

Early Childhood Caries: A Review

Introduction:

Early childhood caries (ECC), formerly known as baby bottle teeth decay and nursing bottle caries, is still a serious chronic condition that affects children and is a public health concern. ECC is defined as “the presence of one or more decayed (noncavitated or cavitated lesions), missing (due to caries), or filled tooth surfaces in any primary tooth” in a child under the age of six. Severe Early Childhood Caries (S-ECC) can be defined as “1) any sign of smooth-surface caries in a child younger than three years of age, 2) from ages three through five, one or more cavitated, missing (due to caries), or filled smooth surfaces in primary maxillary anterior teeth, or 3) a decayed, missing, or filled score of greater than or equal to four at the age of three, greater than or equal to five at the age of four, or greater than or equal to six at the age of five.”¹

ECC is a multifactorial disease caused by the interaction of dietary sugars, oral bacteria, and susceptible tooth surfaces. It is one of the most common chronic diseases in childhood and can have significant impacts on the child's health, development, and quality of life. The global prevalence of ECC is 48%² while its prevalence in Indian population varies from 16% to 92.2%.³

Etiology and Risk Factors⁴ The primary etiological factor for ECC is the prolonged exposure of teeth to fermentable carbohydrates, which are metabolized by oral bacteria, primarily *Streptococcus mutans*, to produce acids that demineralize tooth enamel. Key risk factors for ECC include:

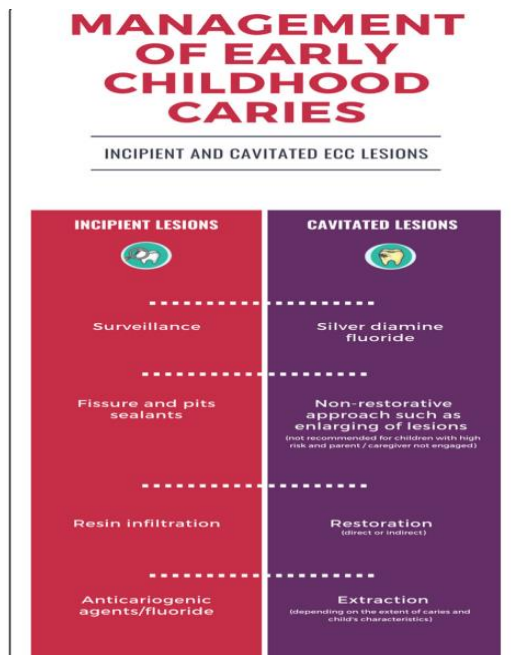
1. Early colonization of mutans streptococci
2. Lack of oral hygiene routines
3. Sugars in drinks, milk and infant formulas at bedtime or during naptime
4. High frequency of sugar consumption from drinks and solid food
5. Nursing bottles, pacifiers and sucking habits
6. Prolonged feeding pattern
7. Low salivary flow at night
8. Socioeconomic status

Clinical Presentation:⁴ ECC typically begins on the maxillary anterior teeth and progresses to affect the molars. Early stages of ECC are characterized by white spot lesions on the enamel, which

can progress to cavitation if not addressed. As the disease advances, teeth may become discolored, fractured, or even lost, leading to pain and difficulty in eating and speaking.

Management ⁵: The decision to treat the ECC should be based on individual (such as risk assessment) and family. Depending on the disease course and the patient's caries risk, several procedures ranging from active surveillance to extraction were recommended for the management of ECC lesions. It is a well-established fact that while making clinical decisions about the management of caries in children, consideration should be given to the patient's age, risk assessment, and the caregivers' involvement in preventative measures (fig 1).

Figure 1⁵: Management of ECC



Conclusion: Early Childhood Caries is a preventable disease that requires early intervention and comprehensive management. Public health initiatives and educational programs aimed at caregivers and healthcare providers are essential in reducing the prevalence of ECC. By promoting preventive measures and early treatment, the oral health and overall well-being of children can be significantly improved.

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