

***Selected Salivary Constituents, Physical
Properties and Nutritional Status In
Relation To Dental Caries Among
(4-5) Year's Old Children
(Comparative Study)***

***A Thesis
Submitted to the
College of Dentistry, University of Baghdad
In Partial Fulfillment of the Requirements
For the Degree of Master of Science
In pediatric Dentistry***

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Baghdad – Iraq

2013

1435

Abstract

Background:

Tooth decay is still one of most common diseases of childhood, child's primary teeth are important even though they are temporary. If primary teeth loss prematurely cause possible loss of arch space because they play important role in reserving space for permanent teeth.

Aims of the study:

This study was conduct to assess the physiochemical characteristic of saliva among caries experience preschool children and compared them with caries free children matching in age and gender; in addition to evaluate the relation of these salivary characteristic to dental caries and evaluate relation of body mass index to dental caries and to salivary variables.

Materials and method:

After examination 360 children aged 4-5 years of both gender. Caries-experiences was recorded according to dmfs index by (World Health Organization criteria 1987) during pilot study children with caries experience was divided in to three groups according to decay fraction of decay missing filled surfaces index .Mild with decay surfaces <6 , moderate with $6\leq$ decay surfaces ≤ 13 and severe with decay surfaces >13 and select thirty children with moderate caries experience and compared with thirty caries free children decay missing filled surfaces=0 match in age and gender. Nutritional status of each child assessed by measuring weight and height to calculate body mass index according to formula recorded by World Health Organization, (2000). Unstimulated saliva collected from sixty child under standardized condition and Potential hydrogen (PH) and flow rate were measured .The total antioxidant concentration was measured by using Enzyme Linked – ImmunoSorbent Assay (ELISA);while total protein and inorganic phosphorus

were measured by spectrophotometric analysis; while concentration of calcium ,zinc and copper were measured by using atomic absorption spectrophotometry .

Result:

Statistically highly significant differences were found in concentration of salivary calcium and inorganic phosphorus between caries-experience and caries free children at ($P<0.01$) with higher mean value among caries free group. Statistically significant differences were found in concentration of salivary zinc between groups at ($P<0.05$) with higher mean value among caries free group .While statistically non-significant differences were found in concentration of salivary copper and the body mass index between caries experience and caries free groups.

Statistical non-significant differences were found in salivary flow rate and PH between caries experience and caries free group ($P>0.05$). In addition stastical non-significant differences in concentration of salivary total antioxidant and total protein found between caries experience and caries free group ($P>0.05$).

Positive weak non-significant correlation was found between dmfs index, (ds) fraction of dmfs index and salivary flow rate, total antioxidant ($P>0.05$). A non-significant negative weak correlation was found between dmfs index, (ds) fraction of index and salivary PH, total protein, calcium, phosphorus, zinc and copper.

Positive a non-significant correlation was found between BMI, salivary flow rate, PH, total antioxidant, zinc and copper .While a non-significant negative weak correlation found with dmfs, ds fraction of index and salivary total protein, calcium and inorganic phosphorus in caries experience group.

Furthermore a non-significant positive correlation was found between BMI, salivary flow rate, PH, total antioxidant in addition to that statistically a non-significant negative weak correlation was found with salivary total protein, calcium inorganic phosphorus, zinc and copper among caries free group.

Conclusion:

The findings of the present study showed that inorganic components of saliva might play an important role in remineralization of incipient caries and there is an inverse association between body mass index and dental caries.