Management of Perinatal and Infant Oral Health

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Abstract
Mothers in the perinatal stage and infants should be identified and evaluated for the risk of dental caries. Early childhood caries can lead to detrimental consequences in the primary dentition. This entails that oral health care advice regarding oral hygiene, diet, fluoride and dental management be provided to minimize the risk factors and optimize the protective factors to improve the long-term oral health outcomes for both the mother and her infant.

Keywords: Perinatal Oral Health; Infant Oral Health; Early Childhood Caries

Introduction
The perinatal period is vital for the holistic well-being of pregnant women. It is defined as a time span which commences when the 20th to 28th week of gestation is completed and ends at 1 to 4 weeks subsequent to birth of a child [1]. Early childhood caries (ECC) and severe form of ECC (s-ECC) start as soon as teeth start to erupt, develop on every surface of a primary tooth, have a rapid progression with a long-term detrimental impact on the primary dentition [2]. The long term sequelae of ECC include a greater risk of new carious lesions in both the primary and permanent dentitions, [3,4] high cost of treatment, [5] hospital stay and emergency room visits [6,7] loss of school time, [8] diminished cognitive ability [9] and a poor oral health-related quality of life [10]. Hence the oral health of both the mother and the future child are instrumental in preventing and arresting the disease process to manage early childhood caries during this phase [11].

Epidemiology
This chronic, infectious disease affects the general population however it is 32 times more likely to occur in infants from low socioeconomic status, with high sugar diet and whose mothers have a low education level [12-14]. It affects 1-17% children in developed and 70% children in under-developed countries [15]. Epidemiologic evidence shows that the highest prevalence of ECC is reported from Africa and South-East Asia [16]. The prevalence of ECC among Indian children between 8-48 months is 44% [17]. A study from Sri Lanka reports an incidence of 23% ECC among 1-2-year old's [18]. North American prevalence of ECC ranges from 11-72% and over 28% children have caries by the time they reach kindergarten [19,20]. Pakistan has a variation in prevalence of ECC ranging 27.9% - 51% [21,22].

Anticipatory Guidance According to Caries Risk
New mothers and infants are seen by the medical health care professionals earlier and more often than dentists. It is therefore important that they understand the dynamic multifactorial etiology and risk factors for ECC prevention counselling in pregnant women/caregivers and encouraging a dental home visit at age 1 [23]. In some instances, pregnant women may defer dental care, experience unwillingness of dentists to provide oral care [24-27] or may be unaware of the implications of poor oral health for their pregnancy [28,29]. Hence early identification of mothers with poor oral health/high caries risk and timely delivery of educational information and prevention for themselves and their unborn child can help reduce the incidence of ECC, prevent the need for dental rehabilitation and improve their oral health [30-32]. Caries-risk assessment for infants allows the determination of relative risk for dental disease to prevent disease by identifying and minimizing risk factors (plaque accumulation, diet, lack of topical/systemic fluoride, high frequency of sugar containing medicines) and optimizing protective factors (oral hygiene practices, fluoride and...
fissure sealants) when the primary dentition starts to erupt [33]. The current trend shows more emphasis on prevention and arrest of the disease processes to manage ECC. This is attributed to the costly and high-risk restorative treatment for ECC since it often entails the use of sedation and/or general anesthesia and a high recurrence rate [34,35]. The chronic disease management approach encompasses engagement of parents to facilitate preventive measures and temporary restorations of the lesion to defer advanced restorative care [36]. An active surveillance methodology entails monitoring caries progression in children and setting up prevention programs for managing incipient carious lesions [37]. An Interim therapeutic restorations (ITR) is a form of temporary tooth restoration in young children until compliance improves and conventional cavity preparation and restoration is possible [38].

**Oral Health Care Advice to Pregnant or Lactating Mothers**

Physicians, dentists, and nurses impart educational advice for mothers during the perinatal period. The preventive advice should include timely brushing with fluoridated toothpastes and use of sugar free gums. The dietary advice should address the quality and quantity of nutritional food along with food cravings that may raise the caries risk. Dental procedures which are considered safe during all trimesters of pregnancy include oral assessment, prophylaxis, local anaesthetic, regular treatment and radiographs with shielding (optimal in second trimester). If, however there is discomfort the elective treatment may be deferred. Breast feeding of infants should be tailored with food over a year or longer but should not be ad libitum. It provides nutritional, developmental and psychological health advantages with a significant decrease in the risk for acute and chronic diseases. It may also transfer maternal medication to infants under 6 months hence use cautiously. It provides awareness of health consequences of tobacco use and exposure to secondhand smoke in children [39-43].

**Oral Health Care Advice for Infants**

An infant should be taken for an initial evaluation to a dental home by the age of one by the pediatricians and the general practitioners. This attains the medical and dental history of both the child and parents, allows oral assessment with a demonstration on age appropriate gum and tooth cleaning, brushing the teeth twice a day with an optimum level of fluoridated toothpaste (smear or rice sized for children under 3), dietary advice (avoid sugar by bottle, sippy cup, sugar between meals, 4-6 ounces of 100% fruit juice per day for 4-6 year old children, systemically administered fluoride (if the drinking water is unfluoridated) and professional fluoride application if caries risk is high, injury prevention advice for facial trauma (objects, cords, pacifiers, car seats, electric cords), advice on teething with excessive salivation areas of intermittent discomfort (oral analgesics, chilled teething rings, over the counter teething gels), management of atypical frenum attachments (frenectomy or frenuloplasty to facilitate breast feeding) and counselling regarding non-nutritive habits such as digit or pacifier sucking, abnormal tongue thrust or bruxism (wean before skeletal dysplasia or malocclusion) [33,44,45].

**Conclusion**

It is very important to design and implement caries assessment in order to identify the caries risk for infants and expectant mothers/lactating mothers. This will allow effective education on oral health via motivational interviewing techniques to help improve oral behaviour and timely implementation of caries preventive measures to help change the trajectory of oral health of a mother and her infant.

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