Policy on Early Childhood Caries: Unique Challenges and Management Considerations

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Purpose

The American Academy of Pediatric Dentistry (**AAPD**), to promote appropriate, quality oral health care for infants and children with early childhood caries (**ECC**), addresses the unique challenges and management of this disease, including the need for advanced preventive, restorative, and behavioral guidance techniques.

Methods

This policy was developed by the Council on Clinical Affairs, adopted in 2000,[1] and last revised in 2021.[2] An electronic search of articles in the dental and medical literature in English within the last 10 years was conducted using the PubMed/MEDLINE database with the following search terms: (*evidence based dentistry* [**Majr**] *OR pediatric dentistry* [Majr] *OR dental care for children* [Majr]) *AND (dental caries* [Majr] *OR dental caries susceptibility* [Majr] *OR early childhood caries* [**Tiab**] *OR infant oral health* [Tiab] *OR oral microbiome* [Tiab] *OR ECC prevention* [Tiab] OR *patient well-being* [Tiab] OR *nutrition* [Tiab] OR *quality of life* [Majr] OR *ECC* [Tiab]). Two hundred forty-seven articles met the defined criteria, and 36 articles were selected for review from this search and from references within the selected papers. When information from these articles did not appear sufficient or was inconclusive, expert and/or consensus opinions by experienced researchers and clinicians were considered.

Background

Epidemiologic data from a 2013-2018 national health survey clearly indicate that ECC remains highly prevalent in poor and near poor United States preschool children.[3] For the overall population of preschool children, the prevalence of ECC, as measured by decayed and filled tooth surfaces (dfs), is unchanged from previous surveys.[3] However, the proportion of children with severe ECC (S-ECC) increased significantly.[3] The consequences of ECC include a higher risk of new caries lesions in both the primary and permanent dentitions,[4-6] hospitalizations and emergency room visits,[7] high treatment costs,[8] loss of school days,[9] diminished ability to learn,[9] nutritional deficiencies,[10-13] and reduced[14-16] oral health-related quality of life.

Due to the added costs and potential health risks of sedation and general anesthesia,[17-19] which often is required to enable provision of restorative and surgical care for young children, as well as the high recurrence of lesions following these procedures,[20] strategies to prevent and arrest the disease process[21] have come into greater focus. This includes utilizing methods referred to as chronic disease management in combination with 1) active surveillance and 2) minimal intervention.

Chronic disease management involves actively engaging parents to facilitate and promote preventive measures, including the identification and reduction of individual risk factors to sustain oral health in the long term.[22,23] Active surveillance refers to careful monitoring of caries progression and implementation of prevention programs (eg, more frequent recalls and fluoride varnish applications) in children with incipient lesions.[24,25] Minimal intervention approaches include caries arrest with silver diammine fluoride (SDF),[26,27] sealants,[28] and interim therapeutic restorations (ITR)[29] that temporarily restore teeth in young children until a time when traditional cavity preparation and restoration is possible, as well as the use of Hall-technique[30] for crown placement.

Children with known risk factors for ECC benefit from care provided by oral health professionals with the training and expertise to manage both the child and the disease process. The use of anticariogenic agents, especially twice daily brushing with fluoridated toothpaste[31] and the frequent application of fluoride varnish, may reduce the risk of development and progression of caries. In some children for whom preventive programs fail to halt the caries disease process, areas of demineralization and hypoplasia can rapidly develop into cavitations. If left untreated, caries lesions can invade the dental pulp, leading to infection and possibly life-threatening complications involving fascial spaces. Such infections may result in a medical emergency requiring hospitalization, antibiotics, and extraction of the offending tooth.[32] The extent of the disease process as well as the patient's age, cognitive development, and level of comprehension affect the practitioner's management decisions. The establishment of a dental home[33] when the first tooth erupts is imperative to implement primary prevention and early intervention before advanced disease becomes established. For cases of severe ECC, the child may benefit from advanced

ABBREVIATIONS

AAPD: American Academy of Pediatric Dentistry. **ECC:** Early childhood caries. **Majr:** Medical subject heading major topic. **Tiab:** Title and abstract.

behavior guidance techniques[34] (ie, sedation, general anesthesia) if unable to cooperate for extensive treatment. In such situations, stainless steel crowns often are indicated to restore teeth with large or interproximal caries lesions and extensive white spot lesions since stainless steel crowns are less likely than other restorations to require retreatment.[35]

Policy statement

The AAPD recognizes the unique and often virulent nature of ECC and the value of preventive care and interventions to halt disease progression. The AAPD encourages nondental health care providers who identify a child as having ECC or risk factors for the disease to refer the patient to a dentist for treatment and establishment of a dental home. Timely intervention is indicated and includes nonsurgical interventions that may reduce or postpone the need for sedation or general anesthesia. Because children who experience ECC are at greater risk for subsequent caries development, the AAPD encourages preventive measures (eg, dietary counseling, reinforcement of toothbrushing with fluoridated toothpaste, sealants on primary molars), more frequent professional visits with applications of topical fluoride, and minimally invasive and restorative care (as necessary) for this vulnerable population.

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