Knowledge and awareness about the association between periodontal disease and systemic diseases among medical practitioners: A questionnaire study

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ABSTRACT

Aim and Objective: The aim of the study was to assess the knowledge and awareness among medical practitioners about the association between periodontal disease and systemic diseases. Methods: A web-based questionnaire comprising 10 questions was formulated and circulated among 100 medical practitioners. The responses were then subjected to statistical analysis. Results and Conclusion: In the present study, the knowledge and awareness regarding the association between systemic diseases and periodontal disease was limited. Hence, medical specialists must recognize the direct and/or indirect impact of oral health on the overall general health and incorporate it in the clinical practice.

KEY WORDS: Oral health, Periodontitis, Systemic diseases

INTRODUCTION

Periodontitis is a chronic inflammatory disease affecting the supporting structures of teeth which includes the gingiva, the periodontal ligament, and the alveolar bone. It is a disease of both hard and soft tissue of the oral cavity.[1] The pathogenesis of periodontitis is influenced by the presence of risk factors. Risk factors are defined as factors whose presence increases the probability to have disease. However, the manifestation and progression of periodontitis are influenced by a variety of factors including subject characteristics, social and behavioral factors, environmental factors, systemic factors, and genetic factors.[2]

Several studies have revealed possible link between periodontitis and different systemic diseases such as cardiovascular disease,[3,4] diabetes mellitus,[5,6] adverse pregnancy outcomes,[7,8] and respiratory diseases.[9,10] This is due to the fact that periodontal infection may act as a focus of infection for systemic diseases. This concept was highlighted by Miller as “focal infection theory.”[11] The three mechanisms by which oral microorganisms contribute of systemic diseases are as follows: Metastatic infection caused by translocation of bacteria, metastatic injury related to microbial products entering into blood circulation, and metastatic inflammation due to immune injury.[12] In periodontitis, due to increased microbial load and virulence, the epithelial barrier is breached and thus microorganisms get an access to the underlying connective tissues and blood vessels, thereby entering systemic blood circulation. This is the primary mechanism of periodontitis-related systemic diseases.[13]

Even though a lot of research work are revolving around this field, many medical practitioners are unaware of the importance of how good oral health helps in controlling systemic disease. In lieu with the above, this questionnaire study has been designed to assess the knowledge and awareness on the association between systemic diseases and periodontitis among medical practitioners.

METHODS

A web-based questionnaire comprising 10 questions was formulated and circulated among 100 medical practitioners.
practitioners. The responses were then subjected to statistical analysis. Inclusion criteria include medical professionals of >10 years of experience. Undergraduate medical students, interns, and postgraduate medical students were excluded from the study. The study protocol was reviewed and approved by the Institutional Ethical Committee of Saveetha Dental College and Hospitals, Chennai.

RESULTS

Table 1 shows the questions used in this study to assess the knowledge and awareness on association between systemic diseases and periodontitis among medical practitioners.

Among 100 study subjects, 89% were familiar with the focal theory of infection and 11% were not familiar with the concept. 80% of them had known the signs and symptoms of periodontal disease. Even though 82% were aware that systemic diseases may lead to periodontal disease, only 46% of the study subjects were aware that periodontal disease is a risk factor for systemic diseases. Moreover, only 4% of them answered positively that periodontitis is the sixth complication of diabetes, whereas 96% of them gave negative response. 3% of them were aware that periodontal therapy will reduce blood glucose, whereas 97% of them were not aware that periodontal therapy will reduce blood glucose level.

The positive responses regarding the association between periodontal disease and pulmonary diseases and atherosclerotic coronary heart diseases were 44% and 47%, respectively. Among the study subjects, only 27% of them were aware that periodontal disease could affect pregnancy outcomes and 61% of them were aware that pregnant women have more tendency toward bleeding and swollen gums.

DISCUSSION

Historically, diseases of the oral cavity have been viewed separately from those of the rest of the body. In recent years, however, efforts have been made to recognize that there is a possible role of oral infections as a risk factor for systemic disease. Since several national surveys, including one in the United States,[14] have shown that only a subpopulation suffers from severe periodontal disease, attempts are being made to identify the systemic and other risk factors that are associated with the severe periodontal disease in this subpopulation so that public health measures can be rendered to prevent periodontal disease in a cost-effective manner. Finally, the emphasis on determining the role of systemic factors in periodontal disease is directed toward better understanding those that are important in modulating periodontal disease.

A study revealed that many people who had some indications of the periodontal diseases appeared to be unaware of their condition and also appeared not to have been informed nor were being treated for it.[15] Awareness among medical and allied professionals about gum diseases varies. A study conducted among nursing home staff demonstrated positive knowledge of periodontal disease and denture care.[16] Our results were in accordance with the above-mentioned study, as most of the practitioners had adequate knowledge about the concept of focal theory of infection (89%), signs and symptoms of periodontitis (80%), and systemic diseases as a risk factor for periodontal disease (82%). However, in the present study only 46% of the study subjects were aware that periodontal disease is a risk factor for systemic diseases.

Anandakumar and Sankari conducted a similar study among medical practitioners to assess the awareness about periodontal disease and its association with systemic diseases and demonstrated that 73% were unaware that periodontal therapy will improve blood glucose level, and 76%, 68%, and 58% of the study subjects were not aware about the association between adverse pregnancy outcomes, pulmonary diseases, and atherosclerotic coronary heart disease, respectively.[17] Similarly, in our study, 97% of them were unaware that periodontal therapy will improve blood glucose

### Table 1: Questionnaire to assess the knowledge and awareness on the association between systemic diseases and periodontitis among medical practitioners

<table>
<thead>
<tr>
<th>Questions</th>
<th>Yes (%)</th>
<th>No (%)</th>
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<tbody>
<tr>
<td>Do you know the concept of focal theory of infection?</td>
<td>89</td>
<td>11</td>
</tr>
<tr>
<td>Do you know the signs and symptoms of periodontal disease?</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>Are you aware that systemic diseases may lead to periodontal disease?</td>
<td>82</td>
<td>18</td>
</tr>
<tr>
<td>Are you aware that periodontal disease is a risk factor for systemic diseases?</td>
<td>46</td>
<td>54</td>
</tr>
<tr>
<td>Do you know that periodontitis is the 6th complication of diabetes?</td>
<td>4</td>
<td>96</td>
</tr>
<tr>
<td>Are you aware that periodontal therapy will improve blood glucose level?</td>
<td>3</td>
<td>97</td>
</tr>
<tr>
<td>Are you aware that periodontal disease can aggravate pulmonary diseases?</td>
<td>44</td>
<td>56</td>
</tr>
<tr>
<td>Are you aware that periodontal disease could affect pregnancy outcomes?</td>
<td>27</td>
<td>73</td>
</tr>
<tr>
<td>Are you aware that pregnant women have more tendency toward bleeding and swollen gums?</td>
<td>61</td>
<td>39</td>
</tr>
<tr>
<td>Are you aware that periodontal disease could increase the risk for atherosclerotic coronary heart disease?</td>
<td>47</td>
<td>53</td>
</tr>
</tbody>
</table>
level and the subjects who were not aware about the association between adverse pregnancy outcomes, pulmonary diseases, and atherosclerotic coronary heart disease were 73%, 56%, and 53%, respectively.

However, it is important to note that the findings described above cannot be generalized because the study was conducted in a very small area. Hence, a correspondent study on a large scale is required to give more appropriate results.

CONCLUSION

In the present study, although the medical practitioners were aware about the association between systemic diseases and periodontitis, still there lies a grey area. Henceforth, medical specialists must recognize the direct and/or indirect impact of oral health on the overall general health and incorporate it in the clinical practice.

REFERENCES