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Research Article

EFFECT OF TOOTHPASTES ON ORAL MUCOSAL STATUS: A STUDY

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ABSTRACT

There is a wide array of oral mucosal changes that can occur due to numerous external and internal factors. The appearance of any mucosal changes can take off a variety of disease entity. The etiology of these lesions could be associated with soft tissue irritants present in toothpaste used daily for oral cleanliness. Amongst the major irritants plaque plays a vital role creating irritation to oral mucosa and in turn leading to oral mucosal changes. This plaque present sub gingivally can cause dental caries, gingivitis, periodontal problems, and halitosis. Plaque are cleaned using toothbrushes, dental floss, mouth rinses, and dentifrices. Materials and Methods: Total of 20 subjects enrolled, male (n = 9) and female (n = 11) subjects, aged 25 to 35, with healthy mouths were enrolled. Subjects having established gingivitis and at least 20 natural teeth and having a probing depth <3 mm was considered inclusion criteria. Plaque and gingival index (PI and GI, respectively) scores were assessed at days 0 and 30. Differences between groups were compared with Mann–Whitney U test and the mean scores of PI and GI by Wilcoxon test. Statistical difference between the weights of dentifrices tubes on days 0 and 30 was evaluated by Student's t-test. Results: At the end of 30 days of the study, there was statistically significant difference between both the groups for plaque and gingival scores. No adverse effects was seen in both the groups. Conclusion: After trial, both test and control groups showed effective reduction of plaque and gingivitis, which was statistically significant. In this clinical study the aim was to investigate the effectiveness of herbal toothpaste as compared to conventional toothpaste and their role in removing plaque.

Key words:- Mucosa, Gingivitis, Conventional, Non-Conventional, Toothpaste.

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INTRODUCTION

Major role of toothpaste is plaque removal and act as a cleansing agent. Toothpastes promote good oral periodontal health.

Dental plaque deposit on teeth is a concern for both cosmetic and its pathogenic nature. Presence of plaque may be the culprit for dental caries, gingivitis, periodontal problems, and halitosis.

Many mechanical aids are used worldwide to remove or control plaque, including tooth brushes, dental floss, mouth rinses, and dentifrices.[1] Mechanical plaque removal is one of the most accepted methods of controlling plaque and gingivitis. But it is expected that less than one-third of the population can effectively perform mechanical plaque removal. Several chemical preventive agents have beneficial effects in the control of plaque and to reduce or prevent oral disease. Hence, various chemical formulations were tried in dentifrices.[2] Chemicals, mainly triclosan and chlorhexidine, have been added in mouth rinses and dentifrices to prevent plaque and gingivitis. But some of these substances show undesirable side effects such as tooth staining and altered taste.[3] This had led to paying increased attention on using natural ingredients in herbal dentifrices. Herbal ingredients have several benefits; chamomile has anti-inflammatory effect, echinacea has immune stimulatory property, sage and rhatany have anti-hemorrhagic properties, myrrh is a natural antiseptic, and peppermint oil has analgesic, antiseptic, and anti-inflammatory properties.[4] There are limited studies available regarding the efficacy of herbal dentifrices; hence, the present study was undertaken to assess their plaque and gingival preventive action.

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MATERIALS AND METHODS

Study Population:

Total of 20 subjects enrolled, male (n = 9) and female (n = 11) subjects, aged 25 to 35.

Inclusion Criteria:

1) People willing to sign an informed consent form and complete a medical history questionnaire

2) Must be a current non-smoker and not chew tobacco.

3) Have a minimum of 8 teeth in both upper and lower jaws, which are free from obvious untreated caries

4) Having a minimum of 20 teeth.

5) Having a probing depth <3 mm

6) Good general health

7) Presence of established gingivitis.

Exclusion Criteria:

1. Show unwillingness, inability or lack of motivation to carry out the study procedures.
2. subjects under antimicrobial therapy
3. Are pregnant or breastfeeding females
4. Have diabetes.
5. having used mouth rinse containing chemical agents in previous 3 months
6. Have severe oral mucosal problems.
7. Orthodontic banding or removable partial dentures
8. Presence of advanced periodontitis
9. Probing depth >4 mm
10. Having allergy to toothpaste.

Control group consisted of those who were healthy, having no history of known sensitivity or oral mucosal tissue reaction to toothpaste, not having used any herbal dentifrices/mouth wash, and not under any medication for past 3 months.

The study was designed as a randomized, double-blinded, parallel-arm, controlled clinical trial. The participants were randomly divided using the random number.

Plaque and gingival index (PI and GI, respectively) scores were assessed at days 0 and 30. Differences between groups were compared with Mann–Whitney U test and the mean scores of PI and GI by Wilcoxon test. Statistical difference between the weights of dentifrices tubes on days 0 and 30 was evaluated by Student's *t*-test.

RESULTS

All 20 study subjects (9 males and 11 females) completed the 30-day study period. At baseline, there was no significant difference between both the groups for plaque and gingivitis. At baseline, the PI median score for herbal and non-herbal groups was 2.61 and 2.47, respectively. Baseline values for gingivitis in herbal and non-herbal groups were 1.19 and 1.14, respectively. At 30 days, both test and control groups showed 18.8% and 17.4% reduction of plaque and 27.3% and 38.4% reduction of gingivitis, respectively. Reduction of plaque and gingivitis from 0 to 30 days was statistically significant in both the groups. Statistically, there was no significant difference between the groups. No adverse reactions to dentifrices products were observed during the trial.

DISCUSSION

Gingival inflammation and tooth decay are chiefly due to bacterial plaque, continued irritation of external or internal irritants. As a result, it ends up in tissue destruction if left untreated, could progress into additional damage of periodontium.[1] Hence, plaque and periodontitis management facililate in management of healthy oral fissure. Effective correct use of toothbrush and medicated toothpastes will stop from the sequel of periodontitis. The aim of this study was to judge the effectualness of seasoner cleanser within the management of plaque and periodontitis. Hence, the content of the product wasn't the main focus; rather it had been the preventive impact of dentifrices. All twenty study subjects (9 males and eleven females) completed the 20 day study duration. At baseline, there was no vital distinction between each the teams for plaque and periodontitis. At 30 days, each take a look at and management teams showed 4 % and 13.4% reduction of plaque, severally. Reduction of plaque was found statistically vital in each of the groups. Seasonal cleanser was found to be as effective because the standard one in plaque reduction. In accordance with studies done by Sushma et al it had been found that there was (60.36% and 59.89%) reduction, severally, for the seasoner and non herbal dentifrices.[5,6] Many alternative studies tried the effectiveness of seasoner dentifrices in plaque management, compared to the standard one. In duration of thirty days, each groups showed 3 % and 38.4 % reduction of periodontitis, severally. Statistically there was no vital distinction between both groups. It had been found that there was reduction in periodontitis that was found to be statistically vital. We found the seasonal dentifrice to be as effective because the non herbal ones within the reduction of periodontitis. This can be in agreement with the report by Ozaki et al. (28.4 % and 36.3% reduction, respectively).[6] Also, it's the same as the finding in similar study.[7] Its additionally found that slightly lower effectualness of seasoner product on periodontitis whereas Sushma et al ascertained slightly higher periodontitis reduction with seasonerproduct.[5] No adverse reactions to dentifrice product were ascertained throughout the trial within the gift study. There was vital reduction of cleanser tube weights between zero and thirty in each of the teams (P < zero.001), that show that the volunteers had truly used the toothpastes. It had been additionally found in their study that use of medicated dentifrice considerably reduces microorganism count [8]. No vital distinction between the consequences of

seasoner and traditional toothpastes on secretion of Ph scale values[2]. The management cluster composed of halide and triclosan ingredient in dentifrice. Triclosan is an antimicrobial agent with well-established safety and effectualness.[4] Halide has anti caries impact, however a number of the constituent of the standard toothpaste have undesired effects like staining and style alteration. Hence, natural product with value-added advantage or products are suggested to be used. It's been proved in several of the studies that the anti-plaque and anti-gingival effects of seasoner dentifrice, were such as those of standard toothpaste.[9] The present study had tried that seasoner dentifrice don't cause any adverse effects on the oral fissure and adverse effects on the periodontium. Hence, medicated seasoner toothpaste will be safely accustomed management plaque and periodontium[10,11].

CONCLUSIONS

After the completion of the study, we conclude that tartar management toothpastes demonstrate effectualness with relevance of managing plaque and calculus. There was an effective reduction in plaque. There was no adverse reaction or allergies. Thus, is vital for Dentists to contemplate that toothpaste may additionally have the potebntial to cause inflammatory oral membrane reaction resembling apthous ulceration. No adverse reactions to dentifrice product were ascertained throughout the trial. It will be terminated that clinically, seasoner dentifrice is as effective as non-herbal (conventional) dentifrice within the management of plaque and periodontium. Addition of chemical agents in dentifrices aids in plaque management and improves oral health. Importance of taking an honest throughout examination procedure has been proved. This includes history of daily measures and that explicit complete of the cleanser is being employed in removing the plaque on daily.

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