Dentist's knowledge in oral hygiene instructions to prevent gingivitis in the pregnant women

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ABSTRACT

The relation between pregnancy and periodontal inflammation has been recognized for many years therefore it is important to maintain and promote oral health during pregnancy. The aim of this research is to evaluate dentist's knowledge in oral hygiene instructions in preventing gingivitis in the pregnant women. The research was conducted a survey of 40 general dentists in West Bandung District. The survey was done by distributing forms of questionnaire sent by mail or by telephone interview, and by asking the dentists about their knowledge in oral hygiene instructions regarding the dental care for pregnant women. All of the respondents agreed that oral health during pregnancy was important and therefore it was important to give the Oral Hygiene Instructions (OHI) to the pregnant patients. Two-thirds of dentists (63.8%) agreed that to do scaling was safe, 36.2% of the respondents doubted if Chlorhexidine mouthwash was safe for the use in pregnant women. Almost half of the dentists (57.4%) were doubtful that there was a relationship between periodontitis and preterm birth or low weight birth rate. Dentists as one of providers of prenatal health care already realized how important it is to keep oral health during pregnancy; however, they doubted if there was a relationship between periodontitis, pre-term birth and low weight birth rate and the safety of using chlorhexidine as an antimicrobial agent during the pregnancy. Providing up to date information and continuing education for dentist's knowledge in order to prevent gingivitis during pregnancy.

Key words: Oral hygiene instructions, gingivitis, pregnancy

ABSTRAK

Hubungan antara kehamilan dan inflamasi periodontal telah diketahui beberapa tahun terakhir, oleh sebab itu sangat penting untuk memelihara dan meningkatkan kesehatan rongga mulut selama masa kehamilan. Tujuan dari penelitian ini adalah untuk mengevaluasi pengetahuan dokter gigi mengenai OHI dalam mencegah gingivitis pada wanita hamil. Survey dilakukan kepada 40 dokter gigi yang berpraktek di wilayah Kabupaten Bandung Barat. Formulir kuesioner didistribusikan melalui pos ataupun wawancara baik melalui telepon dan bertemu langsung, dokter gigi ditanyakan mengenai pengetahuannya tentang OHI yang berhubungan dengan pemeliharaan gigi pada wanita hamil. Seluruh responden setuju bahwa kesehatan rongga mulut selama masa kehamilan penting, oleh sebab itu penting untuk memberikan OHI kepada wanita hamil. Sebanyak 63,8% dokter gigi setuju bahwa perawatan skeling aman

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dilakukan, 36,2% responden meragukan bahwa obat kumur Chlorhexidine aman digunakan pada wanita hamil. Hampir setengah dari responden dokter gigi (57,4%) meragukan bahwa ada hubungan antara periodontitis dengan kelahiran prematur dan berat bayi lahir rendah. Simpulan. Dokter gigi sebagai salah satu penyedia pemelihara kesehatan pre natal telah menyadari bahwa betapa pentingnya untuk menjaga kesehatan rongga mulut selama masa kehamilan, meskipun mereka masih meragukan adanya hubungan antara periodontitis, kelahiran prematur dan berat bayi lahir rendah dan keamanan untuk menggunakan chlorhexidine sebagai agen antimikroba selama masa kehamilan. Pengetahuan dokter gigi dapat diperkuat dengan selalu menyediakan informasi terkini dan melanjutkan pendidikannya dalam rangka upaya mencegah gingivitis selama masa kehamilan.

Kata kunci: *Instruksi kebersihan rongga mulut, gingivitis, masa kehamilan*

INTRODUCTION

During pregnancy, hormonal levels rise noticeably. Progesterone reaches levels of 100mg/mL, 10 times the peak luteal phase of menses. During the pregnancy, the placenta begins to produce estrogens and progesterone. Estrogen may regulate cellular proliferation, differentiation, and keratinization, whereas progesterone influences the permeability of microvasculature.[1]

Progesterone also alters the rate and pattern of collagen production and increases the metabolic breakdown of folate, which is necessary for tissue maintenance. Gingival tissues may function as a target organ for sex hormones. Also, evidence of sex hormone concentration in crevicular fluid exists, providing a growth media for periodontal pathogens such *P. intermedia*. Pregnancy gingivitis is an acute inflammation in gingival tissue during pregnancy. This condition is accompanied by increasing of steroid hormones in gingival crevicular fluid and dramatically raises the quantity of P.intermedia, which use the steroid hormones as the growth factor.[2] In a research in Sri Lanka rural area[3], there was an increment of gingivitis prevalence in pregnant women compared to non-pregnant women. Gingival inflammation increased along pregnancy that had significance in second and third trimester, however the total of plaque was invariable. Three months after giving birth, gingivitis declined as formerly as first trimester.[3]

This condition shows that there is a direct relation between gingivitis and increasing gestational hormones during pregnancy. Gingivitis can develop into periodontitis, which is defined as an inflammatory disease of the supporting tissues of the teeth caused by specific microorganism, resulting in progressive destruction of the periodontal ligament and alveolar bone. A prospective investigation was carried out in London and it showed those subject who experienced a late miscarriage had a poorer periodontal health because the infected periodontal tissue can act as a reservoir for both of bacterial product and inflammatory cytokines.[4] Moreu et al.[5] conducted a study in Spain that periodontal disease was found to be a risk factor for low weight birth. Other studies[6] showed that all women with preterm low weight birth rate had higher PGE2 and IL-1 concentrations in gingival crevicular fluid compared to control group. These findings also were confirmed with an Italian study[7] that pro-inflammatory mediators elevated in pregnant women with periodontal disease might interact with inflammatory mechanism, which affect low weight birth.

Dentists must professionally convince the patient especially pregnant patient regarding the importance of oral health to prevent gingivitis and should promote the responsibilities and motivation of the patient to maintain oral health. Oral hygiene instruction could be delivered by demonstrating to the patients displays that shows them how much plaque in their mouth is. Recently, there has been a disclosing solution that can mark the plaque. Tooth brushing should be demonstrated in the patient's mouth while patient is observing the marked plaque with a hand mirror. The patient then takes over and repeats the procedures with the instructor giving assistance, correction and positive reinforcement. Recommendation of dental floss, interdental cleaning aids, and mouthwashes based on the patient's need. Besides the Oral hygiene instruction, dentists should give counseling to the patient informing that plaque

Table 1. Dentist's knowledge in oral health care for pregnant patient

Statement	Percentage				
	Strongly agree	Agree	Doubt	Disagree	Strongly disagree
The importance of oral examination during pregnancy	82.5	17.5	-	-	-
Scaling treatment is safe to be done for pregnant patient	25.0	67.5	5.0	2.5	-
The importance of oral hygiene instruction for pregnant patient	85.0	15.0	-	-	-
The dentist have seen pregnancy gingivitis	37.5	55.0	2.5	2.5	2.5
The dentist always recommend dental floss, interdental cleaning aids or mouth wash according the patient's need	32.5	50.0	15.0	2.5	-
Chlorhexidine mouth wash is safe to be used for pregnant patient	12.5	45.0	2.5	10.0	5.0
There is a relationship between periodontitits, preterm birth and low weight birth rate	10.0	25.0	55.0	10.0	-

accumulation can affect to gingival or periodontal health and that oral health especially gingival health influences other systemic disease.

The aim of this research was to evaluate dentist's knowledge in oral hygiene instructions to prevent gingivitis in the pregnant women.

METHODS

The authors conducted a survey to 40 general dentists in West Bandung District. The survey in the form of questionnaire was distributed by mail or done by holding telephone interviews and by asking the dentists about their knowledge in oral hygiene instructions on dental care for pregnant women. Level of dentist's participation was counted by quantity of filled questionnaire. The result was descriptively showed by a percentage for each of the questions.

RESULTS

All of the respondents were agree with the importance of oral examination during pregnancy. Nine-tenth of the dentist (92.5%) would do scaling treatment to the pregnant patient and only 5% was doubtful to do scaling during pregnancy. All of the respondents were aware of the importance of giving oral hygiene instruction for pregnant patient. Only 15% of the respondents were doubtful to recommend dental floss, interdental-cleaning aids or mouth wash based on the patient's need and 2.5% did not recommend any cleaning aids for pregnant patient. Most of the respondent (92.5%) had seen the pregnancy gingivitis. However,only 5% of who had never seen the pregnancy gingivitis and 2.5% of the respondent was doubtful whether they had seen it. More than half of the respondents (57.5%) agreed that chlorhexidine mouthwash was safe for the use for pregnant patients and 27.5% doubted with safety of chlorhexidine application during pregnancy. More than half of the respondent (55%) doubted the relationships between periodontitis, pre term birth, and low weight birth rate. One-tenth of the dentist stated that there was no relationship between periodontitis, pre term birth, and low weight birth rate.

DISCUSSION

Scaling, polishing, and root planing can be performed whenever necessary during the pregnancy. The second trimester is the safest period for providing routine dental care. Prolonged chair time, high level anxiety can be avoided because the pregnant woman is most uncomfortable for long time treatment. Most of respondents (92.5%) stated that scaling was safe for pregnant women.

All of the respondents agreed that oral hygiene instruction play an important role in giving patient the responsibility for oral hygiene daily care and not only to depend on dental office visits. Therefore time spent in the dental office teaching the patient how to do plaque control procedures is important as scaling the teeth.

Practitioners should avoid the use of high-alcohol-content antimicrobial mouth rinses in pregnant women and it is preferably to use those of non-alcohol based.[2] Most mouth rinse products contain alcohol. However, the results of the present

controlled clinical study show a performance of the newly developed non-alcoholic Chlorhexidine preparation that are very comparable to the so-called "golden standard"[8], the alcohol-containing 0.2% Corsodyl[R]. Despite of Chlorhexidine include C FDA Classification and has unlikely teratogen risk, adequate safety plaque control can be gained by brushing, flossing, and using antimicrobial agent such a xylitol or chlorhexidine.[9]

As vomiting in the first trimester (morning sickness) can cause a pregnant woman not want to brush her teeth, it may develop plaque. As we know, the relationship between signs of gingival inflammation and the amount of plaque. The gingival tissues are swollen in the presence of gingival inflammation, rendering the self-cleansing mechanisms of the mouth less effective than in a healthy periodontium. These are difficult areas to clean and only poorly accessible to the toothbrush. Dentists can recommend the use of interdental cleaning aids to help cleaning these difficult areas.

A significant association between periodontal disease and adverse pregnancy outcomes has consistently been found in populations with a high incidence of preterm deliveries (African races) and those from economically disadvantaged families.[11-13] The studies were conducted between 1996-2002 revealed that pregnant women with periodontal disease had a significantly higher risk of pre term birth was 4.28 times.[14]

In contrast, most studies conducted in European countries or Canada, which offer universal health care, have shown significantly lower percentages of Pre-term Birth and/or Low Birth Weight and no association between periodontal disease and adverse pregnancy outcomes.[15,16] Hence, the effect of periodontal disease on pregnancy outcomes might differ according to socioeconomic status and access to prenatal care of the women. As we know, in Indonesia, pregnant women health is still government concerned in health program. So the dentists as one of mother and children health care team should improve their knowledge to update the oral health information. In this study it is shown that half of respondents still doubt that there is a relationship between periodontitis, preterm birth and low weight birth rate. Continuing dental education could be a solving solution for the dentist to update their knowledge on oral health. So if the dentists have up-to-date information about oral health especially for pregnant patient, they can transfer the information to other patient and other mother and children health care team such as nurse, midwives, and obstetricians. Good oral health and control of oral disease excel a woman's health and quality of life and have the potential to reduce the transmission of pathogenic bacteria from mothers to their children.

CONCLUSIONS

Dentists as one of providers of prenatal health care already realized how important it is to keep oral health during pregnancy; however, there is a doubt for relationship among periodontitis, preterm birth and low weight birth rate and the use of chlorhexidine as an antimicrobial agent during the pregnancy. Providing up to date information and continuing education for dentist's knowledge in order to prevent gingivitis during pregnancy are necessary.

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