EFFECTS OF SODIUM BICARBONATE RINSES ON DENTAL PLAQUE pH AND SELECTIVE ORAL MICRO-ORGANISMS IN RADIATED HEAD AND NECK CANCER PATIENTS

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ABSTRACT

The consequence of radiation therapy to head and neck regions causes decreased salivary flow with subsequent reduction in the buffering capacity and alteration of oral microflora. This results in an increased risk of developing radiation-induced caries. The purpose of this study was to investigate the changes in selective cariogenic microflora and dental plaque pH between subjects who received radiation therapy and normal controls following 1M sodium bicarbonate rinses. Dental plaque pH measurements were made at baseline and after 10, 30 and 60 minutes following a sucrose rinse. Culture was carried out to assess levels of Mutans streptococci, Lactobacilli and total bactieral count. Each subject was given distilled water and sodium bicarbonate rinses for a period of two weeks each. Following this, pH measurements and bacterial culture were repeated. The results showed no significant difference in the plaque pH profile after using sodium bicarbonate rinses in both irradiated and non-irradiated subjects. There was a siginifcant difference in Lactobacilli level between the control and experimental groups for all the phases ($p<0.05$). Increased Lactobacilli levels were found in irradiated subjects following sodium bicarbonate rinses.

Conclusion: The baseline plaque pH in irradiated subjects did not show higher acidity compared to normal healthy individuals and showed a delayed reocvery of plaque pH to neutral levels. Following sodium bicarbonate rinses, there was an increased Lactobacilli count without any sustainable effect on the plaque pH. Further research can be done investigate the spectrum of micro-organisms other than MS and Lactobacilli in head and neck radiated patients along with the effect of sodium bicarbonate rinses on these micro-organisms.

KEYWORDS: DENTAL PLAQUE/ RADIATION/ SALIVA/ ORAL MICROFLORA

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