarding to name, age, area of residency, smoker or no, expose to cement dust or no. Dental examination were carried out in supine position with artificial light in the medical room in the factory. The status of periodontal tissues was assessed by using Community Periodontal Index (CPI) and CPI probe which conform to World Health Organization⁽¹¹⁾ with disposable mouth mirrors were used. CPI was chosen because of simplicity, speed, international uniformity and records the common treatable conditions like periodontal pocket, gingival inflammation and calculus. This is an index records

the worst case. Instruments used were sterilized using gluteraldehyde solution.

Analysis of data

The statistical analysis was conducted by using SPSS version 20 computer (Statistical Package for Social Sciences) in the association with Excel version 5. Pearson's chi-square test was used to examine the differences between the different groups. So for all the test, P value of <0.05 was considered to be statistically

significant. The magnitude of association between dichotomous independent variables (risk factor) and dichotomous outcome (dependent) variables was assessed by Odds ratio (OR). The confidence interval is 95% for OR is a statistical procedure to expect or predict the range expected of the possible values of the sample that calculated estimate of any statistic (like OR) in the population references with 95% confidence.

	Positive	Negative
Positive	A	B
Negative	C	D

$$OR = \frac{A \cdot D}{B \cdot C}$$

RESULTS

A total number of 175 subjects were examined out of which 97(55.43%) were not smokers and 78(44.57%) which are smokers. The periodontal status of all workers illustrated in table (1). It obvious from this table that the shallow pocket among smoker and non smoker were (74.35%, 68%) respectively. The differences between these two groups was statistically not significance $P > 0.05$. Whereas the deep pocket among smoker and non smoker were (23.08%, 1%) respectively. The differences between these two groups was statistically highly significance $P < 0.001$. The percent of sextant effected by periodontal condition health among smoker and non smoker is illustrated in table (2). Which show no significant differences between smoker and non smoker in bleeding and calculus ($P > 0.05$), but very high significant in shallow pocket ($P < 0.001$, OR 17.01, 95% CPI OR 4.81-90.14) and very highly significant in deep pocket ($P < 0.001$, OR 28.8, 95% CPI OR 5.06-287.33).

DISCUSSIONS

In this study an attempt was made to assess the periodontal health status using community periodontal index among the smokers and non smokers workers in EL-Kubaisa cement factory, Anbar governorate, Iraq. A group of the cement factory workers with a sample size of 175 with mean age (25-55 years) about (41.7±8.34) were estimated for the use of tobacco of smoking and in the association with the levels of the destructions of the periodontal tissues. The smokers group were approximately (78,44.57%)

of the total workers which are examined, whereas non smokers group were approximately (97, 55.43%). In current study 0% of the subjects had healthy periodontium. Bleeding and calculus were widespread among smokers and non smokers. In the present study the shallow pockets (4-5mm) among smokers were (76,97.4%) while in non smokers were (67,69.1%) Odd Ratio (OR) (17.01) 95% CPI OR (4.81-90.14). Deep pockets (more than 6mm) among smokers were (18,23.07%) while in non smoker were (1, 1%) OR (28.8) 95% CPI OR (5.06-287.33). The severity of the disease was found to be relatively higher among smokers deep pocket (more than 6mm) was (23.08%). The our findings are approximately agreement with study conducted by Sood et al among the smoker in ceramic factory in Haryana, India. deep pocket (more than 6mm) was (24.7%)⁽¹⁸⁾. Some of studies reported that the smoker people are more susceptible to the advanced and the severe forms of the periodontal disease than the people who are non smokers^(12,15). In a certain study that carried out to the periodontal tissue status among the male who are industrial workers in the Finland, it was found that the smoking of tobacco was the strongest independent factor affecting the status of the periodontal tissues⁽¹⁶⁾. Shizukuishi et al also it was observed in Japanese workers in a factory that the lifestyle which includes the smoking of tobacco and the insufficient of the oral health care have an independent association with the disease of the periodontal tissues⁽¹⁷⁾. This finding support the role of smoking as a risk factor for development and

progression of periodontal disease. This has been reported in the many previous studies^(12,13).

CONCLUSION

The maintaining of oral health was neglected

by factory workers. Smoking was evidently factor of risk for higher levels of the periodontal disease. These observation emphasize that periodontal treatment for these factory workers is needed.

Table(1): Prevalence of the periodontal health status among smokers and non smokers workers

Maximum CPI Score	Smoker n=78		Nonsmoker n=97		P (Chi-Square)
	No.	%	No.	%	
Healthy	0	0.0	0	0.0	*
Bleeding	0	0.0	1	1.0	0.36**
Calculus	2	2.56	29	29.9	<0.0001***
Shallow pocket 4-5 mm	58	74.35	66	68	0.36*
Deep pocket >6 mm	18	23.08	1	1.0	<0.0001***
Total	78	100	97	100	

*cannot calculated **No Significant P>0.05 ***very high Significant P<0.0001 df=1

Table(2): Percent of Sextant affected by periodontal condition among smokers and non smokers workers

CPI	Smoker n=78		Non smoker n=97		P	OR	95% CPI OR
	No.	%	No.	%			
Bleeding or higher	78	100	97	100	*	*	*
Calculus or higher	78	100	96	99	0.36**	*	*
Shallow pocket Or higher	76	97.4	67	69.1	0.001***	17.01	(4.81-90.14)
Deep pocket Or higher	18	23.07	1	1.0	0.001	28.8	(5.06-287.33)

*can not calculated **No Significant P>0.05 ***Very Highly Significant P<0.001 df=1 OR(odd ratio)

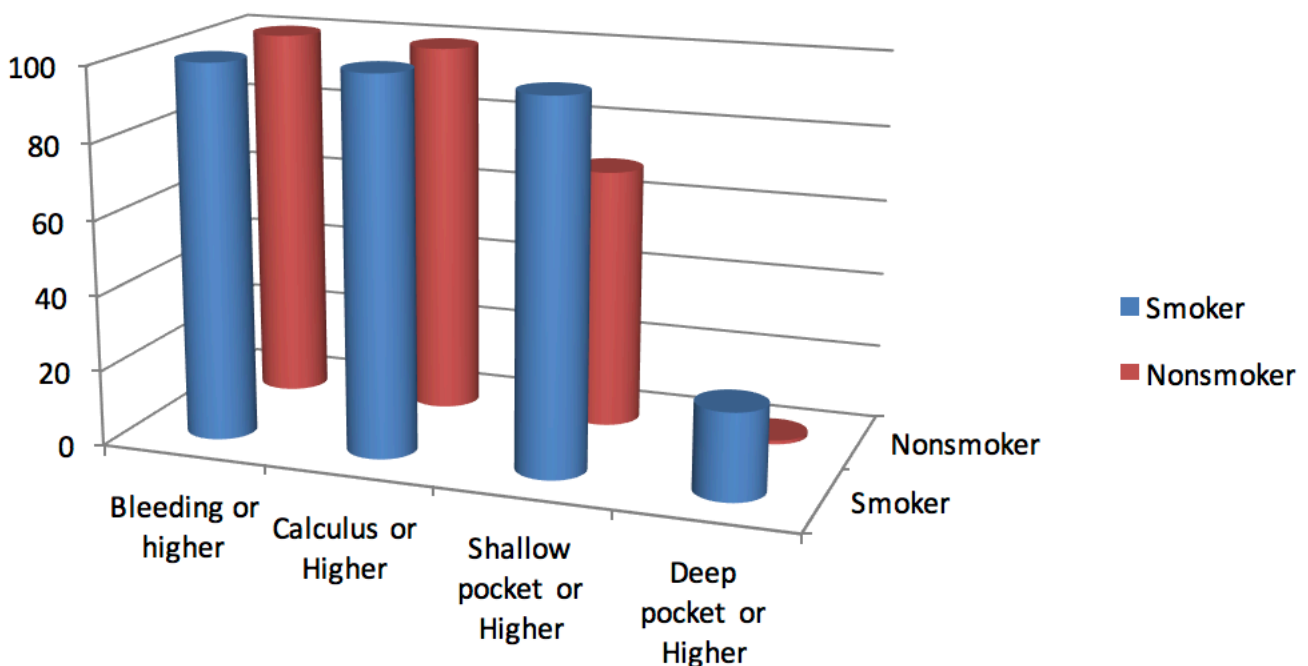


Figure: Percent of Sextant affected by periodontal condition among smokers and non smokers

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Case sheet

Name:
 Age
 Area of residency:
 Medical history : Yes No
 Hypertension
 Diabetic
 Asthma
 Others
 Smoker habit Yes No
 Expose to cement dust Yes No

17/16 11 26/27

CPI

47/46	31	36/37