SDM
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"COMPARATIVE EVALUATION OF COMMERCIALLY AVAILABLE REMINERALIZING AGENTS IN INHIBITION OF STREPTOCOCCUS MUTANS : AN IN-VIVO STUDY."

By

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ABSTRACT

Background:

Dental caries is the most common infectious disease of the oral cavity. Among the various organisms present in the oral cavity, *Streptococcus mutans* plays a vital role in caries formation. Several anti-microbial agents are known to inhibit their growth and development. With progressive advancement in research of material sciences, 'remineralization' is at the forefront of preventive dentistry. They act by controlling the remineralization/demineralization cycle around the micro-environment of the tooth. Mineral based remineralizing agents are mainly fluoride and non-fluoride based. Calcium based remineralizing agents like CPP-ACP, CaSP, n-HAp, Calcium Sodium Phosphosilicate, with fluoride are a few to name. Studies have been conducted to compare the remineralizing abilities of various agents in demineralized lesions but limited information is available regarding their anti-bacterial properties. Therefore, this study aims at comparing commercially available remineralizing agents in their efficacy to inhibit *Streptococcus mutans*. The main objective of the study is to evaluate the efficacy of the three remineralizing agents : CPP-ACP, n-HAp and CaSP on *S.mutans* count. And simultaneously determine the best remineralizing agent with respect to it anti-cariogenic property.

Material and Methods:

75 children of a boarding school in the age group of 6-14 years were screened according to the inclusion criteria after attaining an informed consent. These children were then randomly aliquoted into three groups of twenty-five each. Group 1 – CPP-ACP ;Group 2 – n-HAp; Group 3 – CaSP. Baseline stimulated saliva was collected in a sterile container

at mid-day and inoculated into MS agar medium. It was incubated aerobically at 37°c for 48 hrs. Colony forming units (CFUs) were then counted and recorded. Subsequently, Group 1 received GC Tooth Mousse, Group 2 received Aclaim and Group 3 received Enafix with oral hygiene instructions. It was carried out for 2 months and then re-evaluated by saliva collection and incubation. The data collected were statistically analyzed by paired t-test, ANOVA and post-hoc Tukey test.

Results:

The obtained data was entered in excel sheet and analysed statistically. Paired t-test showed that a significant difference in the reduction of *S.mutans* count was seen in Group 1 and Group 3. However, when the groups were compared with each other, no significant difference was seen for *S.mutans* between Group 1 and Group 3 but was seen between Group 1 and Group 2; Group 2 and Group 3.

Also a significant decrease was seen with *S.mitis* in Group 2 and Group 3 along with *S.salivarius* in Group 2.

Conclusion:

Out of the three remineralizing tooth-pastes used only GC Tooth Mousse and Enafix were successful in reducing the *S.mutans* count. However, the amount of reduction done by both pastes when compared with each other was not significant. Aclaim, on the other hand was successful in reducing *S.mitis* and *S.salivarius* count.

Key words: Dental caries, S.mutans, Remineralizing agents, GC Tooth Mousse, Aclaim, Enafix