Dental care in Pregnancy

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Abstract:

Management of a pregnant dental patient poses a unique challenge to the dentist, as her or she is solely responsible for providing safe and effective care to the mother and developing fetus. There are number of anatomical and physiological maternal changes during pregnancy. A sound knowledge of these changes will help the dental surgeons in careful management of the pregnant dental patients. Apart from these changes various complications of pregnancy may complicate the dental treatment.

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Introduction:

Pregnancy causes an array of complex physiologic changes in the female patient that must be appreciated by the dental health professional. Sound knowledge about fetal development is therefore important for management of pregnant dental patient. Pregnancy is divided into three trimesters based on a 42-week gestation, or three months (14 weeks) for each trimester.[1]

First Trimester: The duration of first trimester is first 12 weeks (84 days). The first 12 days from conception to implantation is the periimplantation period. Exposure to harmful drugs during periimplantation period can kill the embryo. From the 13th day there is organogenesis and the fetus is susceptible to abortion and teratogenecity.[2]

Second Trimester:

The duration of the second trimester is from 13 weeks to 28 weeks (112 days). It is the optimal trimester for dental care.

Third Trimester:

The duration of the 3rd trimester is from 29 weeks to 40 weeks (84 days). Elective dental care is usually not advisable during this period as the fetus is mature and there is an increased risk of supine hypotension, hypertension and preeclampsia. But emergency treatment can be provided with care.[2]

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Complications of pregnancy:

The dentist should be aware of the complications that can complicate the pregnancy, because any dental treatment may be looked upon as a causative factor for the complication especially abortion. Thus a detailed history prior to any dental treatment is of immense value as it rules out any complication.

Vomiting: Vomiting related to pregnancy:

1. Simple vomiting.
2. Hypereremesis gravidarum.

Hemorrhage: Hemorrhage related to pregnancy:

1. Miscarriage.
2. Ectopic pregnancy.

Anemia: Anemia in pregnancy may be due to:

1. Preexisting anemic state.
2. Decreased dietary intake.
3. Multiple pregnancies.
4. Increased demand for iron by the developing fetus.

Gestational Diabetes mellitus:

Gestational Diabetes mellitus is present in the late second and third trimester of pregnancy.

Hypertension: Hypertension may be due to:

1. Preexisting hypertension.
2. Preeclampsias.
3. Eclampsia.

Oral manifestation of pregnancy:

1. Pregnancy gingivitis
2. Pregnancy tumour.

Pregnancy gingivitis: The gingival in pregnancy is oedematous and characterized by marked tendency towards bleeding and histologically has no specific feature distinguishing it from normally inflamed gingival. The oedematous appearance of gingival is due to increased level of oestroegn and progesterone. Pregnancy gingivitis is more common in the anterior region.

Pregnancy tumour:

Pregnancy tumour is a clinical diagnosis for a red swelling on gingiva in pregnant women. It is usually single but may be multiple. Clinical onset of pregnancy tumour is around the second or third trimester. Histologically it is identical to pyogenic granuloma.[1]

Pharmacological consideration: Administration of drugs to pregnant patients is of significant concern because of the teratogenic, toxic or otherwise harmful effects of drugs on the developing fetus. The placenta does not strictly constitute a barrier and any drug can cross it to a greater or lesser extent. Teratogenicity refers to a capacity of a drug to cause fetal abnormalities when administered to the pregnant mother.[3]

FDA risk categories:

The Food and Drugs Administration has classified drugs with respect to their toxic potential during pregnancy. Drugs in categories D, X and in some cases C may similar risk. The categories are determined by the reliability of documentation and the risk to benefit ratio.

FDA risk categories:[3,4,5]

Category A

Adequate and well-controlled studies have failed to demonstrate a risk to the fetus in the first trimester of pregnancy (and there is no evidence of risk in later trimesters).

Category B

Animal reproduction studies have failed to demonstrate a risk to the fetus and there are no adequate and well-controlled studies in pregnant women.

Category C

Animal reproduction studies have shown an adverse effect on the fetus and there are no adequate and well-controlled studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks.

Category D

There is positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience or studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks.

Category X

Studies in animals or humans have demonstrated fetal abnormalities and/or there is positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience, and the risks involved in use of the drug in pregnant women clearly outweigh potential benefits.

Drug considerations in pregnant patients:[6]

Maternal medication	Category in 1st trimester	Category in 2nd trimester	Category in 3rd trimester
LignocaineMepivacaine	B	B	B
Aspirin	C	C	D
Celecoxib	C	C	D
Diclofenac Sodium	B	B	D
Ibuprofen	B	B	D
Mefenamic acid	C	C	D
Paracetamol	B	B	B
Acyclovir	B	B	B
Amoxycillin	B	B	B
Ampicillin	B	B	B
Cefazolin	B	B	B
Cefotaxime	B	B	B
Chloramphenicol	C	C	C
Clindamycin	B	B	B
Cloxacillin	B	B	B
Cotrimoxazole	C	C	D
Erythromycin	B	B	B
Cefalaxin	B	B	B
Ketoconazole	C	C	C
Metronidazole	B	B	B
Tetracycline	D	D	D
Betamethasone	D	C	C
Dexamethasone	D	C	C
Prednisolone	D	C	C
Triamcinolone	D	C	C
Clonazepam	D	D	D
Diazepam	D	D	D
Lorazepam	D	D	D
Chlorpheniramin Maleate	B	B	B
Carbamazepine	D	D	D

Dental management:[7]

The main objective is to protect the developing fetus and the expecting mother and the important points to consider in management of pregnant dental patients are:

1. A written opinion from the concerned gynecologist is to be taken in case of elective treatment.
2. A detailed case history should be taken, which include history of previous pregnancy and complications if any.
3. The approach of the dentist in management of a pregnant dental patient should be conservative.
4. The importance of maintaining sound oral hygiene must be stressed. Dietary advice should be given.
5. Elective dental treatment can be provided preferably in the second trimester.

6. Emergency treatment can be provided throughout the pregnancy period.
7. The duration of each dental visit should be kept as short as possible.
8. In order to prevent supine hypotension during third trimester the patient should be in a sitting position rather than lying down.
9. Radiographs are better avoided; if extremely necessary can be taken with strict radiation safety measures (eg. Lead apron, thyroid collar, high speed films, digital radiography).
10. During prescription of drugs FDA risk category should be considered.

Conclusion:

The dental health practitioner should feel comfortable in knowing that the treatment of pregnant patients is not only permitted, but actually is necessary in order to promote sound oral health. The purpose of this article is not to create treatment algorithms, but rather to suggest that the treatment administered must be individualized to each patient.

However, if the principles set forth here are applied in good judgment, then the treatment of pregnant dental patients can be administered in a both safe and effective manner.

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