Early childhood caries and infant care
Outline

• Introduction
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• Predisposing factors
• Infant care
• Conclusion
Introduction

• By 2004 the concept of ECC was clear following clarification by the CDC. ECC was defined as rampant caries in preschool children.

• In 2007, the American Academy of Paediatric Dentists refined this definition as the presence of caries in children 71 months and younger.

• This definition has become universally adopted and used in many literatures.
Early Childhood Caries is defined as the presence of one or more decayed (non-cavitated or cavitated lesions), missing (due to caries) or filled tooth surfaces in any primary tooth in a preschool-age child between birth and 71 months of age.
Definition

• Severe Early Childhood Caries refers to "atypical" or "progressive" or "acute" or "rampant" patterns of dental caries.
Severe ECC

• Any sign of smooth surface caries in children younger than 3 years of age is S-ECC.
• When there is one or more decayed, missing or filled smooth surface caries in primary maxillary anterior teeth in children 3-5 years old.
• When there is one or more decayed, missing or filled tooth greater or equal to 4 (for 3 yrs), or in 5 (for 4 yrs) or in 6 (for 5 yrs) surfaces.
Aetiological factors

- Cariogenic *mutans Steptococci* have been implicated in its aetiology.
- Even very low levels of these cariogenic bacteria are associated with ECC.
- This organism is acquired from the mother at about 19 to 31 months of age and may be as early as 11 months in severe ECC.
Prevalence in Western countries

- 28% of all children 2yrs to 5yrs in the U.S.
- 32% of 3yr old children in Manchester, UK.
- 52% - 74% of 3-5yr old children in Canada.
- 66.2% of 3yr old Polish children.
- 19.9% of 3 years and 52% of 5 years in Oslo, Norway.
Prevalence in Asia

- 2.8% 18mth old and 25.9% 3yr old children in Japan.
- 44% of children 8 to 48 months in India.
- 56.5% of children 6month-59months in Seoul, Korea.
- 56% of children < 6 years from Taiwan.
- 59% - 94% in children 2 years – 5 years in Philippines.
- 2.0% for 9months old, 22.8% for 12 months old, and 68.1% among 18-month olds children in Thai.
Prevalence in Middle East

- 36% to 94% of 2yrs to 5yr old children in Abu Dhabi.
- 48% of children 1yr to 5yrs in Jordan.
- 73% of children 2years – 5 years in Saudi Arabia.
Prevalence in Africa

- 56% and 64% of children 3-5 years old in Nakawa and Kampala, Uganda.
- 38% of 3yr olds, 50% of 5yr olds in Nairobi, Kenya.
- 5.5% - 10.9% of children 6mths - 71 months in Nigeria.
- Prevalence in Ile-Ife for children 71 months and less is 6.6%
## Prevalence in Ile-Ife

<table>
<thead>
<tr>
<th>Age</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 year old</td>
<td>1.6%</td>
</tr>
<tr>
<td>2 years old</td>
<td>2.1%</td>
</tr>
<tr>
<td>3 years old</td>
<td>8.2%</td>
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<tr>
<td>4 years old</td>
<td>12.7%</td>
</tr>
<tr>
<td>5 years old</td>
<td>6.6%</td>
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</tbody>
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Epidemiology

• The dmft ranged from 0-8 with the mean dmft was 0.15 in the study conducted in Ile-Ife.
• The dmft is higher in children in rural than in urban Nigeria.
Predisposing factors

• The proportion of children with caries increased significantly with increasing age.

• In Ile-Ife, the proportion of children with ECC increased till age four years.
Predisposing factors

• Globally, children from the low socioeconomic strata are more disproportionately affected by ECC. It is almost regarded as a disease of poverty.

• In Ile-Ife and Lagos, there was no significant difference in the proportion of children with ECC by SES.
Predisposing factors

• In Ile-Ife, more males than females had ECC. The proportion of males with ECC is higher than the proportion of females without ECC.

• No gender difference was noticed in the prevalence of ECC in Lagos State, Nigeria.

Predisposing factors

• Mothers with high *mutans Steptococci* transmit this to children. For this reason, ECC is considered an ‘infectious disease’ by some persons.

• In Ile-Ife, more children with mothers who had good oral health knowledge were free of ECC when compared with children who had mothers with poor oral health knowledge.

*Folayan et al, 2015*
Predisposing factors

• The maternal age at childbirth, the birth rank, and family size were not significantly associated with presence or absence of ECC in Ile-Ife.

• Twice daily tooth brushing and use of fluoridated toothpaste were not significantly associated with presence or absence of ECC in Ile-Ife.

• Consumption of sugary snacks between meals three times a day or more is a significant ECC risk factor.

Folayan et al, 2015
Predictors of ECC in Nigeria

• In Lagos, the odds of having smooth surface caries in preschool children increased almost 4 fold with every score increase in oral hygiene index.

• In the study in Ile-Ife, oral hygiene was a predictive factor for ECC with children with fair oral hygiene more likely to have ECC than those with good oral hygiene.

Predictors of ECC in Nigeria - 2

- Infant feeding practice associated with ECC include night feeding, prolonged bottle feeding, prolonged breastfeeding.
Predictors of ECC in Nigeria - 3

• ECC would result more from prolong breastfeeding in children from rural areas in Lagos State. The risk of ECC increases by 10% with every month increase in the duration of breastfeeding.

• Prolonged breastfeeding was not an identified risk factor for ECC in Ile-Ife.

Folayan et al, 2010; Folayan et al, 2012; Folayan et al, 2015
Predictors of ECC in Nigeria - 4

• ECC will result more from night feeding in children from urban areas in Lagos State. The risk of ECC is 6 times higher in the presence of night feeding.

• Night feeding was not a predictive factor for ECC for children in Ile-Ife.

Clinical presentation

• The lesion characteristically affects the primary maxillary incisors first followed by the primary molars.
• The mandibular incisors are often spared due to the protective effect of the tongue in the suckling position.
• The pooling of saliva around the mandibular incisors have also been alluded to produce protective effects.
Prevention of ECC - 1

- Maternal oral health care during pregnancy important. Efforts to be made to treat all carious lesions of mothers during pregnancy.
- Eliminate saliva-sharing activities including sharing of feeding utensils in day-care, schools and between siblings.
Prevention of ECC - 2

- Children with high risk for ECC needs to visit dental clinic every 3 months for topical fluoride therapy and follow up.
- Ensure access to fluoride mouth rinses and use of fluoride tablets where water fluoridation is not accessible.
Prevention of ECC - 3

• Ensure dietary counselling with elimination of in-between meals sugary snacks intake.
• Encourage twice daily brushing with age appropriate fluoride containing toothpaste and age appropriate tooth-brushes.
Treatment

• Excavate all lesions and place ZnOE dressing on diagnosis.
• Treat each of the lesion with appropriate method.
• Provide dietary counselling using the patient’s dietary chart as guide.
• Institute caries prevention regimen appropriate for children with high risk for caries.
• Recall patient for follow up every three months.
Conclusion

• Global data on ECC is still not comprehensive.
• Definition of ECC in many studies still not standardised.
• Prevalence is high in all regions of the world.
• Wide variation in prevalence noticed within regions.

ECC is an epidemic in both developed and developing countries.
Quiz 1

• ECC affects the primary dentition
• ECC is diagnosed in school aged children
• ECC is diagnosed only when you can find decayed teeth in preschool children
• ECC is diagnosed only using ICDAS
Quiz 2

Predisposing factors for ECC in children in Ile-Ife include:

• Consumption of sugary snacks in between meals three times or more
• Fair oral hygiene
• Night feeding
• Prolong breast feeding
Quiz 3

Prevention of ECC include:

• Dietary counselling to eliminate sugary snacks in between meals.
• Twice daily tooth brushing with fluoride containing tooth paste.
• Quarterly visits to the clinic for fluoride gel application.
• Daily use of fluoridated toothpaste and fluoride mouth rinse.
Thank You and Questions