Assessment of the knowledge, Attitudes and Performance of Dentists about Premalignant Lesions in North West of Iran

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Abstract

Background and Aim: Premalignant lesion is a morphologically changed tissue which has greater risk of malignant transformation in comparison with normal tissue. Oral squamous cell carcinoma is the most common cancer in the head and neck and its early detection and treatment is effective in increasing the survival rate and reducing the mortality rate of suffering patients. As general dentists used to examine the oral cavity continuously, so their knowledge and attitude of premalignant lesions may have a great impact on the early identification and prevention of SCC. The aim of this study is the assessment of the current knowledge, attitudes and performance of dentists about premalignant lesions. Results of this study may be allowed to excel the health education programs. Materials and Methods: In this cross-sectional study, the knowledge, attitude and performance of a total of 100 general dentists who have worked in Tabriz, Iran was checked by a researcher made questionnaire. A questionnaire with a total 20 questions was used. The first part of it included questions about socio-demographic details of participants plus 2 specifically directed questions about the time (years) during which they had practiced as general dentist. Data were analyzed using the SPSS 17. Results: Based on the Pearson analyses, there were significant direct relationship between the knowledge and attitude (p<0.001), knowledge and performance (p=0.02, r=0.243), and attitude and performance (p=0.0001). Conclusion: In this study, most participants had the modest level of knowledge, attitude and performance. But given that the knowledge and attitude scores were less than half of the maximum attainable score, there is some concern about delay in detection and offering inappropriate treatment to suffering patients.

INTRODUCTION

Premalignant lesion is a morphologically changed tissue which has greater risk of malignant transformation in comparison with normal tissue. (Nevilie, B.W., et al., 2009; Cooper, Caroline L., et al., 2013). It has been found that in 20% of cases oral squamous cell carcinoma (OSCC) has arisen or is associated with a precancerous lesion. Leukoplakia, erythroplakia, and erythroleukoplakia are the most common oral lesions. However, the possibility for arising of OSCC without the presence of a precancerous lesion is yet to be identified. (Petersen, Poul Erik, 2009; Warnakulasuriya, S., 2010). OSCC is the most common cancer in the head and neck and its early detection and treatment is effective in increasing the survival rate and reducing the mortality rate of suffering patients. (Villa, A., et al., 2011; Petersen, Poul Erik, et al, 2005) Currently, definitive diagnosis of oral premalignant lesions and grading of dysplasia is performed via histopathological studies, But prediction of transformation to a malignant lesion is not possible with this method yet. (Colella, G., et al., 2008) As general dentists used to examine the oral cavity continuously, so their knowledge and attitude of premalignant lesions may have a great impact on the early identification and prevention of SCC. According to our research, any precise study which had focused on knowledge, attitude and performance of general dentists toward precancerous lesions was not available. Generally, available studies have addressed the oral cancer, where the precancerous lesions with noticed in only 2 or 3 questions of questionnaire. (Kerr, A.R., G.D. Cruz, 2002; Horowitz, A.M., 2001; Kerr, A.R., 2000; Horowitz, A.M., et al., 2011; Horowitz, A.M., et al., 2000)

Therefore, the aim of this study is the assessment of the current knowledge, attitudes and performance of...
dentists about premalignant lesions. Results of this study may be allowed to excel the health education programs.

METHODS AND MATERIALS

In this cross-sectional study, the knowledge, attitude and performance of a total of 100 general dentists who have worked in Tabriz, Iran was checked by a researcher made questionnaire; these samples were randomly recruited from population of general dentists’ list who have worked during 2013 which was obtained from Tabriz medical council.

This study was approved by the Tabriz University of Medical Science Committees for personal data protection in medical research and confirmed to the declaration of Helsinki.

A questionnaire with a total 20 questions was used. The first part of it included questions about socio-demographic details of participants plus 2 specifically directed questions about the time (years) during which they had practiced as general dentist, and the number of retraining courses about premalignant lesions which they had participated, the other 2 parts of questionnaire included: 9 questions about the knowledge, 7 about attitude and final 4 were about performance of general dentists about oral precancerous lesions. The primary draft of questionnaire was made by researcher and then circulated to technical experts, and a biostatistician, then it modified based on their feedbacks of content validity. Validity of the questionnaire was checked and refined by 5 specialists in oral medicine, 1 specialist in maxillofacial pathology and 3 general dentists (all 9 people were Academic members of Tabriz dental faculty of medical science.) The reliability of questionnaire was clarified by the assessment of 10 general dentists' answers to questionnaire (a pilot study were done) with the Cronbach's alpha coefficients of 78%.

In this study the type I errors assumed equal with 0.05 and the type II errors (P value) ≤ 0.05 considered statistically significant. Data were analyzed using the SPSS version 17.0 (SPSS Science, Chicago, IL, USA). The mean and standard deviation of scores based on population answers were reported generally, and then based on different variables. Relative and absolute frequency was reported in the same manner. The baseline characteristics of the study population were compared by the linear regression model.

Results:

In this survey 100 general dentists of Tabriz (41 females and 59 males with average age of 36.34 in the range of 24-60) were participated.

The Average number of retraining courses, they had passed, was 2.08 and the average years of clinical work as general dentist was 10.64± 7.34).

Taking a positive score for each correct answer, the maximum rate for the knowledge, attitude, and performance ( from the maximum scores of 9,7, and 4) , the outcome for knowledge , attitude, and performance of general dentists were 4.3±1.3(rang 1-7), 3.2±1.2 (rang 1-5) and 2.6±1.1 (rang 0-4) respectively.

Based on the regression analyses outcomes about Effects of different variables on the knowledge of general dentists, we have identified that age of participants (p=0.58), their gender (p=0.69), activity duration as a general dentist (p=0.62), and number of retraining courses about premalignant lesions (p=0.72) had not significant effects.

About the attitude, except for dentist age (p=0.38), other variables such as activity duration (p=0.021), number of retraining courses (p=0.01) and the gender (p=0.04) have significant effects. The effect of activity duration (p=0.005) and the retraining courses (p=0.014) show significant effect on the performance of general dentists, but the age (p=0.318) and the gender of dentists (p=0.826) had not significant effects.

The absolute and relative frequency of correct and incorrect answers is presented in Table 1. The highest frequency of correct answers in the knowledge part of questionnaire belonged to “the most common clinical features of leukoplakia” (63%), and the highest frequency of incorrect answers was about “accompanied radiographic view for premalignant lesions” (77%).

“High sensitivity of toluidine blue as a diagnostic method” (74%) and “protection of malignancy by removal of premalignant lesions” (18%) got the highest and the lowest correct answers in the attitude section respectively.

In the performance part, the best performance was about “encouragement of patients to quit smoking and alcohol drinking” 91%) and the lowest performance was about “follow up of known cases of premalignant lesions”.

Based on the Pearson analyses, there were significant direct relationship between the knowledge and attitude (p<0.001, r=0.326), knowledge and performance (p<0.02, r=0.243), and attitude and performance (p<0.0001, r=0.357).

Discussion:

Comprehensive oral cancer examination and assessment of risk associated with it, can lead to early diagnosis and prevention of oral cancer. The main point in this context is not necessarily the diagnosis of oral
cancer but it is essential to concentrate on the detection of lesions with high potential to transform to malignant lesions. (Clovis, J.B., et al., 2002; Syme, S.E., et al., 2001)

Despite the importance of identifying and dealing with precancerous lesions in prevention of oral cancer, most studies about knowledge and practices of general dentists have done generally about oral cancer. In this study, have precancerous lesions are concerned more precisely.

In this study, most participants had the modest level of knowledge, attitude and performance. But given that the knowledge and attitude scores were less than half of the maximum attainable score, there is some concern about delay in detection and offering inappropriate treatment to suffering patients.

**Table 1: Knowledge and Attitude of general dentists toward oral premalignant lesions**

<table>
<thead>
<tr>
<th>Items</th>
<th>Correct answer numbers (%)</th>
<th>Incorrect answer numbers (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questions of knowledge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The most common oral premalignant lesion is Leukoplakia</td>
<td>63 (63%)</td>
<td>37 (37%)</td>
</tr>
<tr>
<td>In most cases, erythroplakia is associated with dysplasia or OSCC</td>
<td>68 (68%)</td>
<td>32 (32%)</td>
</tr>
<tr>
<td>The most common site of premalignant lesions in the mouth, is the floor of the mouth</td>
<td>38 (38%)</td>
<td>62 (62%)</td>
</tr>
<tr>
<td>The malignant transformation is more likely for the lesions on the lateral border of tongue or the floor of the mouth</td>
<td>32 (32%)</td>
<td>68 (68%)</td>
</tr>
<tr>
<td>The incidence of oral premalignant lesions increases with age.</td>
<td>57 (57%)</td>
<td>43 (43%)</td>
</tr>
<tr>
<td>local irritants such as broken sharp cusp or unfitted dentures may causes premalignant lesions in the mouth</td>
<td>39 (39%)</td>
<td>61 (61%)</td>
</tr>
<tr>
<td>Premalignant lesions are always associated with radiographic view</td>
<td>23 (23%)</td>
<td>77 (77%)</td>
</tr>
<tr>
<td>For the definitive diagnosis of premalignant lesions, biopsy is the best method.</td>
<td>52 (52%)</td>
<td>48 (48%)</td>
</tr>
<tr>
<td>The treatment of premalignant lesions depends on its histopathologic features.</td>
<td>55 (55%)</td>
<td>45 (45%)</td>
</tr>
<tr>
<td>Questions of attitude</td>
<td></td>
<td></td>
</tr>
<tr>
<td>For the Mucosal lesion which has not improved after more than 14 days of stimulating factors removal; diagnostic biopsy is necessary.</td>
<td>55 (55%)</td>
<td>45 (45%)</td>
</tr>
<tr>
<td>In the case of precancerous, examination of the head and neck lymph nodes lesions is essential.</td>
<td>33 (33%)</td>
<td>67 (67%)</td>
</tr>
<tr>
<td>Staining with toluidine blue has high sensitivity in the detection of oral cancer and precancerous lesions.</td>
<td>74 (74%)</td>
<td>26 (26%)</td>
</tr>
<tr>
<td>Smoking and alcohol consumption are effective in malignant transformation of the premalignant lesions.</td>
<td>63 (63%)</td>
<td>37 (37%)</td>
</tr>
<tr>
<td>Removal of premalignant lesions such as leukoplakia and erythroplakia eliminates the risk of oral cancer.</td>
<td>18 (18%)</td>
<td>82 (82%)</td>
</tr>
<tr>
<td>With an early detection and appropriate practice, Dentist could prevent the oral cancer.</td>
<td>56 (56%)</td>
<td>44 (44%)</td>
</tr>
<tr>
<td>The follow up sessions for any premalignant lesion are more vital than removal of that.</td>
<td>50 (51%)</td>
<td>48 (49%)</td>
</tr>
<tr>
<td>Questions of performance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the case of detection of premalignant lesions, do you examine the lymph nodes?</td>
<td>76 (76%)</td>
<td>24 (24%)</td>
</tr>
<tr>
<td>Do you encourage your patient to quit the high-risk behaviors such as smoking?</td>
<td>91 (91%)</td>
<td>9 (9%)</td>
</tr>
<tr>
<td>If you see white plaques with or without the red zone during oral examination, would you attempt to get biopsy or refer the patient for biopsy?</td>
<td>55 (55%)</td>
<td>45 (45%)</td>
</tr>
<tr>
<td>Do you follow up the patients who suffer from premalignant lesions such as leukoplakia or erythroplakia?</td>
<td>39 (39%)</td>
<td>61 (61%)</td>
</tr>
</tbody>
</table>

Saghafy and colleagues in a study of dentists’ awareness around oral cancer had found some weak points. In their study (Saghafi, Shadi, et al., 2009), only 25% of the dentists were aware of probable presence of OSCC with erythroplakia and the importance of early diagnosis of this lesion, whereas in our study 68% of dentists were answered this question correctly. The same question was answered correctly by 97% of general dentists in Aghbali and colleagues’ study (Aghbali, A.A., et al., 2011).

Motalleb nezhad and colleagues 17 have studied the knowledge of general dentists about oral cancer examination; participants were asked some questions about the precancerous lesions too. In their study, 51/8 percent of the respondents had known the most common view of precancerous lesions, while 63 percent of general dentists in our study area answered this question correctly. Awareness about Areas of the mouth where the risk of malignant transformation is high, was low similarly in motalleb nezhad (Motallebnejad, M., and M. Hedayati, 2006) and our studies.

The dependency of treatment plan to the histopathologic view of premalignant lesions was enquired in Aghbali (Aghbali, A.A., et al., 2011) and our study in the knowledge part, and was answered correctly by 77.34% and 55% of participants respectively.

The study results showed that most participants know that leukoplakia is the most common clinical features among oral premalignant lesions and in most cases erythroplakia is with dysplasia or OSCC. Nearly half of the respondents were aware of the importance of the biopsy in the definitive diagnosis of premalignant lesions and the power of histopathologic features of the lesion in planning the treatment method. However, the incidence of oral premalignant lesions does not increase with age, more than half of the general practitioners in answer the question in this field incorrectly. (Amagasa, Teruo, et al., 2011; Tanaka, Takuji, et al., 2011)

The most Common site of oral premalignant lesions is the floor of the mouth on the other hand; the risk of
malignant transformation in the floor of the mouth and lateral border tongue is higher. It is known that there is not certain association between chronic stimuli such as a sharp cusp with precancerous lesions. (Queiroz, Salomão Israel Monteiro Lourenço, et al. 2014; Liu, Wei, et al.) Unfortunately, the participants’ knowledge in these areas was lower than what was desired.

Toluidine blue is used with high sensitivity in the localization of malignant transformation and determination of the best place is for obtaining biopsy. (Fuller, Colin, et al. 2010; Gupta, Anurag, et al. 2014) 74 percent of general dentists had correct attitude about this issue. The molecular findings support the carcinogenesis model in which the development of a field with genetically altered cells plays a central role. It’s the corner stone of field cancerization theory which was introduced by Slaughter for first time. Based on this theory the Diagnosis and treatment of epithelial cancers should not only be focused on the tumor but also on the field from which it developed so Surgical excision of lesions was not enough and next checkup according to the likelihood of recurrence is essential. (Vanharanta, Sakari, and Joan Massagué, 2012; Manders, Ernest C., et al., 2011) Results of study show that almost half of participants had proper attitude about importance of follow up visits but sad to say that 82 percent of general dentists had incorrect viewpoint. Another unpleasant result becomes clear in performance question when we found out that just the 39 percent of general dentists were interested to follow the pre malignant lesions in several sessions.

Lack of motivation and unawareness of dentists about their influential role in the early detection of cancerous and pre-cancerous lesions after graduation of general dentists with focus on the weaknesses of this group would be a great help in improving the current situation.

No doubt the more practical aspects of theory courses and retraining education courses about oral cancer and precancerous lesions after graduation of general dentists with focus on the weaknesses of this group would be a great help in improving the current situation.

REFERENCES


