



## Pregnancy: Timely Need and Necessity of Oral Health Care

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### ABSTRACT:

Pregnancy is a dynamic physiological state that is evidenced by several transient changes. These changes can develop as various physical signs and symptoms that can affect the patients' health, perceptions, and interactions with others in the environment. A gestational woman needs different levels of support throughout the time, such as medical monitoring or intervention, preventive care, physical and emotional assistance. Patients may not always understand the relevance of their bodies' adaptations to the health of their fetuses. Applying the fundamentals of preventive dentistry at the primary level will broaden the scope of the prenatal care. As soon as a patient of childbearing age learns she is pregnant, dentists should advise her to get an oral health examination and counselling. During pregnancy, dentists may delay certain elective procedures so that they coincide with the periods of pregnancy which are devoted to maturation versus organogenesis. This article has reviewed some of the physiologic changes and the oral pathologies which are associated with pregnancy and the role of oral health care to improve the condition.

### BACKGROUND

The mother's body undergo changes as a result of the hormonal storm that is brought on by pregnancy, and the oral cavity is no exception. For a pregnancy to progress normally, there must be a ten-fold and a thirty-fold increase in the release of the female sex hormones, progesterone and oestrogen [1]. Pregnant women experience many systemic and local physiological and physical changes due to increased hormone release and the growing foetus. The cardiovascular, haematologic, respiratory, renal, gastrointestinal, endocrine, and genitourinary systems experience the most significant systemic alterations. The oral cavity is one of the many body areas where the local physical alterations take place. Pregnant patients may provide a number of issues for dental professionals due to these collective changes. In order to provide proper dental care to pregnant and nursing moms, it is crucial to comprehend the physiological changes that occur in their bodies, as well as the effects of dental radiation and drugs used in dentistry for these patients [2].

### INTRODUCTION

Systemic diseases such as dyspnoea, which affects 60-70% of pregnant women, hyperventilation, snoring, an upper ribcage breathing pattern, chest enlargement, and rhinitis can occur in women during pregnancy. Pregnant patients affected by hemodynamic changes, like increased fibrinolytic activity to offset the increased clotting tendency, and elevation of the coagulation factors V, VII, VIII, X, and XII and decrease of the factors XI and XIII. Some experience gastrointestinal changes causing a rise in progesterone concentrations that is secondary to inhibition of the production of the motilin peptide hormone, leading to an increase in intragastric pressure and a decrease in the tone of the lower oesophageal sphincter. 30 and 70 percent pregnant women experiences heartburn (acidity) and nearly twice as long a stomach emptying time as non-pregnant women [3, 4]. 66% of pregnant women have nausea and vomiting, which peaks 8-12 weeks after the last menstrual cycle and begins about 5 weeks after the last menstrual period. Pregnant women who have an



increased tendency to vomit should avoid scheduling morning dental appointments. Additionally, renal alterations, such as an increased renal perfusion during the second half of pregnancy, can result in increased drug excretion in the urine. Therefore, drug dosage modifications are frequently needed for these patients. Pregnant women also experience changes in their hormone levels; of these, 45% develop gestational diabetes. Conversely, in about 8% of cases, the decubitus hypotension syndrome, also known as the vena cava syndrome, is detected in the last stages of pregnancy due to a problem with the venous return to the heart, which is brought on by the gravid uterus compressing the inferior vena cava. When the patient is in the horizontal position, this ailment presents as a sudden drop in blood pressure, along with nausea, dizziness, and fainting [5]. Pregnant women should avoid this issue by sitting on the dental chair with their right hips slightly elevated (10–12 cm) or slanted to the left. Nonetheless, dental decay and gingival issues are known to affect expectant mothers. Because of poor oral health during pregnancy, expectant mothers may experience premature delivery or with a low-birth-weight baby and/or pre-eclampsia. Even gingival tissue ulcerations, pregnancy granuloma, gingivitis, epulis gravidarum, pregnancy tumors tooth erosions, oral dryness, and loose teeth may also occur. [6].

## METHODOLOGY

A thorough search was conducted using the Google Scholar, PubMed, and MEDLINE databases. “Pregnancy”; “Pregnant Women”; “Dentistry”; “Dental Treatment”; “Oral Hygiene”; “Oral Health”; “Periodontal Disease”; “Periodontitis”, were among the many keywords we used.

## DISCUSSION

### *Pregnancy-related oral pathologies*

- **Periodontal Disease**

As the most common illness experienced during pregnancy (affecting 60–75% of expectant mothers), gingivitis caused by plaque formation is crucial to define guidelines for preventive and periodontal care [7]. Usually developing between the third and eighth month of pregnancy, gingivitis progressively becomes better after giving delivery. Even though plaque bacteria and/or poor oral hygiene are the usual causes of gingivitis, pregnancy-related changes can exacerbate the body's reaction to local inflammatory agents. Gingivitis is

characterized by dark red, swollen gingiva that readily bleeds, which is actually an indication of altered vascularization [8].

According to a recent study, there is a correlation between an increase in "red complex" bacteria such *Porphyromonas gingivalis* and *Prevotella intermedia* with the progression of periodontal disease. Pregnancy, however, has little effect on the ratios of the different microorganisms [9]. A different study that compared the bacterial loads of pregnant and non-pregnant women discovered that the former had higher levels of *Campylobacter rectus*. This result makes sense because the body's levels of oestradiol are strongly correlated with the amount of this bacteria [10]. Contrarily, in a different study, there was no difference in the bacteria's behaviour between pregnant and non-pregnant women. This was especially true of *Fusobacterium nucleatum*, which can penetrate the placental barrier and produce acute infections [11].

The heightened expression of inflammatory markers during pregnancy is indicative of a highly active inflammatory response [12,13]. Pregnancy tumor, gingivitis simplex, gingivitis ulcerosa, and gingivitis hypertrophicans are some of the gingival (periodontal) diseases in pregnant mothers. It has been demonstrated that the source of these alterations is the increased level of bloodstream progesterone, which raises vascular permeability. A further reason for this phenomenon is believed to be the inadequate vitamin C levels [14]. Providing calcium, vitamin C, and P and F1 are considered advantageous [15,16]. Mothers who exhibit periodontal attachment loss are more likely to give birth low birth weight babies, in contrast to mothers whose periodontium is in good health [17-21].

Treatment for periodontal disease can involve both surgical and non-surgical procedures, either done alone or in combination. Motivating the patient and providing guidance on maintaining proper oral hygiene, preventing plaque build-up, and preventing tartar formation are the most popular methods of periodontal therapy [22, 23]. According to recent studies, educational and behavioural treatments can enhance periodontal health during pregnancy. These therapies work better if they are implemented for the duration of the pregnancy, not just at the start [23,24].

- **Mobility of Teeth**

Pregnancy-related generalized tooth movement is associated with alterations in the hard lamina's mineralization and the extent of the periodontium's involvement [25]. According to longitudinal research,



inflammation and inflamed gums lead the probing depth to increase [26]. The majority of research findings indicate that clinical attachment loss (CAL) is transient [27,28], while some investigations assert that CAL does not reverse after the conclusion of pregnancy [29].

- **Epulis gravidarum**

Another name for epulis gravidarum is granuloma, or pregnant tumour. The lesion resembles a benign tumour resulting from gingival connective tissue hyperplasia. The most common places to find Epulis gravidarum are after persistent trauma or gingival inflammation [30]. Deposits of plaque and tartar are frequently observed in the vicinity of the lesion. To minimize plaque retention as much as feasible, subgingival scaling and root planning should be done prior to delivery, along with patient education and oral hygiene recommendations [7]. After childbirth, the epulis gravidarum usually regresses on its own, however occasionally surgical excision is required [31].

- **Dental caries & Erosion**

Teeth can become temporarily more susceptible to erosion and decay during pregnancy and nursing [32]. The following variables can cause oral and dental health to deteriorate during pregnancy [33-35]:

- In the initial months of pregnancy, some mothers may have intense cravings for various meals, particularly carbs, and brushing their teeth is neglected after consuming these kinds of food.

- Women who are pregnant bleed more easily as a result of effect of pregnancy hormones- progesterone and oestrogen, and may avoid brushing their teeth as a result. Consequently, bacterial plaque builds up. Thus, during pregnancy, the mouth requires greater attention.

- The flow of saliva also diminishes, resulting increased risk of dental caries.

- Pregnant women frequently experience nausea and vomiting (70–85% of them), though these symptoms usually go away during the first trimester. Even though nausea and vomiting are common in the first trimester of pregnancy, 0.3–2% of women do not experience a reduction in their symptoms. Additionally, some women may experience hyperemesis gravidarum, a severe form of nausea and vomiting that can cause acid-induced erosion of the enamel, particularly on the vestibular surface.

## ***Adverse Events and Periodontal Disease During Pregnancy***

Pregnancy-related adverse events are stressful events for women and come at a high cost because of their consequences. One of the leading causes of death for children under the age of five, according to World Health Organization, is premature birth [36]. Pregnancy-related periodontal therapy has been recommended by certain observational studies in an effort to lower the risk of premature delivery and other negative outcomes.

### ***Preterm birth***

The pregnancy adverse event most commonly linked to periodontal illness is preterm delivery. Periodontal disease is also linked to low birth weight and hypertension [37]. Pregnancy outcomes, diabetes, chronic lung disease, and cardiovascular disease have all been linked to periodontitis [38]. Patients with periodontal disease may be more likely to experience an unfavourable pregnancy outcome since the condition is marked by a medium-low level of inflammation. A number of scholarly works have emphasized the direct correlation between periodontal disease and unfavourable pregnancy outcomes [39–45]. However, different clinical measurement techniques are used in these investigations, which produces inconsistent findings. As such, the contribution of periodontal disease to unfavourable pregnancy outcomes is still a subject for debate. The likelihood of periodontal disease getting worse during pregnancy is the sole known fact [13]. Periodontal disease has been positively associated with unfavourable pregnancy outcomes, such as preterm birth [46-48], early rupture of membranes [49], preeclampsia [50], abortion [51], and postpartum endometritis, according to certain observational studies conducted on humans.

### **The Association Between Periodontal Disease and Preeclampsia**

Two syndromes that cause high rates of death and morbidity are associated with preeclampsia [52]. The first is known as the maternal syndrome, which is characterized by oedema, proteinuria, activation of endothelial cells, abnormalities in blood volume, and problems in blood pressure management. Conversely, foetal syndrome is characterized mostly by a decrease in intrauterine growth [52-55]. Although the findings of several previous research [56-60] have generated debate, they have indicated a possible link between periodontal



disease and an elevated risk of preeclampsia. A meta-analysis of 15 published studies was conducted in 2013 by Scolastra et al. to determine the scientific evidence for a potential link between preeclampsia and periodontal disease. The analysis showed a positive correlation between the two pathologies, but the meta-analysis also indicated the need for more research because of the significant methodological quality issues and heterogeneity in the definition and diagnosis of periodontal disease. [52]

Wei et al. proposed the theory the same year [41] that the link might be a result of either the elevated inflammatory response during pregnancy or the preeclamptic condition's production of periodontal disease. Nevertheless, Huang et al. disproved the notion that periodontal therapy might have a role in decreased risk of preeclampsia.[61]

It is currently unclear how periodontal therapy works to prevent the unfavourable aspects of pregnancy. Typically, the primary goal of recommending a periodontal therapy is to reduce the amount of plaque and tartar to reduce inflammation and help avoid (or minimize) the breakdown of tissues, protect teeth and appearance, and reduce pain [62].

A comprehensive analysis of three interventional and nine observational research was conducted in 2003, promoted the theory that there may have been some evidence suggesting that periodontal issues & their negative effects during pregnancy might be reduced with treatment [63].

### ***Dental Diagnostics for Expectant Mothers***

- **The dentist's knowledge about pregnancy-related issues**

Despite the fact that science has shown that alterations and adjustments take place in the pregnancy, many dentists are hesitant to treat expectant patients' teeth. This is a consequence of not having enough knowledge, resulting in negative effects and aggravates dental issue, with potentially harmful effects on the mother and the child. Pontes Vieira et al.'s 2013 literature study gathered information from 4184 dentists, who were asked about treating expectant patients. What surfaced was that a significant portion of dentists lacked adequate knowledge on how to treat expectant mothers.[64]

In the Navarro et al. study, almost 46% of the dentists who took part did not advise using a vasoconstrictor in

addition to an analgesic. When it comes to the ideal timing for dental procedures, it is well recognized that it's the second trimester of time. But some dentists advise not to perform any kind of treatment while a woman is pregnant out of ignorance or fear [65-67].

- **Anamnesis (or Medical History)**

A vital component of the dental examination is the patient's medical history. Its significance is even higher among individuals with specific pathophysiological circumstances, including pregnancy. Although the physician must always presume that the patient is a woman with the ability to bear children, it's good if he asks the patient directly if she might be pregnant.

Medical ethics and forensic medicine are based on informed consent, which requires that the patient be fully informed about the risks, advantages, and available treatment options. It is always advised to get the patient's written informed permission for any invasive or surgical operations. Still, pregnancy does not require special consent [31].

- **Dental Clinical Examination**

Careful dental examination is required, with special attention to periodontal disease and carious lesions [68].

- **Instrumental diagnosis**

Radiographs are essential for the diagnosis and management of dental issues. Even when pregnant, they are regarded as safe [69,70]. The patient ought to be in extremely low radiation dosages, in order to reduce the possibility of any negative consequences. A panel of dental health specialists developed recommendations for radiography that the Food and Drug Administration (FDA) released [71]. These recommendations are still relevant today during pregnancy: The patient shouldn't get any more X-rays taken than is necessary; the operator ought to shield the patient from the woman's abdomen and neck, as well as employ the long cone method. In Article 10 of the Italian Ministry of Health's Legislative Decree 187/00 specifies in relation to ionizing radiation safety for pregnant women's health: the operator is necessary to determine whether the woman is pregnant and to take the true need and urgency into account during the radiography, particularly if the uterus will receive a radiation dose that is higher than 1 mSv [72]

Moreover, digital radiography is safe to use during pregnancy. Its benefits include lower radiation, the ability to produce images almost quickly without the use



of films or chemical processes, and the ability to print the images at a later time [31]. Dentists, however, ought to take consideration of the age of the foetus at gestation. When organogenesis occurs in the first trimester, the radiation susceptibility increases in foetuses. Doses regarded as secure throughout the second and third trimesters might cause harm in the initial trimester. However, large amounts of exposure to radiation (more than 0.5 Gy or 50 rad) should be avoided during pregnancy [73].

#### • **Pregnant Women's Dental Care**

Dental emergencies, severe pain, and infections require immediate attention from a dentist; treatment should not be delayed.

Regardless of the stage of pregnancy, the American Academy of Periodontology advises dental professionals to treat acute periodontal infections or infectious foci [74]. Caries treatment is advised to reduce the level of bacteria causing the disease. If the pregnant woman does not receive conservative treatment, her baby's risk of acquiring cariogenic bacteria increases because the mother transmits the bacteria to her child through saliva [75].

Research indicates that while nonsurgical periodontal therapy during the second trimester is safe, it does not lower the incidence of unfavourable pregnancy outcomes [76]. The primary purpose of periodontal therapy during pregnancy is to enhance the periodontal and general health of the pregnant woman. Most pregnant women with periodontal disease see improvements in their periodontal health with non-surgical periodontal therapy. Additionally deemed safe is the application of local anaesthetic [77]. Even while the aforementioned studies were conducted between weeks 13 and 23 of pregnancy, this does not imply that treatments administered earlier or later are not similarly safe.

It's important to keep in mind that experiences of anxiety and panic are amplified during pregnancy, which might exacerbate dental chair phobia and pain perception [78].

#### • **The Patient's Position**

During the third trimester of pregnancy, pregnant women may develop hypotensive supine syndrome. The vena cava, which transports blood to the heart, is pressed upon by the larger uterus while the patient is in the supine posture. Blood pressure drops sharply as a result of the foetus's pressure. The dentist should place the patient in a semi-reclined position to prevent light headedness and fainting. In order to reposition the uterus towards the

aorta, which does not collapse as quickly, the patient may be advised to move to the left side or to lay a cushion under their lower back on the right side [31].

#### • **Drugs Used During Pregnancy**

The Food and Drug Administration's (FDA) classification system expresses the possibility that medications used during pregnancy could cause birth abnormalities. Based on the cost/benefit ratio and the validity of the available scientific data, the FDA has categorized medications into five groups [79]:

**Category A:** Sufficient and carefully conducted research has not been able to show that there is a risk to the foetus during the first trimester of pregnancy, and there is no proof that there is a risk in subsequent trimesters either.

**Category B:** Pregnant women have not been the subject of sufficient, well-controlled research, and studies on animal reproduction have not shown a risk to the foetus.

**Category C:** Pregnant women may benefit from using the medication despite the dangers, as there are adequate and well-controlled trials in animals that have demonstrated a negative effect on the foetus.

**Category D:** Based on adverse reaction data from human trials or marketing experience, there is positive evidence of human foetus danger; yet, prospective advantages may merit usage of drug in pregnant women despite potential risks.

**Category X:** Pregnancy-related risks, adverse reaction data from clinical trials or marketing experience, and studies in people or animals that show foetal abnormalities and/or positive evidence of human foetal risk women overwhelmingly exceed any potential benefits.

Table 1: Some commonly used medications in dental setting considered safe during pregnancy [33]

Drugs	FDA category	Use in pregnancy	Use in nursing	Possible side effects
<b>Analgesics</b>				
Acetaminophen	B	Yes	Yes	Not reported
Aspirin	C	Not in 3 <sup>rd</sup> trimester	No	Postpartum hemorrhage
Ibuprofen	B	Not in 3 <sup>rd</sup> trimester	Yes	Delayed labour



Naproxen	B (Avoid high dose)	Not in 2nd ½ of pregnancy	Yes	Delayed labour
Codeine	C	With caution	Yes	Multiple birth defects
Oxycodone	B	With caution	With caution	Neonatal Respiratory Depression
Morphine	B	Yes	Yes	Respiratory Depression
<b>Antibiotics</b>				
Amoxicillin	B	Yes	Yes	Not reported
Metronidazole	B	Yes	Yes	Not reported
Erythromycin	B	Yes	Yes	Not reported
Penicillin V	B	Yes	Yes	Not reported
Cephalosporins	B	Yes	Yes	Not reported
Gentamycin	C	Yes	Yes	Fetal ototoxicity
Clindamycin	B	Yes	Yes	Not reported
Tetracycline	D	No	No	Maternal toxicity
<b>Local anaesthetics</b>				
Lidocaine	B	Yes	Yes	Not reported
Mepivacaine	C	With caution	Yes	Fetal bradycardia
Prilocaine	B	Yes	Yes	Not reported
Bupivacaine	C	With caution	Yes	Fetal bradycardia
<b>Sedative/hypnotics</b>				
Nitrous oxide	Not assigned	Not in 1 <sup>st</sup>	Yes	Spontaneous

		trimester		abortions
Barbiturate	D	Avoid	No	Neonatal Respiratory Depression
Benzodiazepines	D	No	No	Cleft lip/palate

- Antibiotics, antifungals, and antiseptics**

If there are continuing infectious pathogenic processes, antibacterial medications with broad safety indices can be given throughout pregnancy. At therapeutic dosages, beta-lactams like ampicillin, amoxicillin (not in combination with clavulanic acid), and some cephalosporins, as well as macrolides like erythromycin and clarithromycin, are deemed safe [80]. Instead, steer clear of gentamicin, which causes foetal ototoxicity, and tetracyclines like doxycycline and minocycline, which can harm a pregnant woman's liver and result in dyschromia in the baby's dental enamel. Regarding antifungals, clotrimazole and nystatin are okay, but it's best to remain out of fluconazole and ketoconazole because they're harmful to developing foetuses [81]. Many mouthwash brands contain chlorhexidine, an antibacterial active component, in quantities ranging from 0.05 to 0.2%. Since animal studies have not demonstrated teratogenicity at large dosages, it falls under FDA category B. However, as there are no controlled data from human pregnancies, its use in pregnancy is advised only in extreme circumstances. Furthermore, it is advised to stay away from all alcohol-containing items when pregnant [82].

- Analgesics**

Because acetylsalicylic acid increases the risk of postpartum haemorrhage, it is not advised. Giving paracetamol is the better course of action as it reduces irritation in the stomach. It is also advised to avoid using NSAIDs during the first few months of pregnancy since some authors have found that babies delivered to mothers who took NSAIDs such as ibuprofen, naproxen, and ketoprofen had a higher risk of septal heart abnormalities [83]. Category C now includes the newly developed family of cyclooxygenase inhibitors type 2 (rofecoxib and celecoxib). Additionally, these medications are to be avoided during the first trimester as they may result in the artery duct closure prematurely [84].



- **Local Anaesthetics**

Every local anaesthetic has the ability to pass through the placenta and may have an impact on the developing foetus. The toxicity of these medications can affect the nervous system and heart. The most common local anaesthetic used during pregnancy is lidocaine; a large amount of lidocaine circulates freely, meaning it is not associated with transport proteins, and as a result, a large amount of lidocaine is passed from the mother to the foetus. To lessen toxicity and extend the duration of lidocaine's action, vasoconstrictors like epinephrine are frequently administered. Because of the anaesthetic's delayed absorption caused by epinephrine-induced vasoconstriction, the blood's lidocaine level rises gradually and peaks less frequently. With a larger safety margin, the anaesthesia transfers to the foetus at the same rate of slowness. Using, lidocaine 2% in combination with epinephrine 1: 100,000 is thought to be relatively safe, as the anaesthetic has few effects on the developing foetus even at submaximal dosages [85].

Bupivacaine and mepivacaine are categorized as category C medications because several publications have reported foetal bradycardia as a result of their usage. Articaine, on the other hand, has not been the subject of any controlled research involving pregnant women [86]. A pregnant patient may receive up to five tubes of 1:100,000 epinephrine (or ten tubes of anaesthesia with a 1:200,000 epinephrine concentration) during a dental chair session [87].

- **Nitrous oxide inhalation sedation**

During labour, nitrous oxide, also referred to as nitrogen oxide, is frequently used to induce sedation and analgesia. Its utility in obstetrics originates from its ease of administration, low toxicity, inability to interfere with uterine contractions, and lack of malignant hyperthermia—a serious reaction brought on by exposure to several general anaesthesia. Furthermore, nitrous oxide and oxygen are routinely combined in dentistry. For individuals who are afraid or worried, it is safe and guarantees good sedation [88,89]. Pregnant women frequently experience increased anxiety. Nitrous oxide is the preferred sedative if the patient's anxiety is so severe that it hinders cooperation and iatro-sedation is insufficient to control the state of terror. As far as possible, prolonged exposure should be avoided.

Risks are significantly reduced by using aspiration and elimination equipment for ambient gases appropriately [90]. Long-term protoxide exposure has been linked to

reduced fertility; however, sedation during dental procedures is only used for a brief length of time and has no harmful or teratogenic effects [78]. No negative effects were reported for either the patient or the foetus in a retrospective investigation of almost 6000 pregnant women who underwent general anaesthesia, which was also achieved with the administration of nitrous oxide [91,92]. It is advised that professionals with the necessary training and qualifications deliver nitrous oxide [31].

- **Materials for Restoration**

Composite materials have replaced amalgam, which was once a popular restoration material. Unlike the organic mercury present in seafood, for example, the mercury found in amalgam fillings is inorganic. The inorganic mercury of amalgam restorations is continuously released in the oral cavity while chewing, particularly when chewing gum is chewed, and ends up in the bloodstream in cases of bruxism [93,94]. It is not advised to use hydrogen peroxide-based toothpastes or whitening products when pregnant because they can release inorganic mercury from amalgam fillings [95]. Inorganic mercury levels in the blood temporarily rise during amalgam repair/re-restoration and removal.[96].

After being inhaled, mercury vapours enter the lungs, where they might enter the bloodstream and cross the placenta to reach the developing foetus [97]. Inhaled vapours can be minimized by using a strong absorption system and a rubber dam. If safe dental procedure is not possible, it is advised to wait until the end of pregnancy to remove amalgam restorations. However, research indicates that neither amalgam restoration nor removal causes any negative side effects [31].

Alternative restoration materials to amalgam include porcelain, glass ionomers, composite resins, and gold. Polymerized resin and an inorganic filler combine to form composite resins. Recent research on methyl methacrylate monomers has demonstrated how the monomers are released into the oral cavity, penetrate the dentin, and may even reach the pulp. These monomers include methyl methacrylate (MMA), hydroxyethyl methacrylate (HEMA), tri ethylene glycol di methacrylate (TEGDMA), bisphenol-A (BPA), bisphenol-A glycidyl methacrylate (Bis-GMA), and bisphenol-A -di-methacrylate (Bis-DMA) [98,99]. BPA might not be a direct ingredient in resin composites or sealants, but it might be a result of salivary enzymes breaking down other monomers in the restorative materials. After, the dental sealants were applied, Joskow et al. found minute amounts of BPA in the saliva. There



was no evidence of a health risk during short-term exposure, although information about long-term impacts is scarce [100].

## • Dental Surgical procedures in pregnancy

Dentoalveolar surgery aimed at removing neoplasia, discomfort, and infection may be done in an emergency situation while a woman is pregnant. Incisions, drainage of dental infections, and tooth extractions are some of these operations. It is obvious that oral surgery should only be considered in extreme cases when a pregnant woman is unwell. Orthognathic surgery and orthodontic treatment are examples of aesthetic surgeries that need to wait till the postpartum phase. The safest time to perform dental care is during the second trimester [101-104].

It is possible to give local anaesthetic during oral surgical procedures. In order to prevent uterine artery vasoconstriction and decreased blood flow, the dentist should use safe anaesthetics (such lidocaine), avoid administering large quantities of adrenaline, and exercise extreme caution when administering the injection. The least number of radiographs should be taken, and safety gear must always be worn [105,106].

Approximately 2% of all malignant tumours during pregnancy are oral malignancies. The second trimester is the safest time for surgery. Because humoral and cell-mediated immunity are physiologically suppressed during pregnancy, there is a greater risk of postoperative infection. When scheduling oral surgery, the patient's obstetrician should be consulted beforehand by the dentist or oral surgeon [107-110].

## CONCLUSION

A new life's development and genesis are supported by a variety of physiological changes that occur throughout pregnancy, making it a special time. It is imperative that all expectant mothers receive medical and dental treatment during their pregnancy, as negligence can have detrimental effects on the health of the mother and the foetus. Dental professionals need to acquire a fundamental comprehension of the physiological changes that occurs in pregnancy, the factors associated with medication usage during gestation, and the ways in which these factors may influence the dental care. This knowledge helps in creating the treatment plan, providing the required medical, nutritional, and dental care, and equips the medical staff to counsel the expectant mothers.

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