SCIENTIFIC PAPER BRIEFS

Outcome of the Implementation of Chronic Disease Management Protocol in Treating Children with ECC

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Background: Early Childhood Caries (ECC) cannot be addressed successfully by restorative treatment alone. Chronic disease management of ECC requires risk based disease prevention and management approaches including caries risk assessment, self-management goal, and caries remineralization.

Methodology: Twenty-five children below the age of 71 months reporting to the department for routine dental treatment were subjected to a complete medical and dental history. A standardized caries risk assessment (ADA) and clinical examination using ICDAS system and dmft score was performed. The parents were explained about caries process and causes of ECC. Self-management goals were defined and agreed upon. Unstimulated saliva was collected from the patient. Salivary pH was determined using calibrated digital pH meter at the beginning and end of the dental treatment.

Results: Parents were motivated and actively participated in the management of early childhood caries. It was observed that the salivary pH levels increased following the chronic disease management protocol.

Conclusion: Although convincing parents/caregivers may pose a challenge for pediatric dentist, the chronic disease management approach shows promising results in comprehensive oral health care.

Evaluation of Salivary Characteristics in Children with Early Childhood Caries – An Invivo study

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Background: Early Childhood Caries (ECC) is a public health problem due to its impact on children's health, development and well-being. It affects all people regardless of their sex, socioeconomic strata, race and age. It is also profoundly affected by other factors like oral hygiene and saliva. Saliva plays a very important role in oral health. Based on the constituents of saliva, it adopts properties such as lubrication, clearance of unwanted substances, digestion, neutralization of acids or bases, protection against demineralization and also an antimicrobial role so the composition of saliva is an important factor in determining the occurrence of caries.

Methodology: The study was carried out in schools of rural areas of Gandhinagar district. A total of 200 children in the schools of Gandhinagar district were screened, out of which 25 children in the age group of 3-6 years with Early Childhood aries were randomly selected and thorough oral examination was done. A self-designed, structured questionnaire regarding dietary habits and oral hygiene practices were distributed among the children. Saliva samples were collected before having lunch and estimated for flow rate, PH and buffering capacity and again saliva samples were collected after 30 minutes of lunch to check the changes in the pH.

Results: All the children with ECC have low flow rate and buffering capacity. There was a significant difference in the salivary pH before and 30 minutes after having lunch.

Conclusion: The physicochemical properties of saliva, such as salivary flow rate, pH and buffering capacity, has a relation with caries activity in children and act as markers of caries activity.

The Relationship of Early Childhood Caries with Dietary Practices of Children and Oral Health Awareness and Knowledge of Their Caregivers

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Background: Early Childhood Caries (ECC) is an infectious, transmissible, diet-dependent disease that has a lasting detrimental impact on both primary and permanent teeth. Most parents of young children have limited awareness of the causative factors and detrimental consequences of ECC.

Aim and objectives: To evaluate the relationship between i) occurrence of ECC in and dietary practices of 3-6 year old children ii) occurrence of ECC in 3-6 year old children and the knowledge and awareness of their caregivers.

Methodology: The study sample consisted of 500 children aged from 3-6 years and attending various kindergarten schools in Udaipur city and their caregivers. Oral examination of all children was done, while the caregivers filled a questionnaire. The questions included those concerning the children's socio-demographic background, feeding and eating habits, dental hygiene-related behaviours, the general oral health knowledge of caregivers, and the dental healthcare experience of caregivers and their children.

Results: There was a moderate positive correlation of the occurrence of early childhood caries with feeding practices ($p < 0.05$) and dental hygiene-related behaviours ($p < 0.05$). There was a negative correlation between the occurrence of early childhood caries in 3-6 year old children and the knowledge and awareness of their caregivers ($p < 0.05$).

Conclusion: There is an evident relationship of early childhood caries with dietary practices of children and oral health awareness and knowledge of their caregiver

Correlating the Prevalence of Early Childhood Caries With the Knowledge, Attitude and Practices of Pediatrician and Parents About Its Prevention in Bengaluru City - A Cross Sectional Study

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Background: Early Childhood Caries (ECC) is a serious public health problem in very young children. As paediatricians are the first health care providers for the child, they can play an important role in preventing ECC, so can parent's knowledge regarding oral health of their child. As there are very few studies assessing the same among paediatricians and parents, the present study was undertaken.

Aims and objectives: To determine the knowledge, attitude and practices (KAP) on prevention of ECC, amongst paediatricians and parents, and to correlate the same with the deft score of children

Methodology: The study included 100 randomly selected paediatrician and 500 patients aged 6-71 months and their parents. Paediatrician and parents were given questionnaire to answer and the children were examined for deft score. The data obtained were tabulated and subjected to statistical analysis.

Results: The results showed that KAP score among paediatricians were directly proportional to their age, qualification, patients seen per day and work experience, and a significant negative correlation($p<0.006$) was seen in regard to their KAP score and deft score of their patient. Socioeconomic status of the parent was directly proportional to their KAP score, and significant negative correlation ($p<0.005$) was seen between their KAP score and deft score of their child.

Conclusion: Although majority of paediatricians and parents reported to have adequate knowledge and attitude towards prevention of ECC, a reported lack of practices was seen. Thus, educational programs and workshops should be arranged for paediatricians and counselling for parents, regarding ECC.

Bacterial Biofilms: An Emerging Link to Disease Pathosis

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Background: Streptococcus mutans, a primary etiological agent of early childhood caries, is a microorganism with the ability to form multi-dimensional complex structure known as biofilm. It is able to acquire new properties allowing for the expression of pathogenicity determinants, determining its virulence in specific environmental conditions through the mechanism of adhesion to a solid surface. Additional properties enabling S. mutans to colonize the oral cavity include the ability to survive in an acidic environment and specific interaction with other microorganisms colonizing this ecosystem. This study is an attempt to explore the effects of various lactose and sucrose based infant milk formulas in comparison with human breast milk and bovine milk on the abilities of S.mutans to form biofilm, a prerequisite for the development of early childhood caries by utilizing an established invitro model using S.mutans MTCC890.

Methodology: All the experimental groups were inoculated with Streptococcus mutans in a microtiter plate. Biofilm formation was determined by the optical density reading using spectrophotometer.

Results: Sucrose based infant formulas showed greater biofilm growth in comparison with lactose based. Both infant formulas showed more growth when compared to human milk and bovine milk.

Conclusion: The study findings adds to the current knowledge regarding the nutritional influence of breastfeeding and validates the necessity to begin an oral hygiene regimen as early as possible to aid in the prevention of early childhood caries

The Prevalence of Early Childhood Caries in 3 to 5 Year Old Children in Jabalpur City- Central India

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Background: The prevalence of Early Child Caries in Jabalpur City, Central India. The aims of study are :(1) to collect surveillance data on the prevalence of Early Childhood caries (2) to increase the level of awareness & motivation for ECC.

Methodology:A cross-sectional study on sample of 422 children (boys= 205, girls= 219) aged 3 to 5 years (mean age 4 years) were planned and the sample were clinically examined for carious lesions using

WHO criteria &pufa index to evaluate the consequences of caries. The sample was tested with respect to parameters viz; breast fed/bottle fed, attitude of the parents, type of school, and supervision by parents in relation to Early Childhood Caries.

Results: Chi-square test was used to test the difference in the distribution of caries prevalence (47.86%,p=.036). A significant increase was seen in ECC with increasing age, at 3 years (5.26%) at 5 years (15.63%). Out of 422 children 96% were breast-fed, 47% continued up to 2 years of age & 11% up to 3 years of age. A bed time use of bottle feeding was preferred in 26%.

Conclusion: The given parameters showed strong association with the occurance of Early Childhood Caries. The attitude of the parents was the most important parameter to have good oral status in children having multidimensional impact. This may help to plan strategies to prevent disease & adverse health consequences.

Evaluation of Levels of Streptococcus Mutans in Children After Applying Fluoride Varnish- A Randomized Controlled Study

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Background: Dental caries is one of the most prevalent infectiousdisease and although of multifactorial origin, Streptococcus mutans is considered the chief pathogen in its development. Flouride is one of the most effective agents used for the reduction of dental caries apart from oral hygiene maintenance.

Methodology: Normal, healthy children aged 18-36 months along with their mothers were screened. Sixty mother-child pairs were included for the study and systematically grouped as follows: Group 1: Application of saline as a placebo to the child Group 2: Application of fluoride varnish to the child The levels of S mutans in dental plaque of children were assessed at baseline, 6 and 12 months after repeat varnish application.

Results: The reduction in the levels of S mutans of dental plaque in children in group 1 was 40.90% and group 2 (95.12%)

Conclusion: Flouride varnish showed over 95% reduction of levels of S mutans when applied to the children.

Prevalence and Pattern of Early Childhood Caries in Indian Schoolchildren of Udaipur City

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Background: Dental caries among preschool children is a major public health problem in many developing countries including India. Early childhood caries (ECC) is not life threatening but may contribute to sub -optimal health and failure to thrive. It is a serious socio-behavioral and dental problem that afflicts infants and toddlers worldwide.Untreated caries may lead to pain, bacteremia, compromised chewing ability and early loss of primary dentition, and affect the growth and maturation of adult dentition.

Aim and objectives: The aim of the present study was to assess the prevalence of early childhood caries in preschool children aged 3 to 6 years of Udaipur City.

Methodology: The study was conducted on a sample of 500 preschool children (352 male and 148 female) of Udaipur city. Clinical examination was performed using deft/defs index followed by

comprehensive interview with mothers, which included a series of questions regarding socioeconomic status, educational status of mother, feeding habits and oral hygiene practices.

Results: The overall prevalence rate of early childhood caries was 17.8%. Prevalence rates of mild, moderate and severe types of early childhood caries were 70.78%, 21.34% and 7.86%, respectively.Caries was significantly higher in children with nocturnal feeding and low maternal education.

Conclusion: From the results of this study, it could be concluded that dental caries prevalence in preschool children of Udaipur city is most commonly associated with low maternal education, low socioeconomic status, improper feeding and oral hygiene habits.

Impact of Bilingual Flipchart on Parental Awareness Regarding Early Childhood Caries

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Background: Dental caries is an international public health challenge, especially among young children and it is serious problem in both industrialised and developing countries. The global prevalence of ECC has been reported to range from 1-70%. Even with current prevalence of ECC parent's awareness of infant and child oral health has been concluded to be limited and questionable.

Methodology: Objective of our study is to evaluate impact of bilingual informative flipchart on parent awareness regarding ECC.We piloted a bilingual flipchart with parents of pre-schoolers and administered pre and post intervention surveys. The paired t-test was used to evaluate changes in awareness of parents regarding oral health, disease, risk factors & preventive measures of caries in their children.

Results: According to the results obtained, there was significant improvement in awareness of all the parents who had participated.

Conclusion: Bilingual educational flipcharts help in improving the knowledge of young parents of pre-schoolers regarding caries and its associated risk factors.

To Evaluate the Role of Green Tea Mouthwash in Early Childhood Caries and its Effect on Salivary Nitric Oxide Levels

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Background: Caries in infants and young children has been attributed to infant-feeding pattern. Specifically, prolonged and frequent day-time and night-time bottle feeding has been implicated. It is assumed that an increase in the knowledge of mothers will influence their self-care habits and dietary practice and, in turn, improve the dietary and oral hygiene habits of children to prevent caries.

Methodology: Random selection was done for the study. Clinical examinations was carried out by the examiner using dmft index. Questionnaires for information related to the dietary history of the children was completed by their mothers.

Results: Results was formulated using Chi-square test. The values in children whom night feeding was done was 0.03 and in whom oral cavity was cleaned after feeding was 0.04. In both these parameters the values were less than 0.05, so statistically significance difference was found.

Conclusion: This study concludes that parents who cleaned the childrens oral cavity after feed had less caries when compared to that of who did not clean the mouth after feeding.

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Finger Brush Vs Conventional Brush

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Background: Tooth brushing is fundamental to oral hygiene & children are generally not capable of obtaining a sufficient oral hygiene level. So, a study was conducted to evaluate the plaque removal efficacy of finger toothbrush and conventional toothbrush under supervised conditions.

Methodology: A total of 80 children aged 3-6 years who fulfilled the inclusion criteria were selected. Each child had three visits during which brushes were distributed to children & their plaque scores were recorded. Brushing technique was demonstrated to parents and they were made to brush their child's teeth in split mouth design.

Results: Student't' tests and paired't' tests were used in analyzing data. Statistically non-significant results were found in mean plaque score at baseline, pre-brushing and post-brushing between finger toothbrush and conventional toothbrush. Statistically significant results were found in dental plaque score with use of finger toothbrush from baseline to post-brushing (7.54+2.18; $p<0.001$), from baseline to pre-brushing (3.69+1.47) and from pre-brushing to post-brushing (3.85+1.86). Similarly, statistically significant results were found in dental plaque score with use of conventional toothbrush from baseline to post-brushing (7.20+2.20), from baseline to pre-brushing (3.44+1.66) and from pre-brushing to post-brushing (3.76+1.84).

Conclusion: Both conventional as well as finger tooth brushes were equally efficacious in plaque removal in children aged 3-6 years.

Impact of Feeding Practices on ECC

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Background: Caries in infants and young children has been attributed to infant-feeding pattern. Specifically, prolonged and frequent day-time and night-time bottle feeding has been implicated. It is assumed that an increase in the knowledge of mothers will influence their self-care habits and dietary practice and, in turn, improve the dietary and oral hygiene habits of children to prevent caries.

Methodology: Random selection was done for the study. Clinical examinations was carried out by the examiner using dmft index. Questionnaires for information related to the dietary history of the children was completed by their mothers.

Results: Results was formulated using Chi-square test. The values in children whom night feeding was done was 0.03 and in whom oral cavity was cleaned after feeding was 0.04. In both these parameters the values were less than 0.05, so statistically significance difference was found.

Conclusion: This study concludes that parents who cleaned the childrens oral cavity after feed had less caries when compared to that of who did not clean the mouth after feeding

Potential Cariogenic Risk of Breakfast Cereals

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Background: In the present scenario of faster and busy life and the recent upliftment in socioeconomic trends, more and more families are inclining towards using the readily available branded food preparations as weaning diets for their child. As the demand is becoming more, a vareity of newer infant cereal preparations have entered the Indian market. To ensure the growing children receive sufficient calories, these products frequently contain high concentrations of simple carbohydrates eg: sucrose, lactose, and maltodextrins etc. which make them highly cariogenic. As these newer infant formulae and breakfast cereals are gaining more popularity it is better to evaluate their relative cariogenic potentials in the child oral environment as their regular consumption can form the basis of early childhood caries.

Methodology: Information about the content of carbohydrates, sucrose, maltodextrins, dietary fibre, trace elements like zinc, iron, calcium etc. are noted from the basic composition of the preparations and tabulated and analysed.

Results: Most of the commercially available preparations are having sucrose content above the range of 10%-15% of sucrose.

Conclusion: Home made weaning foods and traditional Indian breakfasts are better in terms of lower cariogenic potential provided that proper oral health care methods are followed.

Prevalence of Early Childhood Caries Among Fluoridated Areas of Hyderabad-Karnataka Region

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Background: Early Childhood Caries is a major health problem since the past few decades and continues till today affecting in many ways in the normal growth and development of the child. Inspite of many recent advances and diagnostic techniques available, it has been a socially prevalent disease among the urban as well as rural population in our country. It can be recognized, arrested and potentially reversed in its early stages by various methods among which fluoride has known to show cariostatic efficacy. Children residing in fluoridated areas receive certain amount of fluoride concentration to the tooth over a long period of time during pre and post eruptive stages of tooth development.

Methodology: A total of 12 registered schools, two from each districts of Hyderabad-Karnataka region were selected by lottery method. All the children from the selected schools on the day of examination constituted the sample. A sample of 1470 children of aged 2-5yrs were examined using mouth mirror and probe. The status of dental caries was recorded according to WHO Oral Health Survey 2013 format. The categorical data was expressed using proportions. Chi square tests was used wherever necessary.

Results: Prevalence of early childhood caries in fluoridated areas of Hyderabad-Karnataka region is found to be 8%.

Conclusion: Children who were residing in fluoridated areas have decreased early childhood caries.

Relation between Severe Early Childhood Caries and Body Mass Index (BMI) and Heamoglobin Content in Children Age 4-5 Year

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Background: Severe Early Childhood Caries is public health problem among school going children. Malnutrition is condition commonly prevalent in child with sever early childhood caries due to the lack of proper intake of nutrients as pain affected the quantity of food intake

Aim and objectives: Aim of the study was to evaluate the relation of sever early childhood caries to Body mass index(BMI) and hemoglobin content in the blood of the children affected sever early childhood caries**.**

Methodology: A total of 100 urban school going children in ferozpur in the age group of 4-5 years were selected, out of which 50 children constitute control group(caries free children) and rest of 50 children were affected sever Early Childhood Caries. Then body mass index score and hemoglobin content was assessed by taking random blood sample of each patient.

Results: Significant difference was found in the Body mass index(BMI) and hemoglobin content in children age 4-5 years affected with sever early childhood caries and control group.

Conclusion: Children with severe early childhood caries in the present study had significant less Body mass index (BMI) and hemoglobin content as compared to control group due to lack of proper intake of nutrients.

Pomegranate Extract- A Speed Breaker to ECC

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Background: Early childhood caries is multifactorial complex infectious diseases which need intervention at the earliest to prevent the damage to the dentition, speech problems and esthetics. As children are very sensitive to the medications, it is always better and more effective to use the herbal and household remedies to prevent the disease. Pomegranate which is considered as a pharmacy onto itself has many therapeutic values and has been proven to have antimicrobial effect on the cariogenic dental pathogens.

Aims and objectives: The aim of this study is to evaluate the antimicrobial efficacy of the pomegranate extract on the streptococcus mutans.

Materials & methodology: Saliva sample was collected from children with severe early childhood caries, streptococcus mutans was isolated from these samples by using Mitis salivarius bacitracin agar medium and antimicrobial efficacy was tested by agar well diffusion method.

Results: Pomegranate extract showed significant effect on streptococcus mutans.

Psycho-Social Impact of Early Childhood Caries

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Background: Early childhood caries is associated with significant adverse physical, functional and behavioral consequences that can greatly impair quality of life. The effects of early childhood caries can be long term, increasing risk for dental problems later in life interfering with basic social functioning as well as optimal growth and development.

Aims and objectives: The aim of this study is to determine the psycho-social impact of early childhood caries in preschool children.

Methodology: The study included 30 children below 72 months of age effected with early childhood caries. Data is collected by applying validated questionnaires directed towards child's oral health behavior answered by the parents or guardians and children.

Results: Most of the parents or guardians of children with early childhood caries reported that their children complained of toothache and a significant portion stated that their children had problems eating certain kinds of foods, were absent from school, were ashamed to smile and stopped playing with other children because of their teeth.

Conclusion: Early childhood caries was found to have a negative impact on children's oral health-related quality of life.

Prevalence of Severe Early Childhood Caries and its Association to BMI Among 3-6 Year-Old Children in South Bangalore

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Background: Severe Early Childhood Caries (S-ECC) is an aggressive form of caries in pre-schoolers affecting quality of life. The relationship between dental caries and body mass index (BMI) in children was evaluated in different countries and the results were inconsistent. In some advanced countries, frequent consumption of carbohydrates were reported resulting in obesity and dental caries. Conversely, in some developing countries dental caries resulted in malnutrition and inability of consuming food. Aim: To evaluate the prevalence of S-ECC among children of 3-6 year old and the relationship of S-ECC to their nutritional status using BMI for age.

Methodology: A total of 1005 students of age group 3-6 years attending preschools and anganwadi in South Bangalore were screened. All children were clinically examined for dental caries using mouth mirror and probe. Based on dental caries, the subjects were divided into three groups: the caries free group, ECC group; and S-ECC group. Anthropometric measurements was recorded by one investigator. BMI percentile was calculated by using Centre for Disease Control (CDC) BMI age growth charts which are age and gender specific.

Results: Out of the total 1005 students screened the prevalence of S-ECC was 12.74%. Chi square test was used to estimate the association between S-ECC in different BMI conditions. The level of significance was set at $P<0.05$. Among the 128 students affected with S-ECC, 64.8% were underweight, 32.8% were of the normal weight and only 1.6% were overweight.

Conclusion: The findings of the study demonstrated a positive association between S-ECC and underweightness.

Anaerobic Microbiota in Root Canals of Severe Early Childhood Caries: A PCR study

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Background: Severe Early Childhood Caries (S-ECC) is a devastating dental infection that disproportionately affects oral health of children. The child often reports only when the pain becomes acute or the teeth break and parents realize their child has caries.If untreated these carious lesions progress into the pulp and lead to root canal infections, abscess formation and tooth loss. Anaerobic microorganisms represent over 70% of the microbiota in root canals (RCs) of primary teeth that have been treated unsuccessfully and were also the most prevalent bacteria in teeth indicated for extraction.

Aim: The aim of this study is to detect the presence of specific anaerobic bacteria in RCs of primary teeth with S-ECC using Polymerase Chain Reaction (PCR).

Methodology: Fifteen subjects ranging from 3-6 years of age who presented with S-ECC were selected at the outpatient department. Samples were taken from the RCs of each tooth as follows: three sterile absorbent paper points are sequentially placed into the full length of the largest canal (palatal canal of maxillary molars and distal canal of mandibular molars) for 60 seconds and are then transferred to sterile 1.5-ml eppendoff tube with TE buffer. All samples are subjected to analysis.

Results: The anaerobic species detected in the samples were A.naeslundii (93.3%), P.intermedia (53.3%), E. Fecalis (55%) and P.gingivalis (13.3%) The result of the present study suggests a high anaerobic bacterial heterogeneity in the RCs of infected primary teeth in S-ECC. Knowledge of bacterial species improves the outcome of the treatment therapy thereby improving the prognosis.

To Determine Prevalence and Risk Factors of Early Childhood Caries (ECC) in Preschool Children of Sangamner City- Maharashtra

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Background: Dental caries- one of the most common chronic diseases of early childhood is predictive of future dental problems. Epidemiological studies reveal considerable variation ranging from 3 to 85% in the prevalence of caries in preschool children with strong correlation to socioeconomic status and ethnicity along with local factors. This highlights the importance of prevalence studies and understanding of the local factors influencing ECC in designing a preventive program.

Methodology: Total 1325 children between 24 and 71 months were clinically examined for dental caries using mouth mirror under day light. Dental caries was recorded according to WHO criteria. The parents/caregivers of children were interviewed with a structured questionnaire. The data was statistically analyzed.

Results: Out of 1325 children, 755 were affected with ECC- overall prevalence being 57%. The factors identified to be significantly correlated were age of child, mother's education level, father's occupational status, bottle feeding, consumption of sweetened drink at night and utilizing health care services.

Conclusion: Public funded oral health programs should be developed targeting the children from lower socioeconomic strata. Effective strategies should be implemented promoting use of brush and paste for cleaning teeth and discouraging on demand consumption of refined sugars and inappropriate bottle feeding. Most factors identified were preventable by promoting dental health education and encouraging routine dental visits.

Remineralizing Effectiveness of Amine Fluoride, Calcium Sucrose Phosphate and Fluoride Dentifrices-An Invitro Study

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Background: The focus in caries management has shifted in recent years to non-invasive treatment of early lesions using remineralizing agents. This study aimed to evaluate the remineralizing potential of various available dentifrice formulations. Aim and Objectives: To compare and evaluate changes in surface roughness, surface morphology and mineral content of the demineralized enamel lesion after treatment with dentifrices containing sodium monofluorophosphate, amine fluoride and Anticay.

Methodology: 18 extracted maxillary molars were decoronated and sectioned into 4 to obtain 72 specimens. Specimens were coated with nail varnish leaving a window of approximately 4×2 mm size and demineralized. After demineralization half of the window was covered with nail varnish to obtain baseline values. The specimens were then randomly exposed to one of the 4 different test groups, Group A: No treatment (Negative control), Group B: Sodium monofluorophosphate dentifrice (Colgate, positive control), Group C: Amine fluoride dentifrice (Amflor), Group D: Anticay dentifrice (EnaFix) and subjected to pH-cycling for 4 weeks. They were assessed using a profilometer and SEM-EDAX for changes in surface and mineral content.

Results: Significant decrease in surface roughness and increase in mineral content observed in all groups with the difference significant for both Groups B and C when compared with control. No significant difference in mineral content between groups observed except Group B which had significantly higher calcium levels than Group C. SEM showed deposition of minerals in all groups.

Conclusion: Sodium monofluorophosphate has better remineralizing effectiveness in terms of reduction in surface roughness and increasing calcium content than amine fluoride Keywords: remineralization, dentifrices, and demineralization

Knowledge and Attitude Among Pregnant Women of Low Socio Economic Status on Early Childhood Caries

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Background: Early Childhood Caries (ECC) and the more severe form of ECC (S-ECC) can be particularly virulent forms of caries, beginning soon after tooth eruption of primary teeth, progressing rapidly, and having a lasting detrimental impact on the dentition. Early risk assessment allows for identification of parent-infant groups who are at risk for ECC and would benefit from early preventive intervention. Anticipatory guidance is one such approach which can be given to the parents even before the child is born, to prevent the disease.

Methodology: A total of 100 expectant mothers belonging to low socio economic status who had a high school qualification were included. Pre counselling questionnaires were given to all of them to assess their knowledge. A one to one counselling with Ten Commandments were given in local language. After 15 days, same questionnaire were given to the same subjects and their knowledge was reassessed.

Results: The knowledge among the subjects was found to be low before giving the anticipatory guidance. There was an increase in the knowledge about its prevention and it was statistically significant after the education.

Conclusion: The knowledge among expectant mothers of low socio economic status was found to be low and there was an increase in the knowledge after giving the anticipatory guidance. Giving anticipatory guidance to all the expectant mothers can reduce the prevalence of ECC

Early Childhood Caries and Its Impact on Child Oral Health

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Background: Early Childhood Caries (ECC) has been shown to have a significant impact on the quality of life of children and their caregivers. Various methods have been used to assess oral health related quality of life among those OHRQoL has been proved to be a reliable tool. AIM: The aim of this study was to evaluate Oral Health Related Quality of Life (OHRQoL) in preschool children with ECC in Bangalore.

Methodology: Eight hundred and fifty children from urban schools in Bangalore between age groups 3-5 years were screened and 400 children were selected for participation in the study. The study consisted

of 200 children with ECC and 200 caries free children. The parents were asked to fill the 16 item questionnaire for assessing OHRQoL.

Results: The mean deft score was 4.46 parents of children with ECC reported significant experience of pain (99.5%), swelling (26.0%), fever (33.0 %), irritable/ crying (81%), bad breath (82%), occasional disturbed sleep due to pain (81%). Parents of children with ECC had considerable worry due to their oral condition and around 25% of them had Cato miss their work and 24.5% had considerable financial impact.

Conclusion: Early childhood caries had considerable negative impact on both the children and their parents. Untreated early childhood caries was associated with poor oral health related quality of life among preschoolers.

Association of Clinical Parameters, Oral Hygiene and Dietary Practices With Active Caries Lesions Among Children With Early Childhood Caries

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Background: In the management of ECC, the correct assessment of activity of carious lesion is important to make treatment decisions regarding preventive or operative management. A targeted approach towards risk factors is needed to render the caries lesions inactive. The role of the risk factors in rendering caries lesions active/inactive is unclear. Aims and Objectives: To find the association of clinical parameters, oral hygiene and dietary practices with active caries surfaces among children with early childhood caries.

Methodology: A total of 171 children of 2-5 years of age with at least 1 decayed/ filled tooth surface were included in the study and 740 tooth surfaces were examined. A structured questionnaire regarding oral hygiene practices was filled by parents of the children and 24 hour diet history was obtained. Teeth were examined for presence or absence of visible plaque and dmfs score was recorded. Each tooth surface was scored as per ICDAS-II criteria followed by the supplemental Lesion Activity Assessment criteria. The scores of LAA criteria were used to classify the surfaces as active/inactive.

Results: Multivariate logistic regression model showed that child falling asleep with sugary drink, presence of visible plaque on the tooth surface and ICDAS score >4 were statistically significantly higher in patients with active carious surfaces.

Conclusion: The activity of carious surfaces in children with ECC is associated with clinical parameters such as presence of visible plaque and depth of the cavity and improper dietary practice such as exposure to sugary drink when the child falls asleep.

Chemical Composition Variations of Enamel in Early Childhood Caries: A Review

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Background: Early Childhood Caries (ECC) is a chronic, transmissible, infectious disease with a complex, multifactorial etiology, several factors of which remain unclear.For a complete understanding of the disease process of caries, we should first understand the process of caries initiation, which occurs in the tooth enamel; therefore, any alterations in the composition or crystallinity of enamel can render it more vulnerable to caries. Apatite in enamel and in all other mineralized tissues exhibits numerous variations, including missing ions, particularly calcium and hydroxy. Such incorporations and substitutions (present in the hydroxyapatite crystal due to the substitutions by extraneous ions) do have a profound effect on the behaviour of apatite, especially with regard to its solubility at low pH.

Methodology: A mild variation in the structure of hydroxyapatite can have a profound effect on the behaviour of apatite, especially with regard to its solubility at low pH. Due to its high sensitivity to the main elements of dental hard tissues, X-ray microanalysis or energy-dispersive spectroscopy is used to investigate the elemental or macrominerals present in the enamel. The elements Ca, P, C, and O can be easily and accurately measured by EDS analysis.

Results: Therefore, the investigation of the macrominerals (Ca, P, C, and O) and the amino acid profiles that constitutes the crystalline structure and the supporting matrix, respectively, of tooth enamel to see whether any such variation exists.

Conclusion: This indicates that a possible difference in the chemical composition of enamel could act as a risk factor for the development of ECC

Comparative Evaluation of Candida Species Isolated from Children With and Without Early Childhood Caries

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Background: Early Childhood Caries (ECC) is an aggressive, destructive form of dental caries affects the children younger than 6years of age. Candida is known to increase the adherence of Streptococcus mutans to the oral biofilm and produce acids that cause tooth demineralization.There are different species of Candida differ in their virulence and sensitivity to antifungal agents.

Methodology: This study was conducted on a random sample of 100 children aged below 6years who came to department of pedodontics.The study population comprised of 50 children each in ECC and NON ECC groups.Samples were collected using sterile cotton swabs, swabbed over the tooth surface and were inoculated for culture on Sabouraud's dextrose agar and incubated at 370c for 24 hours. Growth of candida was seen as creamy, smooth, convex pasty colonies. Species identification was done depending upon the color on Hichrome agar, and by conventional germtube method and growth on Corn Meal Agar.The virulence factors like haemolysin and phospholipase B were also tested.Data was evaluated using SPSS version 17.0.

Results: Candida carriage among the ECC children was 84% and 24%in non ECC group. Candida albicans was predominant species isolated (61.1%).Candidal isolates also showed virulence factors like phospholipase, hemolysin and germtube formation.

Conclusion: A significant correlation was found between the presence of Candida and Early Child hood caries. Both candida albicans and the non albicans found to express virulence factors.

Paediatrician's Knowledge, Approach and Recommendations for Preventing Early Childhood Caries in Children- An Epidemiological Survey

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Background: Childhood is an important stage in life and Early Childhood Caries (ECC) is the most common disease of this phase. Unlike paediatric dentists, pediatricians see the majority of children periodically during these first years of life and have the opportunity to sensitize parents to the oral health of their children and to prevent ECC.

Methodology: A cross-sectional survey was carried out among 36 paediatricians selected randomly. A close ended validated questionnaire was solved by all the selected paediatricians. It had questions regarding the knowledge about ECC, child's first dental visit and anticipatory guidance given to parents. This study also evaluated the recommendation for patients to regular dental visits.

Results: Majority of paediatricians (83.3%) were aware of ECC and practiced regular oral screening of their patients. They recommend for the first dental visit at around 1 year of age. Among 36 Paediatricians 33 (91.7%) considered tooth brushing, regular dental check-up, control over sugary and sticky in between meal snacks as the measures for the prevention of ECC and 83.3% of the paediatricians agreed that syrupy medications containing sucrose as a potential risk factor. However, majority of them didn't recommend any fluoride supplements in their daily practice.

Conclusion: Paediatricians were well aware of ECC. They consider it to be the responsibility of the general practitioner, paediatrician, general dentist and the paediatric dentist together for the spread of awareness and prevention of ECC

Awareness Regarding Oral Health Care Among Pregnant Women

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Background: Pregnancy is a unique period during a woman's life and is characterized by complex physiological changes, which may adversely affect oral health. Good oral health during pregnancy not only improves the quality of life of the pregnant mother, but also reduces the risk of her child developing early childhood caries in the future

Methodology: A cross sectional survey was conducted among pregnant women to assess expectant mother's knowledge of oral health behavior, child oral health and appropriate prevention strategies.Questionnaires were distributed among 500 pregnant women visiting maternity hospitals.Questions focused on the mother's knowledge of oral health practices, and access to dentalcare.Awareness regarding oral health and preventive strategies for their future children were also assessed. Results were statistically analysed

Results: More than 50% had poor knowledge and awareness regarding oral health. There was a significant association between dental knowledge and practices with both education and socio-economic status

Conclusion: Therefore, there is an urgent need for education and motivation of expectant mothers regarding oral health through various health promotion interventions.

Prevalence of Early Childhood Caries and Caries Risk Indicators Among Preschool Children of Visnagar Gujarat-A Cross-Sectional Study

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Background: Early Childhood Caries (ECC) is one of the most common multi-factorial dental diseases with prevalent health problems of infants and toddlers. It is considered as a complex disease of primary dentition which relay serious socio-behavioral issues if left untreated; the deleterious effects are pain, difficulty in chewing, malocclusion, phonetic problems, lower self-esteem and sub-optimal health. Hence, ECC is a social, political, behavioral, medical, psychological, economical and dental problem that affects the quality-of-life. Early identification and intervention of ECC is a necessity to prevent future complications. In England the prevalence reported ranges from 6.8-12% and in USA prevalence varies from 11.0-53.1% while in India a prevalence of 30-44%.As per our literature search, ECC prevalence studies in the North Gujarat region are nonexistent. Aim: To investigate the prevalence and related risk factors among the preschool children of Visnagar, Gujarat, India. Study Design: Cross sectional descriptive study.

Methodology: Material and Methods: This cross-sectional descriptive study was conducted among randomly selected 315 children, in the age group 18–72 months.Participants attending government, government aided, and private play groups and Anganawadi facilities in urban, semi urban, and rural areas of Visnagar were examined.

Results: The prevalence of ECC in preschool children was 26.15 % while the mean dmft was 1.42 in Visnagar, Gujarat

Conclusion: ECC is a serious public health problem in this population. There is an urgent need to implement preventive and curative oral health programs for preschool children in rural, semi urban and urban areas.

Comparative Evaluation of Antimicrobial Efficacies of 0.2% Chlorhexidine and 4%Tulsi Extract in the Decontamination of Child Toothbrushes-An Interventional Study

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Background: Inter individual transmission of Streptococcus mutans could occur via contaminated toothbrushes kept in close proximity or even by toothbrush sharing. Toothbrush contamination seems to be relevant because subsequent intraoral translocations of microorganisms or reinfections may occur. The

aim of this study was to comparatively evaluate the antimicrobial efficacies of 0.2%Chlorhexidine and 4%tulsi extract in decontamination of child toothbrushes

Methodology: Children of the age 5-6 years under high-risk caries group was divided into 3 groups of 10 each. One control group [Group I(G I) - distilled water] and 2 study groups [Group II(G II) -0.2% Chlorhexidine and Group III(G III)-4% Tulsi extract). Pre coded toothbrushes and toothpastes along with the test solutions [G I-Distilled water, G II-0.2%Chlorhexidine, G III-4%Tulsi extract] was provided to each group. Baseline S mutans count in toothbrushes after 5 days of their usage was taken.The participants were then instructed to immerse their toothbrushes in the test solutions provided to them for 2 hours after brushing, which was done for 5 days. Evaluation of post intervention S mutans count on the toothbrushes was done.

Results: Chlorhexidine showed 100% and tulsi extract showed 93% reduction in the Streptococcus mutans count in the toothbrushes which was statistically significant.

Conclusion: Tulsi extract 4%could be suggested as an alternate agent for chlorhexidine as a toothbrush disinfectant which will be non-toxic, cost-effective and can be easily implemented, particularly at home and for its widespread use.

Mother's Knowledge and Attitudes of Dental Health and Early Childhood Caries

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Background: Prevention strategies are important in improving the oral health for young children. For this to be effective, it is important to understand the social value that mothers (i.e. primary caregiver) ascribe to primary teeth.

Methodology: A cross sectional study was carried out among 200 mothers of randomly selected pre-school children to evaluate their knowledge and attitudes of dental health and ECC by pre validated questionnaire. The dental examination of children was carried out and their dmft status was co-related with the mother's responses.

Results: Mothers of children with ECC were more likely to believe that caries could not affect a child's health while those who believed primary teeth are important had children with significantly less decay.

Conclusion: Incorporating such questioning into caries risk assessments may be useful means to determine a child's risk for ECC.

Caries- Triumph Over Darkness

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Bakground: "The best & the most beautiful things in the world cannot be seen or even touched. They must be felt with the heart. - Hellen Keller." Most of the Handicapped Individuals Start their life with healthy teeth and gums but with the course of time, The oral health gets deteriorated because of various factors like diet, eating pattern, medication, physical limitations, lack of cleaning habits and attitudes of parents and health providers Vision is one of the most important sense for interpreting the world around us, and hence when it is impaired in childhood, it can have detrimental effects on physical, neurological,

cognitive, and emotional development. Hence our study compares the Caries status and Oral hygiene practices amongst Blind and Sighted institutionalized children of Sangli.

Methodology: A total of 48 blind subjects and 48 sighted, age and sex matched children from residential institution of similar socio-economic status were screened and examined. Then, the DMFT/deft indices were recorded. Oral hygiene practice and knowledge was obtained by explaining the questionnaires to every child in their own language and later filled by a single investigator.

Results: The Caries Score of Blind group was more as compared to sighted group with statistically significant difference but there was no difference in the oral hygiene practices among both the groups.

Conclusion: It is very difficult for a Pedodontist to explain the proper oral hygiene practices to the blind children. Hence these children require special attention for instilling a positive oral health amongst them.

Prevalence of ECC in Children With Special Healthcare Needs

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Background: Early Childhood Caries is the most communicable & preventable disease process in children younger than 5years of age. The main reason for ECC is due to the inappropriate use of baby bottle in feeding the child. In special children the chances for caries damage is even more because of the reduced salivary flow, neuro muscular coordination and poor oral hygiene.the objective of this study is to find the prevalence of ECC in children with special healthcare needs.

Methodology: In this study after getting the ethical clearance from the institution and from the school in which the study is being conducted a total of 45 special children with various health conditions like autism, cerebral palsy, mental retardation oral screening was done. screening was done after getting the informed consent from the parents.during screening DMFT scores were obtained and were recorded in a scoring sheet.out of 45 children 18 children had ECC. Results were tabulated according to each condition of diseased children and severity of ECC.Then the results were statistically evaluated.

Results: Out of 45 children 18 children had ECC (AUTISM- 3, CEREBRAL PALSY-6, and MENTAL RETARDATION- 9) which shows 40% of children have ECC. Children with cerebral palsy and mental retardation had severe ECC with about 50% and 33.3% respectively children with had mild to moderate form of ECC.

Conclusion: Prevalence of ECC is relatively less in children with autism when compared to cerebral palsy and mental retardation.so parental guidance and special care must be taken to the these children so that the incidence of such diseases is reduced.

Ultrasonic Versus Syringe Irrigation for Smear Layer in Paediatric Endodontics: A SEM Study

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Background: The smear layer in root canals can prevent the penetration of intra-canal medicaments into the dentinal tubules, thus cause failure in adhesion of Obturating materials.

Aims & Objectives: The purpose of this in vitro study on extracted primary teeth was to compare & evaluate the efficiency of ultrasonic & syringe irrigation for smear layer removal.

Methodology: The teeth were decoronated at the level of CEJ. Root canal preparations of 12 extracted single rooted primary teeth were performed. Depending on irrigation techniques teeth were divided into groups: Group I (ultrasonic) and Group II (syringe). Based on the irrigants used, groups were subdivided into group I (a) 1% Naocl & I (a) 17% EDTA and II (a) 1% Naocl & II (a) 17% EDTA. The specimens were then split into halves & canal surfaces were viewed under SEM for removal of smear layer

Results: Group I (a) showed better efficiency at 1% Naocl with score (0) than group II (a) with score (3) & p? 0.001. While group II (b) with score (1) showed better efficiency in removal of smear layer with respect to group I (b) with score (3) p? 0.001.

Conclusion: The present study indicated that 1% Naocl irrigant with ultrasonic irrigation is better than syringe irrigation.

Correlation Between Fingerprint Pattern and Early Childhood Caries

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Background: Dermatoglyphics is supposed to be influenced by genetic and environmental factors and also dental caries. Since early childhood caries is a multifactorial disease with the influence of genetic pattern, this study was undertaken to explore the possibility of dermatoglyphics as a non invasive and early predictor of early childhood caries in children, so as to initiate preventive oral health measures at an early age. So the aim of the study was to correlate the fingerprint pattern among children below 6 years of age with the presence of early childhood caries

Methodology: 20 children were allocated to two groups - one group of children with early childhood caries and one group of caries free children. Their fingerprint patterns were recorded and the data was correlated with the presence or absence of Early Childhood Caries

Results: There was absence of arch pattern in the left thumb, middle and ring finger and right middle, ring and little finger for caries free children. For the ECC group, there was absence of arch pattern in both the left and right little fingers.

Conclusion: Dermatoglyphics can only be used as a predictor of early childhood caries and not as an definite indicator of the same.

Cognizance of Oral Health Care Among Pregnant Women – A Cross-Sectional Study

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Background: Health and nutritional status of mothers and children are intimately linked. Ensuring the health of women, in their own right, through all stages of life will have a continued effect as women are the nurturing providers for their children and families. Very young children are dependent on their mothers to attend to their oral hygiene and feed them. Inappropriate bottle use patterns, such as the addition of sweeteners to the liquid and prolonging exposure of sugary liquids at bedtime, and later age at weaning have been linked to early childhood caries. The present study was designed to assess the knowledge, attitude and practices of pregnant women about their oral health care and that of the child they are pregnant with as well as of their other children, if any.

Methodology: A total of 240 pregnant study subjects were included in the study, irrespective of them being primigravidae or mother of a child or children. A self-administered questionnaire comprising of questions on general demographics, oral health care, infant feeding practices, nocturnal bottle feeding, correct age of eruption of first teeth and first dental visit was given followed by instructions on the same. Also a feedback was taken on their opinion about the need for prenatal oral health counselling.

Results: Results showed around 61.5% pregnant women considering brushing once sufficient and 57.3% women who believe in nocturnal feeding of sweetened drinks.

Conclusion: This study thereby reflects the need for maternal counselling on comprehensive oral health care**.**

Prevalence of ECC among Government and Private Playschool Children of South Benguluru and its Correlation with the Caregivers Knowledge

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Background: ECC is the most prevalent disease among children in the global scenario and is associated with various dietary factors. The caregiver's knowledge on oral health can be ascribed to the development of ECC as they are involved in the child's daily diet, general hygiene and oral health care. There is an increased prevalence of ECC among Government Playschool children. However, there is a lacunae of studies that compare the prevalence of ECC of these children and Private Playschool children.

Objectives: To assess and compare the prevalence of ECC among Government and Private Play school children. To correlate the association of diet and caregivers knowledge on the prevalence of ECC among Government and Private Play school children.

Methodology: The present study was conducted among Playschools in Bengaluru city Group1:300 Private Playschool children Group2:300 Government playschool children defs index was used to assess the presence of ECC among these children. Data was collected through a validated questionnaire distributed to concerned caregivers, which evaluated their knowledge and attitude towards oral health care, and the dietary practices of these children. Data was subjected to statistical analysis.

Results : Out of the 600 children, 51% from Private Playschool and 66% from Government Playschool children had ECC, which is statistically significant($p<0.005$).A significant difference in the knowledge and practices of Government and Private Playschool caregivers was also seen($p=0.013$)

Conclusion: Government Playschool children had an increased caries experience as compared to Private playschool children, which could be associated with the diet provided and knowledge of caregivers.

Zirconia Crowns –A Remedy for Esthetic Rehabilitation of Primary Teeth

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Background: Early Childhood Caries is a complex disease, which involves maxillary primary incisors within a month after eruption and spreads rapidly to involve the other primary teeth. The disease has a rapid progression with extensive involvement of primary teeth often requiring restoration with full coverage crowns. Traditionally, the use of open-faced stainless steel crowns, pre-veneered stainless steel crowns and strip crowns was considered as gold standard and reliable material. These crowns showed poor esthetics, thus with the increase in demand for esthetics, there was a demand of commercialization of new metal free restoration. Zirconia crowns having a natural appearance and biocompatibility came in use. They have paved their way and are recognized as a popular restorative option for restoration of pulpally involved / structurally broken primary teeth owing to their excellent esthetics and high strength.

Methodology: Extensively carious primary posterior teeth requiring pulpotomy or pulpectomy, restorable by extracoronal restoration were selected. After appropriate endodontic therapy, extracoronal restoration of selected tooth was done using Zirconia crowns. Preoperative, immediate post operative, 1 week and I month evaluation was done for various clinical and radiographic parameters including crown retention, marginal adaptation, occlusion, gingival health and interproximal bone level.

Results: On evaluation after 1 week and 1 month period, the crowns demonstrated good results on both clinical and radiographic parameters.

Conclusion: Dealing with esthetic needs in children with extensive loss of tooth structure, using zirconia crowns would be practical and successful. The treatment prescribed is simple and effective and represents a promising alternative for rehabilitation of decayed primary teeth.

ABO Blood Group - A Potential Risk Factor for Early Childhood Caries

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Background: ECC being an aggressive form dental caries usually develops on the smooth surfaces of the teeth which are in contrast to the development of dental caries and hence the progression of ECC may be associated with several other risk factors. Thus, development of ECC is associated with the imbalance between multiple risk and protective factors. Apart from the environmental factors such as diet, oral hygiene, other oral habits, and socio-economic status there are certain host related factors which are under genetic control, and environmental factors can overcome the genetic component of this complex disease.

AIM: To determine if the blood group of an individual is a potential risk factor for the development of early childhood caries.

Methodology: A total of 100 children were randomly selected and were allotted to one of the four groups: Group 1- Children with A positive blood group; Group 2- Children with B positive blood group; Group 3- Children with AB positive blood group; Group 4- Children with O positive blood group. A self-administered questionnaire was prepared to collect the details regarding the socio- economic status, oral hygiene habits, diet and feeding practices. Statistical analysis was done using SPSS software

Results: Children with AB positive blood group are at an increased risk of developing ECC and the children with O positive blood group have a decreased incidence of ECC with a statistical significance of p= 0.025.

Conclusion: Parents of the children with AB positive blood group should follow a superior oral hygiene practice, take periodic dental checkup and take preventive measures like fluoride application and sealant placement to reduce the risk of developing ECC.

A Survey on The Prevalence of Dental Caries Among The Children in Thazekode AUP School Mukkam Kozhikode

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Background: Dental caries is the most prevalent disease worldwide. Dietary habits and oral hygiene have great impact on the progression of dental caries. This prompted us to do a study among the children in Thazekode AUP School Mukkam, Kozhikode, and Kerala in the age group of 9-13 yrs to determine the prevalence of dental caries considering various factors.

Methodology: A comparative cross sectional study was conducted. Respondents were asked questions regarding their age and type of daily snack food consumption and frequency. Children who were medically fit were included and traumatized teeth were excluded. Diagnostic criteria depended on visual evidence of a lesion, with a blunt periodontal probe being used only to remove plaque. Caries were recorded using the decayed missing filled teeth (DMFT) index

Result: Mean age was between 9- 13 years. Out of total population 67.8% children had caries and among studied population 57.4% of children had carious primary teeth and 52% of children had carious permanent teeth. Only 18.5% of the children reported the sweets like chocolates and biscuits per day and rest of the children reported weekly consumption of sweets.11-12yr old children showed maximum intake of sweets per day and per week.

Conclusion: The dental caries prevalence was noted to be low compared to the WHO recommended values.

Explore The Nature for a Better Future

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Background: Maintenance or good oral hygiene is paramount for the reduction of ECC. Brushing has to be instituted when the first teeth start erupting into the oral cavity. Young children tend to swallow the toothpaste before they brush their teeth. The preservatives and detergents used in the toothpastes may be harmful for them. Our commercially available tooth pastes, for children, are expensive, for our rural

population. Homemade, easily available herbal products can be beneficial and safe in a tooth paste, provided they exhibit equal or better antimicrobial activity. Our natural toothpastes contain Triphala and Virgin Coconut Oil as active ingredients, which have been proved to be beneficial in the treatment of several ailments of the alimentary canal including the oral cavity. Methodology: To determine the antimicrobial efficacy of 2 herbal homemade tooth pastes and to compare its activity with a commercially available toothpaste for children.

Materials and methods: The procedure involved agar diffusion method against the prime microorganisms of ECC and subsequent comparative analysis of the zones of inhibition for various formulations. The antimicrobial activity of the dentrifices was evaluated by measuring the diameter of the zones of inhibition. The higher zones of inhibition shows greater antibacterial activity

Results: Both the natural toothpastes containing Triphala and Virgin coconut oil have significant antimicrobial property and is comparable or superior to the commercially available toothpastes

Conclusion: Toothpastes which are homemade containing natural and beneficial phytochemicals, can be effective, safe and economical, for our children.

Primodial and Primary Prevention of ECC - A Review on The Current Prevention Models

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Background: Early childhood caries is one of the most challenging diseases faced by children globally and efforts continue to identify prevention strategies to limit the burden of the disease at both individual and at community level. In India, sheer size of the country, cultural and social diversity, priorities before the government and the differences in political wills in different regions, post a challenge for framing an effective oral health model. Aim To evaluate the current strategies initiated for the prevention of ECC and its effectiveness in the diverse Indian population. To propose a model that can potentially bridge the gap between the enormous need of and miniscule effort in oral health promotion targeting infants and children.

Methodology: A thorough web check on published systemic review and studies based on primordial and primary prevention models of early childhood caries and its effectiveness up to January 2017 was done.

Result: The current researches have shown that parents and caregivers have a huge impact on the success of preventive methods and prevention of ECC. Behavioral and educational programs help to bring about individualistic changes among parents, caregivers and young children.

Conclusion: Early childhood caries being a preventable disease should be addressed at the root level through primordial and primary prevention techniques. Behavioural interventions should be initiated at family level and continued at the school and community levels.

Busting Myths of ECC Through Words of Wisdom

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Background: Early Childhood Caries (ECC) is a serious public health problem in both developing and industrialized countries. Its consequences can affect the immediate and long term qualities of life of child's family. By bringing awareness of this disease particularly in those parents whose children are suffering from ECC, prevention of the disease may become easier.

Methodology: A total of 90 parents of children with ECC were enrolled in the study. They were divided into three groups with 30 parents in each group. Three different methods of education were taken into consideration ie, Audio-Visual Method, Oral Method, Booklet method. Group 1 received education through Audio-Visual method, Group 2 through Oral method, Group 3 through Booklet. A questionnaire was given prior to education to assess their knowledge followed by another questionnaire to evaluate their improvement in terms of knowledge and awareness. The data thus obtained was subjected to statistical analyses.

Results: The results revealed statistically significant p values in Group 1 followed by Group 2 and Group 3 respectively.

Conclusion: The present study concludes that the Audio-Visual method appeared to be more effective than other two methods in improving knowledge of the parents and also in motivating them towards treatment.

Corelation of Dermatoglyphic Patterns and Socio-Behavioural Factors With The Severity of ECC

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Background: The basis of considering dermatoglyphic patterns as a genetic marker for dental caries is that the epithelium of finger buds as well as enamel which is the most susceptible dental tissue to dental caries have ectodermal origin and both develop at the same time of IU life. So any problem at this particular period will have its effect on both enamel as well as on the dermatoglyphic patterns.

Methodology: 50 children diagnosed with ECC along with their parents will be included. The fingerprints of all 10 fingers will be recorded and analysed. DMFT scores will be recorded and the severity of ECC will be determined. The parents will be asked to complete a questionnaire regarding selected social and behavioural variables which includes infant feeding practices, socio-economic factors, dental health behaviours, etc. The severity of ECC will be correlated to these dermatoglyphic patterns and socio-behavioural variables.

Results: An increased frequency of whorl pattern (53%) was seen in the children suffering from ECC followed by loop pattern (32%) and (15%) arch pattern. The severity of ECC was significantly increased in children who had a history of night- time feeding, low socio-economic status and poor oral hygiene practices.

Conclusion: An increased frequency of whorl pattern (53%) was seen in the children suffering from ECC followed by loop pattern (32%) and (15%) arch pattern. The severity of ECC was significantly increased in children who had a history of night- time feeding, low socio-economic status and poor oral hygiene practices

Perceived Impact of Dental Pain on the Quality of Life of Pre-School Children and Their Families

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Background: Early Childhood Caries is one of the most prevalent chronic childhood diseases worldwide and is a major problem both from the public health perspective and for individual families who have to deal with a young child suffering from dental pain. This condition often goes untreated in young children. The consequences of untreated caries affect the oral health-related quality of life of children and their families due to dental pain and aesthetic issues. Moreover, caries can lead to psychosocial problems, impaired speech, and the development of para-functional habits

Methodology: A cross-sectional study was conducted with 300 preschool children in Ghaziabad, Uttar Pradesh. Parents/caregivers answered a questionnaire on socio-demographic information, their child's general/oral health and history of dental pain.

Results: The prevalence of early childhood caries was significantly high than dental pain.

Conclusion: History of dental pain were found to be indicators of perceived impact on Oral Health Related Quality of Life. It is important to be aware of the risk factors that perceived impact the quality of life pre-schoolers in order to facilitates better oral health guidance for parents / caregivers and to promote and to incentive the search for preven- tive dental care for this group.

Comparative Evaluation of The Effect of Topical Fluoride Agents on The Physiochemical Properties of Saliva in Caries Free and Caries Active Children

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Background: Early Childhood Caries, a prevalent and destructive disease of childhood requires conscious efforts for prevention. Normal salivary function is critical to maintain oral health and is extensively studied to diagnose caries since it is easily collectible, non-invasive and contains physiochemical factors which affect caries onset and progression. Superoxide radicals, naturally generated in biological systems are implicated in caries. Antioxidants neutralize these radicals and their effects. Enzymatic and non enzymatic compounds provide saliva its antioxidant effect. Fluoride application enhances the salivary protective factors, increases its antioxidant properties and effectively protects against caries. The aim of this study was to compare and evaluate the effect of topical fluoride agents on the physiochemical properties of saliva in caries free and active children.

Methodology: Eighty children aged 5-6 years, were divided into 2 groups based on dmfs scores. These were further grouped based on the fluoride agent used. Stimulated saliva samples were collected at baseline and one hour after fluoride therapy. Samples were then analysed for pH, flow rate, buffering capacity and total antioxidant capacity.

Results: This study showed that overall, caries active children showed lower flow rates, pH and buffering capacity but higher levels of total antioxidants compared to caries free children. Fluoride application increased the protective actions of saliva. Both fluoride agents had an almost equivocal effect; however fluoride varnish had no significant effect on total antioxidant capacity.

Conclusion: Fluoride intervention increases the protective abilities of saliva and thus may still be considered as a mainstay in preventing dental caries.

Evaluation of Oral Candida With Severe Early Childhood Caries in Hospitalized Children

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Background: Early Childhood Caries (ECC) is one of the most prevalent biofilm-dependent infectious diseases in childhood. Etiology of ECC is multifactorial and complex. Mutans Streptococci (MS) and Lactobacillus species are the main microorganisms that are implicated for the initiation and progression of dental caries respectively. Fungus Candida is frequently detected in high numbers in plaque- biofilms from toddlers with ECC. Prolonged hospitalization is required for children for vast array of diseases, candida being an opportunistic pathogen has a potential to develop in a large number during this period. So, there is a high chance of extensive detection of candida in children suffering from ECC and are hospitalized for a long duration.

Methodology: 60 children were selected and divided into two groups consisting of 30 children each comprising of prolonged hospitalized and non-hospitalization. Each group were sub-divided into 2 subgroups of 15 each comprising of severe ECC and caries free children. Collected saliva samples were analyzed for the presence of candida species.

Results: Candida Species was found in both the S- ECC group and caries free group. Median Candida Species of the S- ECC group was numerically greater in hospitalized children as compared to non-hospitalized children.

Conclusion: There was a significant increase in Candida albicans count in S- ECC children compared to the caries free children

Correlation of Salivary Levels of Streptococcus Mutans of Mother and Child Affected With ECC

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Background: Early Childhood Caries (ECC) is the single most common chronic childhood disease and is known to disproportionately afflict up to 72.7% of underprivileged preschool children in both developing and industrialized countries. Consequences of ECC include higher risk of new carious lesions, risk for delayed physical growth and development, loss of school days, and hospitalizations.

Methodology: 2 ml of unstimulated saliva samples were collected and tested for CFU/ml of S.mutans using mitis-salivarius-bacitracin agar. Saliva samples were plated on selective medium and incubated for 48 hours at 37^0C. The CFU were identified by morphology, size, and color, and counting was done with a digital colony counter. Semi-quantification of the number of colonies was done by multiplying the actual colony count with 1 × 103 to adjust for the dilution factor. The DMFT and def scores of mother and child will be taken, respectively.

Results: Data analysis will be performed using SPSS. The intergroup comparisons were carried out using chi-square, Student's t-test and Wilcoxon signed ranked test. The study is ongoing.

Conclusion: The count of streptococcus mutans, in the mother and child were correlated, with an aim to utilizing the current advances in pediatric dentistry towards the prevention of increased colonization of streptococcus mutans in mothers, to restrict the transmission to infants.

Esthetic and Functional Rehabilitation in Early Childhood Caries in Children and Their Parent's Response

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Background: The labial surface of the upper anterior teeth is one of the most commonly affected surfaces in ECC, which results in the visibility of these carious lesions. There have been several esthetic treatment modalities which have been used to treat carious lesions in the primary teeth in very young children. The management of such mutilated teeth is a challenge due to close proximity of pulp and thin enamel surface area that is available for bonding, cost factor, and to a certain extent the child's cooperating ability. All these factors must be taken into consideration before deciding the choice of restorative material. Many options exist to repair carious teeth in pediatric patients. The goal of dental treatment is to restore the lost tooth structure in order to maintain function and prevent changes in mastication, phonetics, development of parafunctional habits and psychological problems that will affect a child's self-esteem.

Methodology: There have been several esthetic treatment modalities which have been used to treat carious lesions in the primary teeth in very young children. Strip crowns, zirconium crowns, fiber posts and biological posts were given to the children and parent's respose was noted.

Results: There was no difference between the responses of the parents on the treatment modality performed on their children**.**

Conclusion: Esthetic concerns in primary teeth have been studied mainly from the point of view of parents. Esthetics, phonetics, self esteem of the child was greatly improved according to their parents.

Salivary Biomarkers: Prediction of Early Childhood Caries

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Background: Early Childhood Caries (ECC) is the most common chronic infectious childhood disease. The pathophysiological etiology of ECC is associated with early colonization and high level of cariogenic microorganism (S.mutans). Saliva as a host factor (salivary flow, pH, buffering capacity, SIgA) plays an essential role in maintaining the integrity of oral structures.

Methodology: A pilot study was conducted on 6 children with and without ECC. 5ml paraffin - stimulated saliva was collected to evaluate salivary flow, pH, buffering capacity, using GC buffer kit. For S-IgA evaluation ELISA was performed. Real time PCR was done to evaluate bacterial load.

Results: The mean S-IgA was higher in CF subjects (20.8 ± 0.96) compared to ECC (13.36± 0.25), mean salivary flow rate was higher in CF subjects (5.7±0.61) than ECC (3.1±0.25) and mean

buffering capacity was higher (10.83±0.76) in CF compared to ECC (7.76±0.25), mean pH was higher in CF (8.3±0.04) compared to ECC (6.61±0.18). S.mutans bacterial load was higher in ECC subjects compared to S.sanguis while S.sanguis was higher in caries free as compared to S.mutans.
Conclusion: Based on present findings, the study concluded that S.mutans load was higher in ECC subjects while S.sanguis load was found to be higher in CF subjects. The physicochemical properties of saliva (flow rate, ph, buffering capacity, SIgA) can be valid tool in prediction of caries.