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Periodontitis in Pregnancy

Implications of periodontal disease on pregnancy outcomes

Understanding periodontal disease

Periodontal disease is characterised by the inflammation and destruction of structures that support our teeth and gums due to infection by microbes

6th most prevalent non-communicable disease

Severe periodontitis affects about **750 million** across the world

Signs and symptoms of periodontitis

- Red, swollen, tender, and bleeding gums
- Persistent foul taste and halitosis
- Pain on chewing
- Increasing spaces between teeth
- Teeth that appear elongated
- Loose or mobile teeth

If ignored, periodontal disease could lead to tooth loss as well

Understanding the link between periodontal disease and pregnancy

Although periodontal disease is very prevalent, it often goes ignored

Studies demonstrate a potential link between periodontal disease and adverse pregnancy outcomes, but there is limited public awareness of this association

While over 70% of pregnant women regularly visit the dental practitioner, periodontitis is nevertheless common in over 30% of this population

There could be some barriers to the utilisation of dental services during pregnancy, like:

- Lack of awareness on the effect of periodontitis on other systemic conditions like pregnancy
- Inadequate dental insurance or economic difficulty
- Lack of access to proper dental care in underdeveloped countries
- Prevalent myths
- Concerns for foetal safety

However, due to hormonal changes, pregnant women are more at risk of developing gingival diseases

European studies have reported:

Gingivitis, which is the precursor of periodontal disease, in 64% of pregnant women — 64%

Periodontitis in 12% of pregnant women — 12%

Presence of periodontal disease during pregnancy is a risk factor for adverse pregnancy outcomes like:

- Pre-eclampsia (a pregnancy complication characterised by high blood pressure and protein in the urine of the mother)
- Intrauterine growth retardation
- Miscarriage
- Pre-term delivery
- Pre-term premature rupture of membranes

Hence, addressing periodontal disease prior to pregnancy is important

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How does periodontal disease negatively affect pregnancy?

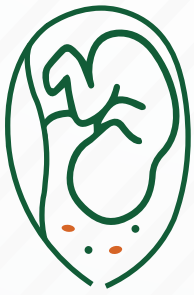
Two major pathways of action have been proposed to explain how periodontal disease might propagate adverse pregnancy outcomes

1. Direct mechanisms

Periodontal diseases are linked to multiple pathogens, which can enter the bloodstream and further:

- **Cause septicaemia in the mother**
- **Cross the placental barrier and affect the foetus as well**

The periodontal disease, hence, acts as a "focus of infection"



- Bacteria
- Inflammatory mediators

The periodontal pathogens associated with pregnancy are:

P. nigrescens
T. denticola
T. forsythia
P. intermedia
F. nucleatum
P. gingivalis

These highly invasive bacteria could cause:

- Preterm births
- Acute intrauterine infection
- Miscarriage

2. Indirect mechanisms

This is due to the release of inflammatory mediators like:

- Bacterial antigens
- Endotoxins
- Proinflammatory cytokines

Which may then:

Enter the mother's circulation and increase systemic inflammation

Prior to delivery, a pregnant woman's body undergoes physiological hormonal changes, involving the release of proinflammatory cytokines like the interleukins IL-6, IL-8, and IL-1β

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Prostaglandin production in the uterus ← Periodontal disease causes localised infiltration of inflammatory cells, which secrete proinflammatory cytokines, further released into systemic circulation

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Causes contractions, inducing labour

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Apart from periodontal diseases, pregnant women are also more predisposed to develop the following oral conditions:

- Dental caries and decay—due to increased exposure to gastric acid
- Pregnancy tumours of the gums and gum inflammation—due to hormonal fluctuations

Therefore, pregnant women should be advised to take certain precautions in order to maintain their oral health and avoid oral infections

- Dental procedures can most safely be carried out in the second trimester of pregnancy, after complete foetal organogenesis
- However, urgent dental care can be performed at any time
- Professional cleaning, including scaling and root planing, is a safe and effective way to control periodontal disease and can be carried out in pregnant women
- Routine restorations are also safe
  Avoid amalgam restorations and check for metal allergies prior to fitting crowns
- While radiography is generally avoided in pregnant women, it can be carried out if extremely necessary

Medications safe to administer during pregnancy

Drug class	Drug name	Safety in pregnant women
Local anaesthetics alone	Lidocaine Prilocaine	Safe to administer under constant monitoring
Local anaesthetics with vasoconstrictor	Lidocaine/Prilocaine + Epinephrine	Weigh pros and cons before administering; better to avoid epinephrine
Conscious sedatives	Nitrous oxide Benzodiazepines	Avoid Absolutely avoid
Antibiotics	Penicillin Amoxicillin Cephalexin Metronidazole	Safe to administer if needed
	Erythromycin base Clindamycin	Safe; administer to women allergic to penicillin
Painkillers	Acetaminophen (Paracetamol)	Safe
	Ibuprofen Oxycodone	Safe only in the first two trimesters, absolutely avoid in the third trimester

How do we manage oral infections in pregnant women?

Recommendations for oral healthcare practitioners:

- Educate your patients on the importance of oral hygiene maintenance and the oral changes associated with pregnancy
- Delay excision of pregnancy tumours/ epulides on the gums until after childbirth
- Encourage regular follow-ups
- Carefully screen women of childbearing age for oral infection so that any disease can be successfully treated before pregnancy
- Collaborate with gynaecologists while treating pregnant women

Precautions to be taken while treating pregnant women:

- Closely monitor any medications and try to use the minimum required dose
- If radiographs are necessary, try to limit exposure by using high-speed films, thyroid collars, and lead aprons
- While treating women in their third trimester, be mindful of positional discomfort and compression of the vena cava; the ideal position to treat a pregnant patient is in the left lateral decubitus position

Recommendations for other healthcare practitioners:

- Ask for any prior dental history or current signs and symptoms of dental disease
- Ensure your patient visits the dental practitioner frequently
- Educate your patient on the benefit of regular dental follow-ups
- For patients who are trying to get pregnant, advise an oral check-up prior to conception

Recommendations for pregnant women:

- Maintain oral hygiene:
  - Brush twice a day with a manual or powered toothbrush and stannous fluoride toothpaste
  - Supplement brushing with flossing or the use of interdental brushes
  - Use an antibacterial mouthwash with topical antibacterial agents, like chlorhexidine (use should be restricted to 1–2 weeks)
- Routinely conduct a self-examination for any signs of oral disease
- If you experience morning sickness or gastric reflux, rinsing with some baking soda mixed in water can help neutralise the acid after vomiting episodes
- Try to have alkaline foods and drinks
- Regularly visit your dental practitioner and be screened for oral infections

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