# Dentist's Opinion Toward Treatment of Pregnant Patients

Ra'ed Al-Sadhan* and Abdullatif Al-Manee**

Saudi Dental Journal 2008;20 (1):24-30.

* Assistant Professor, Department of Maxillofacial Surgery and Diagnostic Sciences, College of Dentistry, King Saud University, Riyadh.
** Assistant Consultant, King Abdulaziz Medical City, National Guard, Riyadh.
Address reprint requests to: Dr. Ra'ed Al-Sadhan, College of Dentistry, King Saud University, PO Box 60169, Riyadh 11545

**Abstract:**

**Introduction:** The aim of this study was to survey the treatment choices that the dentists in Riyadh had regarding dental care for pregnant patients. **Material and Methods:** A self-administered questionnaire was used to collect data on dentists socio-demographic and practice characteristics in addition to management choices of the pregnant dental patient such as dental treatment practices and selected therapeutic choices. **Results:** Total of 212 questionnaires were collected. Most of the participants were general practitioners, with less than 5 years clinical experience, who got their degree from local institutes and practiced in government sectors. Only slightly more than half of the participants will take dental x-ray for a pregnant patient who has pain from a tooth with doubtful diagnosis or would extract a non-restorable painful tooth. Only 55% of the surveyed dentists would extract a non-restorable painful tooth during pregnancy. Two thirds of the participating dentists would not replace a missing molar with a fixed partial denture during pregnancy. The majority of the participants (86%) would give oral hygiene instructions, prescribe a mouthwash and do scaling and/or root planing for a pregnant patient with gingival bleeding and calculus deposits. Five antibiotic choices were surveyed; Amoxicillin, Clindamycin, Tetracycline, Metronidazole and Cephalosporines. The majority of the dentists (96%) would prescribe Amoxicillin to a pregnant patient. Five analgesic agents were surveyed; Paracetamole, Acetaminophen, Ibuprofen, Aspirin and Codeine. By far Paracetamole was the most popular analgesic agent (96.7%). The choice of four types of local anesthesia agents during pregnancy was surveyed (lidocaine with or without adrenaline vasoconstrictor and prilocaine with or without felyprssin vasoconstrictor). The majority of the dentists (75%) would use lidocaine without vasoconstrictor and would not use prilocaine with felyprssin vasoconstrictor. **Conclusion:** This survey showed that there is a clear lack of knowledge about appropriate management of the pregnant dental patient among the surveyed dentists regardless of their socio-demographic and practice characteristics necessitating continuous education on the dental management of pregnant dental patient.

**آراء أطباء الأسنان تجاه علاج المرأة الحامل**

**د. رائد السدحان و د. عبداللطيف المنيع**

**مقدمة:** هدفت هذه الدراسة المسحية للتعرف على خيارات علاج المرأة الحامل وأنواع الرعاية المقدمة لها في عيادات الأسنان. **طريقة البحث:** وزع في مدينة الرياض استبيان ذاتي التعبئة لجمع البيانات المتعلقة بخصائص أطباء الأسنان المشاركين في المسح وخيارات تقديم الرعاية الصحية للمرأة الحامل بما في ذلك السؤال عن إمكانية عمل إجراءات محددة أو وصف أدوية معينة. **النتائج:** جمع ٢١٨ استبيان في هذا المسح. معظم المشاركين كانوا أطباء أسنان عامين غير متخصصين وخبرتهم العملية أقل من ٥ سنوات وتخرجوا من جامعات محلية ويعملون في القطاع الحكومي. فقط أكثر من النصف بقليل من الأطباء المشاركين سيأخذون أشعة أسنان لمريضة حامل تشتكي من ألم في أحد أسنانها حتى وإن كان تشخيص حالة السن مشكوكاً فيه. بينما اختار فقط ٥٥٪ من المشاركين خلع سن مؤلم غير قابل للإصلاح خلال الحمل. ثلثي المشاركين لن يقوموا بتعويض ضرس طاحن مفقود بطقم أسنان جزئي ثابت خلال الحمل. إما بالنسبة للمرأة الحامل التي تركم الجير على أسنانها وتنزف لثتها فقد اختار معظم المشاركين (٨٦٪) تقليح أسنانها بالإضافة إلى إعطاء تعليمات تنظيف الفم ووصف مضمضة مطهرة. استطلعت آراء المشاركين تجاه وصف خمس مضادات حيوية هي أموكسيسيلين وكلندامايسين وتتراسايكلين وميترونيدازول و سيفالوسبورين، فاختار أكثرهم وصف الاموكسيسلين (٩٦٪). كما استطلعت آراء المشاركين تجاه وصف خمسة أدوية مسكنة للألم هي الباراسيتامول و الاسيتامينوفين والأيبوبروفين والأسبرين والكوداين، فاختار معظمهم الباراسيتامول (٩٦,٧٪). وأخيرا سئل أطباء الأسنان عن اختيارهم لمادة التخديرالموضعي التي يستخدمونها مع المرأة الحامل من بين أربع مواد هي الليدوكين مع أو بدون قابض الأوعية الدموية الأدرينالين وبرولوكين مع أو بدون قابض الأوعية الدموية فيلبريسين، فاختار ثلاثة أرباعهم استعمال الليدوكين بدون قابض الأوعية الدموية الأدرينالين وتجنب برولوكين مع قابض الأوعية الدموية فيلبريسين. أظهر هذا البحث وجود نقص واضح في معلومات أطباء الأسنان في أساليب تقديم الرعاية الصحية للمريضة الحامل بغض النظر عن صفاتهم وخصائصهم الاجتماعية أو الجغرافية مما يستوجب تكثيف برامج التعليم الطبي المستمر في هذا الموضوع بالإضافة إلى تعزيز تدريس هذا الموضوع عند تغطيته في مرحلة بكالوريوس طب الأسنان.

**Introduction:**

Pregnancy results in physiologic changes in almost all organ systems in the body. Physiologic changes of pregnancy influence the dental management of women during pregnancy. Understanding these normal changes is essential for providing quality dental care for pregnant women.

Some dentists have been reluctant to provide dental care to pregnant patients due to uncertainty of the risks that might be imposed on both the mother and the fetus. This uncertainty may be reflected as an undercare for this vulnerable population.

A recent European study showed only 54.6% of the surveyed dentists felt they were sufficiently informed and educated about the treatment of pregnant patients (2) while another European study showed that only 58% of the interviewees decided clearly in favor of local anaesthetics (3).

No previous studies examined the dental care choices during pregnancy in Saudi Arabia.

The aim of this study is to survey the treatment choices that the dentists in Riyadh, Saudi Arabia had regarding dental care for pregnant patients.

**Materials and Methods:**

**Participants**

Five hundred complete anonymous self-administered questionnaires were personally distributed among a group of dentists working in group private practices, and government clinics/hospitals in Riyadh, Saudi Arabia in September – November 2006. The dentists were approached in their practice locations or during continuous education courses.

Preadministration piloting was conducted including interviews with dentists to ensure that the instrument was comprehensible and valid. A few minor changes were made before these questionnaires were distributed.

**Survey Instrument**

Data were generated through a questionnaire that was designed in Arabic and English languages (Fig. 1) and comprised a series of questions pertaining to socio-demographic and practice characteristics in addition to management choices of the pregnant dental patient.

The demographic and practice portion of the instrument included questions on gender, specialty, place of degree, number of years in clinical practice and type of practice (government or private).

Questions pertaining to management choices of the pregnant dental patient were close ended with nominal or categorical (yes or no) responses and participants were instructed to respond with a question mark (?) if they were uncertain of the answer. Those sections

covered different aspects of dental treatment practices for the pregnant patient such as tooth extraction, dental x-ray examination, elective dental treatment (posterior three units fixed partial denture), and periodontal treatment. Additionally, selected therapeutic choices such as antibiotics, analgesics, and local anesthesia for the pregnant patient were included.

The survey results were analyzed for all the socio-demographic data and practice management choices, however, only the statistically significant results will be reported.

**Statistics**

The data analysis was performed by means of SPSS program version 15 and the frequency distributions were computed. The t-test was used to detect differences between various populations considering the socio-demographic data and and practice management choices. The P value was set at $<0.05$ for significance throughout the study.

**Result:**

**Socio-demographic and Practice Characteristics**

Of the 500 surveys sent, 212 were returned (42.5% response rate). Fifty seven percent were males and 43% were females. The majority of respondents (69%) were general dental practitioners and 31% were specialists. The participants were grouped into two categories based on their clinical experience, 38% had five years or more of clinical experience and 62% had less than five years. Those who were graduated of local education and training represent 64% while 36% had their degree abroad. Two thirds of the participants (65%) work in government and 35% were in private practices (Fig.2).

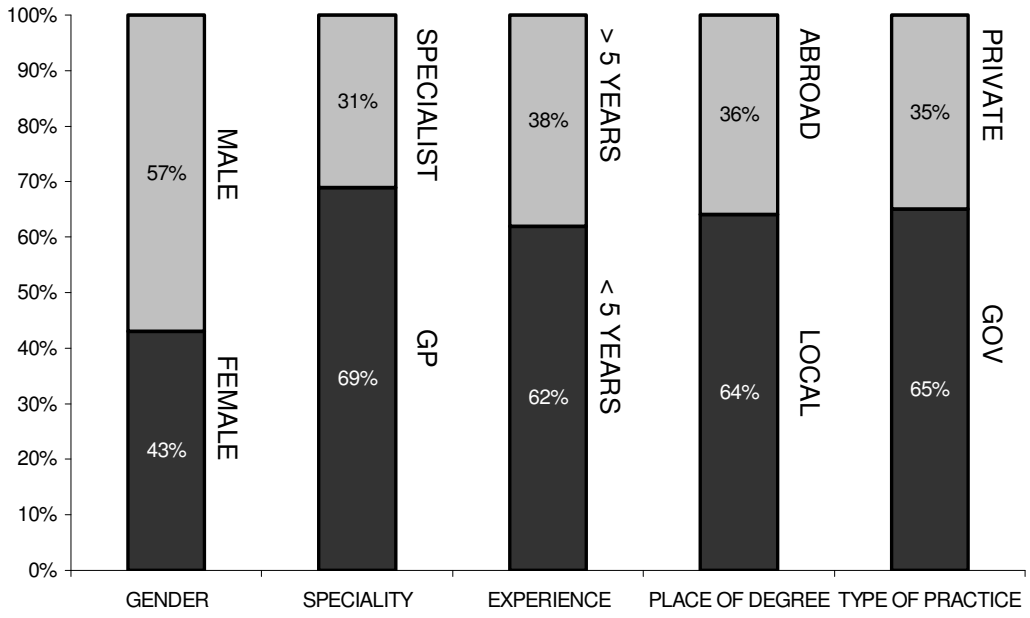


Fig.2 Socio-demographic and practice characteristics of the participants

**Management Choices**

The participants were asked if they would take x-ray with maximum precaution for a pregnant patient and 56.6% (120) said they would take x-ray if necessary while 42.5% (90) refused exposing a pregnant patient to any x-ray even if they are uncertain of the diagnosis and only 1% (2) did not know the answer. Half of the private dentists (53%) avoided taking dental x-ray during pregnancy compared to only one third (37%) of those who worked in the government (significantly different at $\alpha = 0.05$, P value = 0.0124). Fifty five percent (116) of the surveyed dentists would extract a non-restorable painful tooth whereas 43% (91) would not perform any extraction during pregnancy and would manage the pain by prescriptions or extirpating the pulp of the painful tooth, and only 2% (5) did not know the answer. Elective treatment was represented in the survey in the form of replacement of a missing molar (non esthetic area) with a posterior three units fixed partial denture, one third of the dentist (70) would do it while two thirds (140) would delay it after delivery and only 1% (2) did not know whether to do it or not. Two thirds (67%) of the group that choose to do elective treatment during pregnancy were males compared to only one third (34.5%) female who would do it (significantly different at $\alpha = 0.05$, P value = 0.00000135). Dentists in private clinics were more willing to perform elective treatment (46%) while only 28% of government dentists would do this treatment. The majority of the participants (86%) would give oral hygiene instructions, prescribe a mouthwash and do scaling and/or root planing for a pregnant patient with gingival bleeding and calculus deposits while 12% (25) refused the concept of scaling and root planing to a pregnant patient even if the patient showed signs of periodontal disease and 2% (4) were uncertain of the procedures (Fig.3).

In general, the percentage of the dentists who were uncertain about their management option was only 1.5%.

Socio-demographic and practice characteristics of the participants had no significant effects on their management choices other than the differences mentioned above.

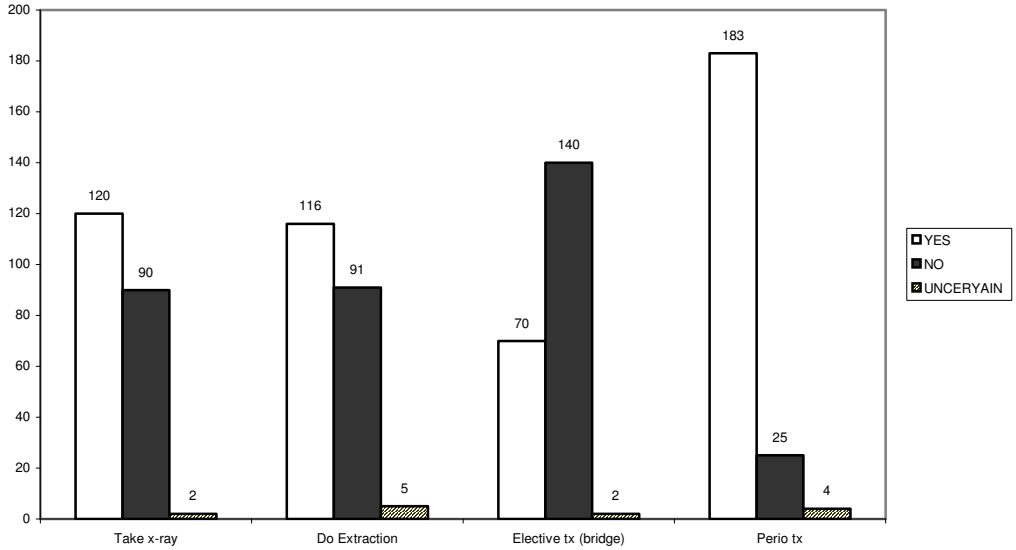


Fig.3. Management choices of dentists for pregnant dental patient

**Antibiotic Choices**

Five antibiotic choices were surveyed; Amoxicillin, Clindamycin, Tetracycline, Metronidazole and Cephalosporines. The majority of the dentists (96%) would prescribe Amoxicillin to a pregnant patient. Sixty five percent (138) would not prescribe Clindamycin to a pregnant patient while 23.5% (50) would prescribe it and 11.5% (24) were uncertain. On the other hand, 198 dentists (93.5%) avoided Tetracycline during pregnancy while only 3 dentists (1.5%) would prescribe it and 11 dentists (5%) were uncertain. Metronidazole and Cephalosporines approximately had similar results as 73.5 – 70% of participants avoided prescribing them for pregnant patients while 15 – 18.5% would prescribe them and 11.5% of the participants were uncertain (Fig.4).

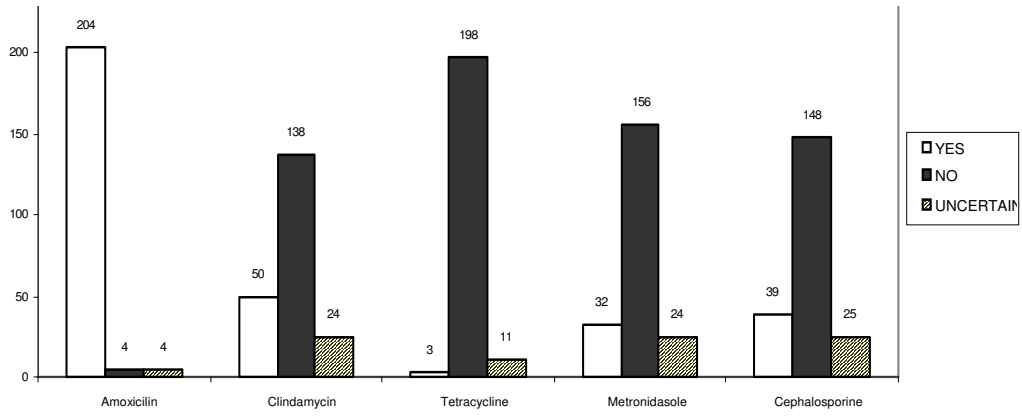


Fig.4. Antibiotic choices of dentists for pregnant dental patient

**Analgesic Choices**

Five analgesic agents were surveyed; Paracetamole, Acetaminophen, Ibuprofen, Aspirin and Codeine. By far Paracetamole was the most popular analgesic agent (96.7%). Only

27.5% (58) of the dentists would give Acetaminophen to a pregnant patient whereas 56% (119) would not use it and the rest (16.5%) were uncertain about it. The other analgesic agents (Ibuprofen, Aspirin and Codeine) had relatively similar results as those who would use them range from 5 - 13% while those who avoided them represented 76.5 – 85% of the dentists and those who were uncertain were 8 – 10.5 % of the dentists (Fig.5)

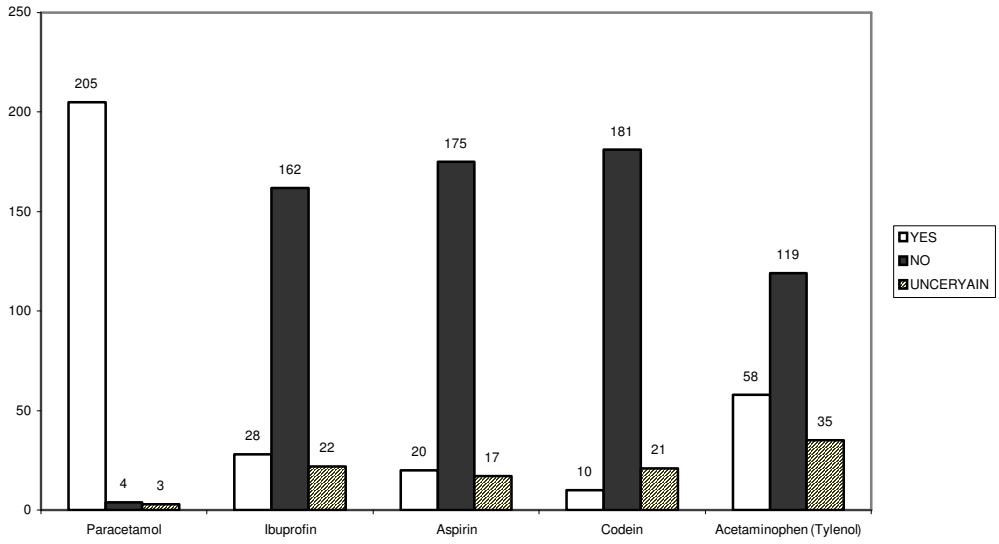


Fig.5. Analgesic choices of dentists for pregnant dental patient

**Local Anesthetic Agent Choices**

The choice of four types of local anesthesia agents during pregnancy was surveyed (lidocaine with or without adrenaline vasoconstrictor and prilocaine with or without felyprssin vasoconstrictor). The majority of the dentists (75%) would use lidocaine without vasoconstrictor and would not use prilocaine with felyprssin vasoconstrictor. eighteen percent (38) of the dentists were uncertain about prilocaine without vasoconstrictor (Fig.6).

The percentage of dentists who were uncertain about prescribing medications for pregnant patients reached 9%. The heights uncertain percentages were seen in prilocaine and Tylenol.

Socio-demographic and practice characteristics of the participants had no significant effects on their therapeutic choices.

Participants were more polarized regarding their choices of local anesthesia agent and management options and more homogenous on other surveyed issues.

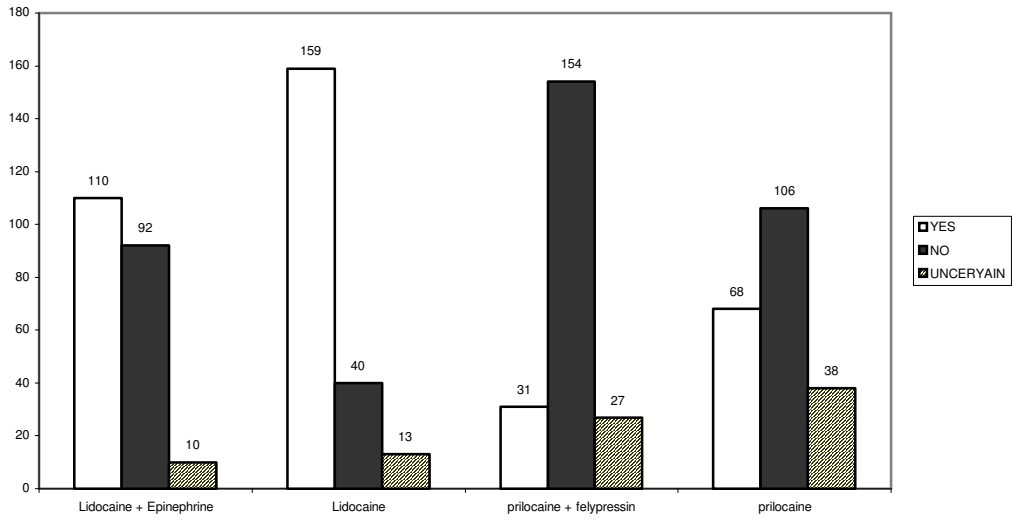


Fig.6. Local anesthesia choices of dentists for pregnant dental patien

**Discussion:**

This study showed that 56.6% of surveyed dentists would take x-ray even if it was necessary for definitive diagnose of a pregnant patient complain. A similar European study showed that only 33% of the surveyed dentists would request a radiographic examination when necessary (3). The concept of avoiding radiography during pregnancy generally applies to procedures in which the embryo or fetus would be in or near the primary beam. For dental radiography, the primary beam is limited to the head and neck region. Furthermore, standard radiation hygiene practices, such as the use of high-speed film, filtration, collimation, and leaded aprons, greatly reduce exposure. A full-mouth radiographic series have been shown to be significantly less than 1 cGy, a dose far lower than uterine exposure from naturally occurring background radiation during the 9 months of pregnancy (1). The maximum risk attributable to 1 cGy exposure to the fetus has been estimated to be about 0.1%, a quantity thousands of times less than the baseline risks of spontaneous abortion, malformation, or genetic disease (12,13). However, it is prudent to avoid or minimize the use of diagnostic radiography during pregnancy, especially during the first trimester, the period of organogenesis (1,12).

Private dental practitioners participating in this survey were more conservative in using needed dental x-ray examination during pregnancy than those who practiced in government. This could be due to the fact that private dentists did not want to perform a procedure that might make their patient worry or blame them for any pregnancy complication that could happen.

Although minor/outpatient oral and maxillofacial surgical procedures can be done for pregnant patients if some basic guidelines have been followed (14), approximately half of the dentists in this study would not extract a painful non-restorable tooth during pregnancy. Elective dental care is best deferred until after parturition (14). Two thirds of the surveyed dentists (66%) would not do any elective treatment, however, we found that most of the male dentists (67%) would perform such treatment during pregnancy compared with only 36% of the female who would do it. No clear explanation can be found in our data for such differing gender choices. A similar European study showed that 35.5% of their participants postponed treatment to a postnatal time if possible (2).

Private dentists were twice more likely to perform elective dental treatment for a pregnant patient (46%) as compared to government dentists (28%). This is possibly due to the private dentists concern that deferring an elective dental treatment could result in near economic loss to their private practice if the patient is lost for future followup after delivery.

Initiating or continuing a oral health preventive care program is essential during pregnancy, however, 14% of the participants either would not perform scaling or were uncertain about it. This over conservative choice is inappropriate and reflects lack of knowledge among this group.

More uncertain answers were noticed in therapeutic choices section than in management choices section.

Clinicians should always strive to choose the medication with the most reassuring and extensive data available. The US FDA has categorized the potential for drugs to cause birth defects, providing definitive guidelines for prescribing drugs during pregnancy (9). They are as follows:

**Category A**—Controlled human studies indicate no apparent risk to the fetus. The possibility of risk to the fetus is remote.

**Category B**—Animal studies do not indicate fetal risk. Well-controlled human studies have failed to demonstrate a risk

**Category C**—Animal studies show an adverse effect on the fetus but there are no controlled studies in humans. The benefits from use of such drugs may be acceptable.

**Category D**—Evidence of human risk, but in certain circumstances the use of such a drug may be acceptable in pregnant women despite its potential risk.

**Category X**—Risk of use in pregnant women clearly outweighs possible benefits.

Amoxicillin, Clindamycin, Metronidazole, and Cephalosporines are all classified as B category (4,6,9), however, 96% would prescribe Amoxicillin and only 19% on average

would prescribe Clindamycin, Metronidazole, and Cephalosporines. This is most likely due to the lack of knowledge about their safety.

When acetaminophen is administered in therapeutic doses, it generally is considered to be the best choice for managing oral-facial pain during pregnancy (8,10-11). In spite of this, 72.5% of the participant dentists would not prescribe it possibly because either they conceder it unsafe or they were unaware of it.

Most local anesthetic agents have not been shown to be teratogenic in humans and are considered relatively safe for use during pregnancy (6). However, 25% of the surveyed dentists were against the use of local anesthetic agents. Two other studies showed that only 14% and 42% of the participants were against the use of local anesthatic during pregnancy (2,3). Epinephrine, a naturally occurring hormone, is generally considered to have no teratogenic effects when administered with dental anesthetics(4-8). However, 48% of the dentists in this study considered it unsafe or uncertain about it. The avoidance of epinephrine with local anesthesia will result in shorter duration of local anesthetic action which will limit the time available for necessary dental procedures or induction of dental pain and psychological stress that is also potentially harmful for the pregnant patient.

**Conclusion:**

This survey showed that there is a clear lack of knowledge about appropriate management of the pregnant dental patient among the surveyed dentists regardless of their socio-demographic and practice characteristics necessitating continuous education on the dental management of pregnant dental patient.

## References


1- National Council on Radiation Protection and Measurements: Radiation Protection in Dentistry, NCRP Report No. 145, 2003.

2- Dental treatment concepts for pregnant patients--results of a survey. Pistorius J, Kraft J, Willershausen B. Eur J Med Res. 2003 Jun 30;8(6):241-6.

3- The pregnant patient in dental care. Survey results and therapeutic guidelines. Pertl C, Heinemann A, Pertl B,Lorenzoni M,Pieber D,Eskici A, Amann R. Schweiz Monatsschr Zahnmed. 2000;110(1):37-46.

4- Pregnancy and lactation. Lakshmanan Suresh, BDS,and Lida Radfar, DDS, MS. (Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2004;97:672-82)

5- Martin C, Varner MW. Physiologic changes in pregnancy: surgical implications. Clin Obstet Gynecol 1994;37:241-55.

6- Selecting drugs for the pregnant dental patient. J Am Dent Assoc. 1998 Sep;129(9):1281-6. Review.

7- Miller MC. The pregnant dental patient. J Calif Dent Assoc 1995;23(8):63-70.

8- Folbs PI, Dukes MNG. Drug safety in pregnancy. Amsterdam: Elsevier; 1990.

9- United States Food and Drug Administration. Labeling and prescription drug advertising: content and format for label-ing for human prescription drugs. Fed Regist 1979;44(124):37434-67.

10- Briggs GG, Freeman RK, Yaffe SJ. Drugs in pregnancy and lactation: A reference guide to fetal and neonatal risk. 3rd ed. Baltimore: Williams & Wilkins; 1990.

11- Balligan FJ, Hale TM. Analgesic and antibiotic administration during pregnancy. Gen Dent 1993; 41(3):220-5.

12- Susan ER, Geza TT. The pregnant and breast-feeding patient. Quintessence Int 2006;37:455-468.

13- Brent RL. The effects of embryonic and fetal exposure to x-rays, microwaves and ultrasound. Clin Obstet Gynecol 1983;26:484-510

14- Michael T and Shahid R A. Management of the Pregnant Oral and Maxillofacial Surgery Patient. J Oral Maxillofac Surg 60:1479-1488, 2002