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Designed by: Hind Alabbadi

**Early Childhood Caries (ECC)**

**Note:** The lecture was about 12 minutes ONLY.

**-Early Childhood Caries (ECC)** by definition of the American Academy of Pediatric Dentistry (AAPD): the presence of one or more decayed (noncavitated or cavitated lesions), or filled tooth surfaces in any primary tooth in a child 71 months of age or younger (under the age of 6 years).

**-Severe Early Childhood Caries (S-ECC):** any sign of smoothsurface caries in children less than 3 years of age.

Early Childhood Caries was also known as **Baby Bottle Caries**, because they believed that caries is caused by milk or juice in the bottles. This is wrong because (ECC) is multifactorial.

\*(ECC) starts with white opaque spots in the labial surface of the upper incisors. It is little noticed by parents or physicians.  
Then cavitation will occur, followed by chipping away of teeth and before long the actual fracture at tooth at gum line (breakdown). This exposes the hard tissues allowing it to become necrotic which might lead to spreading of infection.

This pattern affects mainly maxillary anterior teeth, maxillary and mandibular D’s and sometimes the C’s. Lower anteriors are usually spared, because they are protected by tongue and the saliva pooling.

As we know, caries is produced from the interaction of 3 variables: 1- Cariogenic microorganism 2- Fermentable carbohydrates 3- Teeth.

But infants do not have bacteria in their mouth at birth. They usually have it after birth from the environment. The most found strain of bacteria in the infant’s mouth is the same that is found in their mothers, it is usually transmitted by kissing and food.  
So, the major reservoir from which infants acquire Mutans Streptococci (MS) is their mother’s saliva. And the earliest they get the microorganism, the most severe is the (ECC) as the severity is directly related to the early establishment of Mutans Streptococci (MS) in the infant.

Also, the success of the transmission and the resultant colonization of maternal (MS) depend largely on the magnitude of the inoculum. This means that if the mother has cavities, then she will have high amount of (MS) and she will transmit it to her child. Here we can control and stop (ECC) by controlling maternal caries as suppressing of maternal reservoir of (MS) via dental rehabilitation and antimicrobial treatments can prevent or delay infant inoculation.

The frequent and prolonged contact of fermentable carbohydrates (Glucose, Fructose, Sucrose...) with teeth would increase the risk of dental caries.

Again, drinking from a bottle at night (milk, juice) is one of the causes of (ECC), because there will be pooling around the teeth and low salivary flow at night 🡪 High tendency for caries.

Infants can only drink formulated milk or breast milk; they cannot drink cow’s milk.  
The problem with the formulated milk that it is all cariogenic even without adding sugar.  
Studies show that cow’s milk does not produce caries. However, it is not recommended before the FIRST year of life.

-What we recommend during the first year is breastfeeding; because it provides general health, nutritional development, psychological, social, economic, and environmental advantages. Plus decreasing a large number of acute and chronic diseases.

\*Human milk is more cariogenic than cow’s milk.  
\*Cariogenicity: Infant formula milk > human milk > Cow’s milk.

-Breast milk is swallowed immediately, touching the soft palate without pooling around teeth. Not like the bottles. Also, it has buffering capacity to protect teeth 🡪 breastfeeding is not directly associated with (ECC).

Exclusive breastfeeding should be encouraged up to 6 months of life and maintained to the second year of life. At 6 months they can start eating solid food.

(ECC) is found in low socioeconomic class, patients with malnutrition, poor oral hygiene, poor diet, and those under emotional stress.

\*What are the consequences of (ECC)?  
-Unhappy child, hospitalization, increased treatment cost and time, insufficient physical development (they are not eating well), loss of school days and increased days with restricted activity, and diminished ability to learn.  
They found that if we treated these patients, they will still have higher risk of new carious lesions in both primary and permanent dentitions.

\*Prevention:  
-Infants should not be put to sleep with a bottle containing fermentable carbohydrates.  
-Gradual dilution of milk.  
-Try to reduce on demand nocturnal breastfeeding.  
-Parents should be encouraged to have infants drink from a cup as they approach their first birthday. Infants should be weaned from the bottle at 12-14 months of age.  
-No-spill cup should be avoided.  
-Oral Hygiene methods should be implemented no later than the time of eruption of the first primary tooth.

-First visit to the dentist should be no later than 12 months of age.  
-Not to share spoons and toothbrushes between mother and infant.  
-Reducing the mother’s (MS) levels to decrease transmission of cariogenic bacteria.

\*Treatment:

1) For decalcifications: Duraphat or Fluoride varnish to be applied twice a year. It has significant reduction in caries incidence.

2) Cavitation: ITR/ Glass Ionomer.  
Later on we will need more aggressive therapy (SSC, extractions…) and most of the time under GA.

-Good Luck.