Abstract:

Title: Effect of different chewing gums on plaque pH, salivary pH and buffering capacity in children- A randomized controlled trial.

Aim: To determine changes in dental plaque pH, salivary pH and its buffering capacity after the use of three different chewing gums for one month, in children aged 8-12 years.

Methodology: This was a randomized controlled double blinded clinical trial, carried out for a duration of 30 days. Five hundred school children aged 8-12 years were screened and the study population (n=90 children) were included from four schools. Children with dmft/DMFT ≤ 3 were selected. They were randomly divided into three groups with 30 children in each group. Oral prophylaxis was done and saliva and plaque samples were collected after 48 hours, without any oral hygiene measures, for baseline data. The children were then given chewing gum (2 pellets /day) accordingly under supervision for a period of one month. Post-operative data were collected after this intervention period. The data were statistically analysed using SPSS software (v.22), paired t-test and student t-test were done for mean score analysis.

Results: There was a statistically significant difference between baseline and one month in plaque pH, salivary pH and buffering capacity in group-A. Group B and C showed significant difference in plaque pH values, and group C had significance in salivary pH. When compared between boys and girls, a significant difference was seen in plaque pH among all groups. Group A and C also showed significance in salivary pH values. In all the groups the girls showed an increased pH values when compared with boys.

Conclusion: Polyols used as sweetening agents has beneficial effects. In the present study though all the groups used Xylitol as sweetening agent, group A with Xylitol chewing gum showed better results when compared with Recaldent and Propolis chewing gums. The result

cannot be attributed only to the chemical composition of chewing gum used, rather the mechanical stimulation and oral hygiene measures of the individuals also plays a major role.