Knowledge of Lithuanian General Dentists of Periodontal Disease Diagnostics, Management and Risk Assessment

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The aim of this study was to investigate the knowledge of general dentists in Lithuania concerning periodontal treatment modalities for the diagnosis and management approaches of periodontal diseases. A previously piloted and revised questionnaire was distributed between random sample of 1005 general dentists via e-mail. The questionnaire consisted of 47 multiple-choice questions divided into three sections: general information, questions about diagnosis and treatment of periodontal diseases and factors preventing or limiting the availability of periodontal treatment. 502 general dentists filled the questionnaire with the response rate of 49.95%. The age average of the respondents was 37 years with the average of 12.5 years in practice. 58% of respondents worked together with dental hygienist; 29% with a periodontist in their practice. Dentists working in urban areas were more likely to have a dental hygienist and periodontist in their practice (p<0.05). Minority of dentists performs periodontal examination (full and partial examination, 14% and 27.9%, respectively) regularly. 93% general dentists take radiographs for periodontal diagnosis, 23.5% only periapical, 33.7% only panoramic and 43.9% use both. 21% of respondents never perform root surface debridement and 20% of these general dentists do not work together with a dental hygienist. Only 5% of respondents evaluate patient’s risk of periodontal diseases. General dentists in Lithuania perform inadequate diagnostics and very little periodontal treatment delivery, in addition to reluctant referral to the periodontist. Thus indicating a necessity of distinctive guidelines and its attentive application in general dental practice.

Keywords: periodontal diagnostics; management; general dentists

Introduction

According to epidemiological studies conducted in Lithuania, the prevalence of periodontitis is from 30 to 37% among 54 – 44 year-old patients and from 57% to 95% among 55 year old and older patients (Aleksejuniene, Holst, Eriksen, & Gjermo, 2002; Globiene, 2001; Skudutyte, 1999). According to official statistical data at the end of 2015 the population of Lithuania was around 2 900 000 and there were 68 specialists in periodontology and 3585 licensed...
It is evident that not all patients suffering from periodontitis are treated by specialists in periodontology and part of the burden is taken by general dentists. Unfortunately it is unclear to what extent general dentists are familiar with the new treatment philosophies for the diagnosis and management of periodontal diseases or what oral health care, including periodontal care they provide. To our knowledge there are no previous studies of this aspect. The aim of this study was to investigate these issues.

**Materials and methods**

This survey was conducted as a part of international survey aiming to investigate the current knowledge, diagnosis and management of periodontal diseases by general dentists in Europe. Lithuania together with Austria, Finland, France, Malta, Poland, Romania, and United Kingdom was one of the partners in this international project. The questionnaire has been previously piloted in all participating countries with sample of 20 general dentists and then it was revised according to the comments. In Lithuania a link with online survey was distributed between random sample of 1005 general dentists via e-mail. Random sample was calculated using sample size calculator of the Australian National Statistics Service (freely available on the ANSS website). The confidence level was set at 95% and confidence interval at 0.05. An over sampling of 300% was used to achieve the number of responses indicated by the power calculator. The sample of 1005 was randomly selected from Dental Chamber dentists register. Respondents were considered to have consented to take part in the survey if they filled the questionnaire. Ethics Committee approval was not required for this study since it was anonymous and no intervention was performed. An approval from State Data Protection Inspectorate was given to access email adresses of dentists chosen to participate in the study. The survey was distributed to the random sample in August 2015 with a reminder in September 2015. The questionnaire consisted of 47 multiple choice questions divided into three sections: general information, questions about diagnosis and treatment of periodontal diseases and factors preventing or limiting the availability of periodontal treatment. IBM SPSS version 22 software was used to analyse data. Data was analysed using descriptive statistics; Chi2 tests and Pearson correlation coefficients were applicable.

**Results**

502 general dentists filled the questionnaire with the response rate of 49,95%.

**General information**

85% (418) of respondents were women. The age average of the respondents was 37 years. On average respondents were 12,5 years in practice. Majority (86%) worked in urban location. Respondents working only in private practice composed 59% (288), 13% (63) worked only in public hospitals and 28% (142) parted their time between private and public dental care offices. 80% worked in a group practice with at least 2 dentists working in the same practice. 58% of respondents worked together with dental hygienist and 29% with a periodontist in their practice. Dentists working in urban areas were more likely to have a dental hygienist and periodontist in their practice (p<0,05). No significant demographic differences were found between responders and non-responders (p<0,05).

**Diagnosis and treatment of periodontal diseases**

61,6% of respondents admitted that they do not perform periodontal examination for all their dentate patients. 14% indicated that they perform full mouth periodontal examination for all their dentate patients and record the measurement of pocket probing depths around all teeth. Also only a minority of general dentists (27,9%) perform a selective partial periodontal examination, e.g. pocket depth assessment, loss of attachment for more than 50% of their patients. 30% of respondents asked dental hygienist to evaluate and record pocket depth for them.

93% general dentists take radiographs for periodontal diagnosis. 23,5% of them take only periapical, 33,7% only panoramic radiographs and 43,9% use both periapical and panoramic radiographs for periodontal diagnostics.

75% of respondents fail to record family history of periodontal disease and 56% of respondents admitted that they even do not always take a full medical history including medications of all patients. Only 5% of respondents recorded pocket depth of all teeth, took full medical and family history of periodontitis. 55% respondents claimed that they do not normally evaluate periodontal risk of their patients.

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1 Lietuvos Respublikos Odontologu Rumai [Dentists of the Republic of Lithuania] Retrieved from http://info.odontologurumai.lt, Lietuvos statistika [ Statistics of Lithuania] Retrieved from http://www.stat.gov.lt
2 Lietuvos Respublikos Odontologu Rumai [Dentists of the Republic of Lithuania] Retrieved from http://info.odontologurumai.lt
Performed periodontal treatment

85% of respondents claimed to provide Oral Hygiene Instructions, 71% teach how to floss and 65% show how to use interdental brushes to the majority of their patients (more than 50%).

21% of respondents reported that they never perform root surface debridement and 20% of these general dentists do not work together with a dental hygienist. 45% of dentists never use local anesthesia while performing oral hygiene procedures.

16% perform periodontal surgery procedures, gingivectomy and clinical crown lengthening being the most common surgical services (83% and 56% respectively); 11% perform implant therapy.

82% reported from 0 to 5 periodontal procedures a week (both non surgical or surgical).

27% of respondents never refer patients to a periodontist.

Consideration of periodontal risk factors

Absolute majority of respondents consider smoking, increasing age, hormonal changes in females, AIDS, diabetes, cancer, use of medications and stress as periodontal disease risk factors. Still majority of general dentists fail to record medical and family history of periodontitis. When anamnesis is not fully taken some patients’ predisposition to periodontal disease might not be recognised (Lindhe et al., 1984; Nagarakanti, Epari & Athuluru, 2013; Pedrini, Panzarini, Poi, Sundefeld, & Tiveron, 2011; Zemanovich, Bogacki, Abbott, Maynard & Lanning, 2006).

Even though 45% of respondents claimed to evaluate patients risk of periodontal diseases, only 5% should have been able to do so, since only 26 respondents measure pockets, take medical history and record family history of periodontitis and these are key factors in establishing patients periodontal risk (Lang & Tonetti, 2003). Difference between these numbers might signify that general dentists do not use proven risk assessment tools to establish periodontal risk of a patient.

100% of respondents were aware that bad oral hygiene is the cause of periodontal diseases. Majority of general dentists reported that they try to provide their patients with oral care instructions. Teaching how to floss was a more popular choice than to show how to use interdental brushes. This was not in accordance with Guidelines for effective prevention of periodontal diseases proposed by European federation of periodontology, which state that there is insufficient evidence to recommend the use of dental floss for interdental cleaning. They also propose that where spaces will accommodate interdental brushes without trauma, they are the current method of choice and provide higher levels of plaque reduction.

Discussion

General dentists in Lithuania might be suspected not to provide comprehensive periodontal diagnostics and treatment. According to the results of our survey, minority of dentists perform periodontal examination and only a part of them probe and record probing depth around all teeth. Failing to measure pocket depths might lead to underdiagnosis of periodontal diseases (Lang & Tonetti, 2003; Lindhe, Westfelt, Nyman, Socransky, & Haffajee, 1984).

Majority of general dentists (95%) chose radiography as a main tool to evaluate marginal bone loss. Both panoramic and intraoral periapical radiographs have been previously reported to be less accurate diagnostic tools than probing (Akesson, Hakansson, & Rohlin, 1992). One third of respondents in our study chose to take only panoramic radiographs for diagnostics of periodontitis but in literature there is evidence that periapical radiography is more accurate in the osseous destruction assessment than panoramic, regardless of the location of the dental surfaces (jaw, tooth group, mesial or distal) and the degree of osseous destruction (Akesson et al., 1992; Pepelassi & Diamanti-Kipioti, 1997). It has also been shown that radiographic assessment of osseous destruction tends to underestimate the osseous destruction and its ability to detect periodontal osseous defects is relatively low (Akesson et al., 1992; Pepelassi & Diamanti-Kipioti, 1997; Pepelassi, Tsiklakis & Diamanti-Kipioti, 2000). Due to these reasons radiographs should only be used as adjunctive method to clinical assessment and probing but not as first choice and main diagnostic tool.

Absolute majority of general dentists in this survey considered systemic diseases, smoking, increasing age, hormonal changes in females, AIDS, diabetes, cancer, use of medications and stress as periodontal disease risk factors. Still majority of general dentists fail to record medical and family history of periodontitis. When anamnesis is not fully taken some patients’ predisposition to periodontal disease might not be recognised (Lindhe et al., 1984; Nagarakanti, Epari & Athuluru, 2013; Pedrini, Panzarini, Poi, Sundefeld, & Tiveron, 2011; Zemanovich, Bogacki, Abbott, Maynard & Lanning, 2006).

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European Federation of Periodontology. The Prevention Workshop. Effective prevention of periodontal and peri-implant diseases. 9-12 November 2014. Retrieved from http://prevention.efp.org
The most common periodontal treatment services provided by general dentists were non-surgical in nature. These results were in compliance with experience in other countries (Halemani, Sanikop, Patil, & Jalli, 2014; Lanning, Best & Hunt, 2007). Nonsurgical approaches such as scaling and root planing are routinely used to prevent or treat periodontal diseases. However, fear of pain and discomfort during subgingival instrumentation has been previously reported to deter nearly 10% of the population from seeking treatment (Lang & Tonetti, 2005). Unfavourably, 45% of general dentists chose not to use any pain control during scaling and root planing procedures. As reported by Leung K. et al., not using local anesthesia during nonsurgical periodontal treatment was associated with greater debridement discomfort, non-compliance with the pain control regimen allocated, longer treatment duration, greater gingival inflammation and a higher percentage sites with probing pocket depths ≥ 5 mm (Leung et al., 2016). If local anesthesia is not used, other pain control strategies should be employed during periodontal treatment in order to increase patient’s comfort and treatment acceptance (Canakci & Canakci, 2007; Kumar, & Leblebicioglu, 2007; Leung et al., 2016). A fifth part of dentists chose not to perform scaling and root planing procedures at all. From epidemiological studies we know that quite a considerable amount (from 37% to 95% in different age groups) of patients in Lithuania suffer from periodontitis (Aleksejuniene et al., 2002; Globiene, 2001; Skudutyte, 1999; A. Mali, R. Mali, & Mehta, 2008) and insufficient periodontal disease treatment by general dentists might have negative impact on their health.

27% of dentists reported that they never referred patients to the periodontists. Further studies are needed to identify the reasons of general dentists’ reluctance to refer patients to periodontists. This study was in compliance with previous studies on periodontal referrals conclusion that referral frequencies were not affected by diagnostic or treatment patterns (Bennett, Lee, Richards, & Inglehart, 2010; Lee, Bennett, Richards, & Inglehart, 2009).

Conclusion

The results of this survey show that general dentists in Lithuania do not perform thorough diagnostics, provide very little periodontal treatment themselves and are to some level reluctant to refer patients to periodontists. Guidelines on diagnostics and treatment choices for periodontal diseases might be of help in order to improve periodontal care by general dentists.

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Осведомленность стоматологов Литвы о диагностике, лечении и оценке заболеваний пародонта

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Целью данного исследования было изучение знаний врачей общей практики в Литве относительно методов обследования, направленных на диагностику пародонта с целью его лечения и предотвращения заболеваний. Ранее опробованная и дополненная анкета была отправлена по электронной почте 1005 стоматологам общей практики методом случайной выборки. Анкета состояла из 47 вопросов с несколькими вариантами ответов, разделенными на три раздела: общая информация, вопросы о диагностике и лечении заболеваний пародонта и факторах, препятствующих или ограничивающих доступность лечения пародонта. 502 стоматолога общего профиля заполнили анкету, что составило 49,95% от числа первоначально отправленных анкет. Средний возраст респондентов составил 37 лет, средний стаж работы - 12,5 лет. 58% респондентов работали вместе со стоматологами-гигиенистами; 29% с пародонтологом. Стоматологи, работающие в городских районах, работали в основном со стоматологами-гигиенистами и пародонтологами (p <0,05). Количество стоматологов, регулярно проводящих периодонтальное обследование (полное и частичное обследование) составило 14% и 27,9% соответственно. 93% стоматологов общего профиля делают рентгенограммы для диагностики пародонта, 23,5% - только периапикально, 33,7% - только панорамно и 43,9% используют оба варианта. 5% респондентов никогда не проводят санацию поверхности корня, и 20% из них не работают вместе с стоматологами - гигиенистами. Только 5% респондентов проводят оценку риска развития заболеваний пародонта у пациентов. Стоматологи общей практики в Литве проводят ненадлежащую диагностику и очень мало уделяют внимание лечению пародонта, и не всегда обращаются к парадонтологу. Таким образом, необходимы особые указания, и их необходимо применять в общей стоматологической практике.

Ключевые слова: пародонтальная диагностика; лечение; стоматологи общей практики

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