Prenatal Care Practitioners - Knowledge on Periodontal Health and Preterm Delivery

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ABSTRACT

Introduction: There exists the confirmed relationship between pregnancy and periodontitis. So the present study was undertaken to assess the level of knowledge of periodontal disease and its effect on pregnancy outcomes among the gynaecologists practising in and around the city Vijayawada.

Material and Methods: The present study was conducted among 147 gynaecologists. A self structured closed-ended questionnaire containing 20 questions was prepared. The principal investigator approached the gynaecologists personally and distributed the questionnaire after obtaining their informed consent.

Results: Considering their personal information and their knowledge on periodontitis 72.1% of gynaecologists had self perception of good oral hygiene and 53% had periodontal disease. 63.9% opinioned periodontitis had an inflammatory origin, and most of the practitioners associated gingival bleeding and caries as the clinical signs of periodontal disease (64.6% and 65.3% respectively). In their daily practice, gingival overgrowth (53.7%) was the most common complaint given by patients during their consultation, followed by gingival bleeding (22.4%). 77.6% of the practitioners were aware of the influence of periodontal health on pregnancy; and stated that preterm birth (44.9%) being the most common consequence of periodontitis.

Conclusion: Maternal health care professionals play a vital role in promoting good oral health by connecting pregnant woman to the source of dental care.

Keywords: Periodontitis, Gingival overgrowth, Maternal health care.

INTRODUCTION:

Periodontitis is defined as an inflammatory disease of the supporting tissues of the teeth caused by specific microorganisms or groups of specific microorganisms, resulting in progressive destruction of the periodontal ligament and alveolar bone with pocket formation, recession, or both.[1] Evidence of association between periodontal disease and systemic diseases like myocardial infarction, cardiac stroke, diabetes mellitus, atherosclerosis and adverse pregnancy outcomes is being increased in the past 5 years.[2,3] Adverse pregnancy outcomes namely preterm birth, low birth weight, pre-eclampsia, miscarriage or early pregnancy loss have been linked to maternal periodontitis.[4] Infant birth weight under 2500 grams is termed as low birth weight and delivery less than / within 37 weeks of gestation is called preterm delivery.[5] Offenbacher et al reported the association between periodontal disease and preterm delivery.[6] Periodontal diseases attribute to 18.2% of all pre-term low birth weight (PTLBW).[3] Around 16% of the babies are born with low birth weight globally.[7] Gynaecologists are the primary health care providers who are in constant contact with the pregnant women and are often involved in assessment and treatment of women all over their life. Understanding their level of their knowledge on the association of periodontal disease with the pregnancy outcomes can improve pregnancy outcomes and prevent pre-term deliveries.[8] However their awareness is not clear in the above mentioned context. Hence the present study was conducted to assess the level of knowledge of periodontal disease and its effect on pregnancy outcomes among the gynaecologists practising in and around the city Vijayawada.

MATERIAL AND METHODS

The present cross sectional study was conducted among randomly selected gynaecologists in Vijayawada city and 147 gynaecologists participated in this study and returned completely filled questionnaires. All the data was collected from practicing gynaecologists. A self structured closed-ended questionnaire containing 20 questions was prepared. The principal investigator approached the gynaecologists personally and distributed the questionnaire after obtaining their informed consent. Their confidentiality was assured. The questions were answered immediately in 7-10 minutes and handed over to the investigator. The questionnaire contained 3 sections of questions: section 1 included demographic data and past dental histories of the participants; section 2 evaluated the knowledge of gynaecologists on effects of periodontal diseases on pregnancy; in section 3, their behaviour, attitude and referral to the dentists was evaluated.

STATISTICAL ANALYSIS

All returned questionnaires were coded and analyzed. Results were expressed as the number and percentage of respondents for each question and were analyzed using SPSS statistical package. Chi-square test was used to evaluate the differences between the different variables, and the level of significance was set at $P < 0.05$.

RESULTS

It is cross sectional study, 147 gynaecologists participated in this study and returned completely filled questionnaires.

Table-1 shows demographic characteristics of study population. In their daily practice, gingival overgrowth (53.7%) was the most common complaint given by patients during their

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consultation, followed by gingival bleeding (22.4%). 77.6% of the practitioners were aware of the influence of periodontal health on pregnancy; and stated that preterm birth (44.9%) being the most common consequence of periodontitis (table-2). During their routine consultation, 54.4% never performed visual oral examination and 45.6% never questioned regarding the woman's oral health status. Table-3 illustrates gynaecologist's opinion regarding dental treatment during pregnancy

Considering their personal information and their knowledge on periodontitis, 72.1% had self perception of good oral hygiene and 53% had periodontal disease. 63.9% opinioned periodontitis had an inflammatory origin, and most of the practitioners associated gingival bleeding and caries as the clinical signs of periodontal disease (64.6% and 65.3% respectively) (figure-1).

DISCUSSION

The present study sought to assess the knowledge and attitudes of obstetricians and gynaecologists about the relationship between the periodontal disease and preterm / low birth. Adverse pregnancy outcomes present a major health concern to the health professionals in developed and developing countries despite the high level of public awareness and improvement in prenatal care.[9] Preterm delivery and low birth weight constitute the common causes for neonatal morbidity and mortality.[8] Several maternal factors are associated with preterm and/or low birth weight infants including age, height, weight, socio economic status, smoking, nutritional status, stress, maternal hypertension, infections, cervical incompetence.[5] The role of maternal infection remains controversial but it has an indirect effect on release of higher levels of inflammatory mediators and shorten the gestational age. Periodontal disease caused by gram negative bacteria is associated with local and systemic rise of prostaglandins and cytokines; and can influence PLBW indirectly through inflammatory mediators and directly through bacterial assault on amnion.[5] Periodontitis being considered as modifiable risk factors, can be prevented and treated.[10]

Gynaecologists are the primary health care providers for women and has an opportunity to recognise the oral health related problems by performing the oral examination and prompt referral to the periodontist for the necessary care.[11] The present study was performed among the 147 gynaecologists working in government (54.4%) as well as private sector (17.7%), and there was 100% participation. Gynaecologists in the present study displayed acceptable level of awareness on

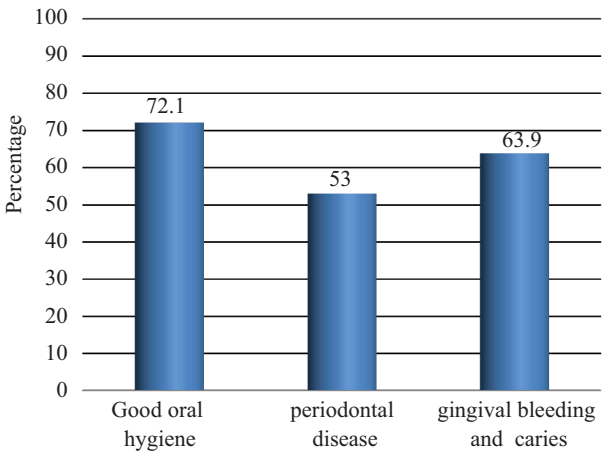

Figure-1: Personal information

Sex	Frequency	Percent
Male	22	15.0
Female	125	85.0
Age		
<25	97	66.0
≥25	50	34.0
Experience of doctor		
<10	86	58.5
≥10	61	41.5
Practice		
Hospital	80	54.4
Private practice	26	17.7
Last dental visit		
<1	47	32.0
≥1	100	68.0
Periodontal disease		
Yes	79	53.7
No	68	46.3

Table-1: Demographic details in the study

Clinical signs	Frequency	Percent
Inflammation and multi-infection	94	63.9
Degenerative process	42	28.6
Auto immunity	2	1.4
Osteoporosis	9	6.1
Total	147	100.0
Clinical signs association		
Gingival bleeding	95	64.6
Tooth mobility	8	5.4
Alveolar bone destruction	6	4.1
Tooth loss	28	19.0
Caries	96	65.3
Oral symptoms		
Gingival overgrowth	79	53.7
Gingival bleeding	33	22.4
Caries	20	13.6
Tooth loss	15	10.2
Influence in pregnancy		
Preterm birth	66	44.9
Low-weight newborn	2	1.4
Pre-eclampsia	8	5.4
No influence	71	48.3

Table-2: Clinical signs and symptoms associated with pregnancy.

Source of knowledge	Frequency	Percent
Continuous education program	94	63.9
Scientific publications	53	36.1
Oral health information during consultation		
Always	49	33.3
If patient considered at risk	98	66.7
Consideration dental treatment in pregnancy		
Indicated (if needed)	112	76.2
Contraindication	35	23.8
Referral dentist check up		
Yes	86	58.5
No	61	41.5
Pregnancy influence periodontal health		
Yes	114	77.6
No	33	22.4

Table-3: Gynecologists opinion regarding dental treatment during pregnancy

periodontal diseases. A study conducted by Shenoy et al showed that though the knowledge regarding the periodontitis as a risk factor for systemic complications, importance of regular dental checkups and oral manifestations was high, awareness regarding the periodontal disease as a risk factor for PLBW was low.[12] These findings are supported by Wilder et al. (2007), who concluded that obstetricians were well aware of periodontal disease as a potential risk factor for PLBW but showed limited incorporation of this knowledge into clinical practice.[11] Among the gynaecologists who participated in the study, a considerable percentage (48.3%) were not aware of the risk of periodontal disease on pregnancy outcomes and 54.4% of the practitioners never performed visual intraoral examination. This shows that considerable section of gynaecologists did not relate periodontitis to adverse pregnancy outcomes. In this study, experience of the practitioners also displayed differences in questioning their patients during their monthly check ups.

Practioners with less experience (<10 years) questioned routinely regarding the woman's oral health (56.3%) while practioners with more experience (>10years) never questioned regarding the oral health status of their patients (table-4). Considerable section of them do not perform visual intraoral examination (54.4%). The above cause may be attributed to the inadequate oral health training provided during the previous years of medical education.[13] In our study, practitioners(53.7%) who were diagnosed with periodontal disease, referred their patients to the dentists(64%) and 39.3% did not refer their patients to the dentist. This is due to time constraints, as large number of patients seeking care making it difficult for the gynaecologists to focus on oral health related issues.[14] The health care of the patients is a reflection of the attitudes of obstetricians towards their personal oral health. It is also relevant to stress the importance of self-care to each member of the healthcare team, since they are the disseminators of knowledge to those under their care.[15]

Most of the practitioners have gained the knowledge through Continuous education program (63.9%) (table-3). Inter disciplinary continuing medical and dental education programmes have to be organised due to the fact that only limited section of gynaecologists are aware of the possible

Women's oral health	**Experience**		**Total**
	<10	**≥10**	
Yes	45	35	80
	56.3%	43.8%	100.0%
No	41	26	67
	61.2%	38.8%	100.0%
Total	86	61	147
	58.5%	41.5%	100.0%
Chi-square=0.37; P-value= 0.55; NS			
Referral dentist check up	**Periodontal disease**		**Total**
	1.0	2.0	
Yes	55	31	86
	64.0%	36.0%	100.0%
No	24	37	61
	39.3%	60.7%	100.0%
Total	79	68	147
	53.7%	46.3%	100.0%
Chi-square=8.69; P-value<0.01; HS			

Table-4: Women's oral health and Referral dentist check ups

link. Lamster et al recommended that communication among health professionals themselves, as well as with patients, is a key attitude toward health promotion.[15] Certain limitations is the small sample size that hinders to make definite conclusions on the issue and the present study included the gynaecologists and obstetricians practising in Vijayawada city. Therefore the results of the study cannot be applied in general or in the adjacent regions. In the future, policies have to be developed to improve the communication of good oral health care practices between physicians, dental hygienists, dentists and health care providers. Formal education strategies will be needed in medical and dental school curriculums regarding the association between oral health and systemic health for practitioners to be able to fully understand the health consequences of an untreated oral infection.

CONCLUSION

Maternal health care professionals play a vital role in promoting good oral health by connecting pregnant woman to the source of dental care. Gynaecologists in the present study displayed certain level of knowledge. However the multidisciplinary approach was not opted by all of them. Seminars and interactive workshops might be useful in creating the awareness for the medical practitioners in this topic and publication of journals updating the knowledge on perio-systemic link may prove to be useful. Bilateral interdisciplinary protocol can thereby reduce the incidence of maternal and neonatal complications.

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