

ORIGINAL RESEARCH

Conventional & Herbal dentifrice in Preventing Periodontal Disease: A Comparative Study

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ABSTRACT:

Background: The growing range of over-the-counter conventional and herbal-based dentifrices in the market. The present study was conducted to compare the efficacy of conventional dentifrice & herbal dentifrices in periodontal diseases.

Materials & Methods: This study was conducted on 60 patients with periodontal diseases of both genders. Patients were divided into 2 groups of 30 each. Group I patients used conventional dentifrices and group II used herbal dentifrices. All patients were subjected to plaque index, bleeding index and gingival index. All the indices were evaluated using a visual analogue score of 0-3. The score for the assessment will be nil - 0, mild - 1, moderate - 2, and severe - 3. **Results:** The mean plaque score in group I at baseline was 1.72, at 2 weeks was 1.63, at 4 weeks was 1.34 and at 6 weeks was 1.06. The mean plaque score in group II at baseline was 2.16, at 2 weeks was 1.92, at 4 weeks was 1.76 and at 6 weeks was 1.54. The difference was significant ($P < 0.05$). In both groups, there was significant reduction in bleeding and gingival score ($P < 0.05$). **Conclusion:** Conventional dentifrices found effective in treating gingivitis and periodontitis as compared to herbal dentifrices.

Key words: Bleeding, Conventional tooth paste, Periodontal diseases.

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INTRODUCTION

Gingivitis is the mildest form of periodontal disease and is elicited by the accumulation of plaque on the tooth and the soft-tissue adjoining the tooth. Accumulation of dental plaque has been identified as the primary cause of this disease. It is a reversible condition but when left untreated, gingivitis can progress to periodontitis, leading to loss of bone and connective tissue which is the most accepted cause of tooth loss in all walks of life globally.¹

Elimination of microbial dental plaque biofilm prevents gingivitis, periodontitis, and dental cavities. Although, brushing teeth twice a day and daily flossing is highly effective in plaque reduction, over 50% of adults have gingivitis on an average of 3 to 4 teeth. Dental plaque appears as yellowish or grey deposits which can be only removed mechanically. Its removal is necessary in controlling disease activity. Regular removal of the plaque is, therefore, essential and has been the cornerstone of

disease prevention. It can be subgingival or supragingival depending upon their location.²

Bacteria in dental plaque are one of the main factors causing periodontal inflammation, therefore, careful plaque control is very important. However, mechanical plaque removal is inadequately performed by most members of the population.³ Various antiplaque agents such as tooth paste, tooth powder are available. All provides significant results. It should have anti-inflammatory, antioxidant, and antiplaque activity. The growing range of over the counter conventional and herbal based dentifrices in the market.⁴ The present study was conducted to compare the efficacy of conventional dentifrice & herbal dentifrices in periodontal diseases.

MATERIALS & METHODS

This study was conducted in the department of Periodontics. It comprised of 60 patients with periodontal

diseases of both genders. Patients were informed regarding the study and written consent was taken. The study was approved from institutional ethical committee.

Patients were divided into 2 groups of 30 each. Group I patients used conventional dentifrices and group II used herbal dentifrices. All patients were subjected to plaque index, bleeding index and gingival index. Plaque index was scored on buccal, lingual, mesial, and distal surfaces of six teeth such as 16, 12, 24, 44, 32 and 36. Bleeding index was measured by guiding probe through the gingival sulcus in the first and third quadrants from the buccal aspect and in

the second and fourth quadrant from the oral aspect. Gingival index was scored on the buccal marginal gingiva of the Ramfjord teeth. By summing the individual GBI scores and dividing that sum by the number of sites graded for each subject. All the indices were evaluated using a visual analogue score of 0-3. The score for the assessment will be nil - 0, mild - 1, moderate - 2, and severe - 3. Results thus obtained were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 60		
Groups	Group I (conventional dentifrices)	Group II (herbal dentifrices)
Number	30	30

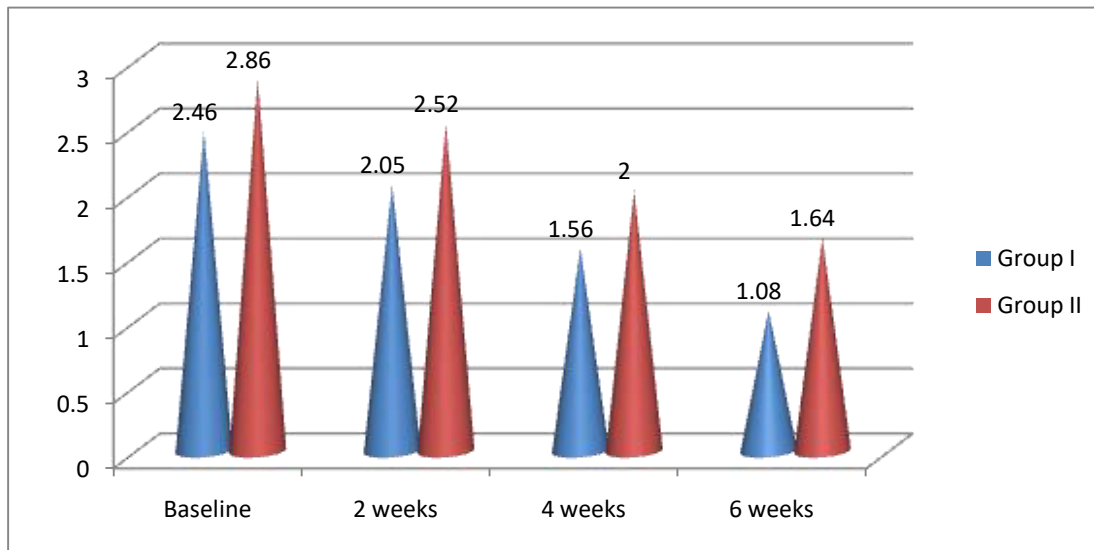
Table I shows that group I were given conventional dentifrices and group II herbal dentifrices.

Table II Comparison of plaque index

Duration	Group I	Group II	P value
Baseline	1.72	2.16	0.05
2 weeks	1.63	1.92	0.02
4 weeks	1.34	1.76	0.04
6 weeks	1.06	1.54	0.01

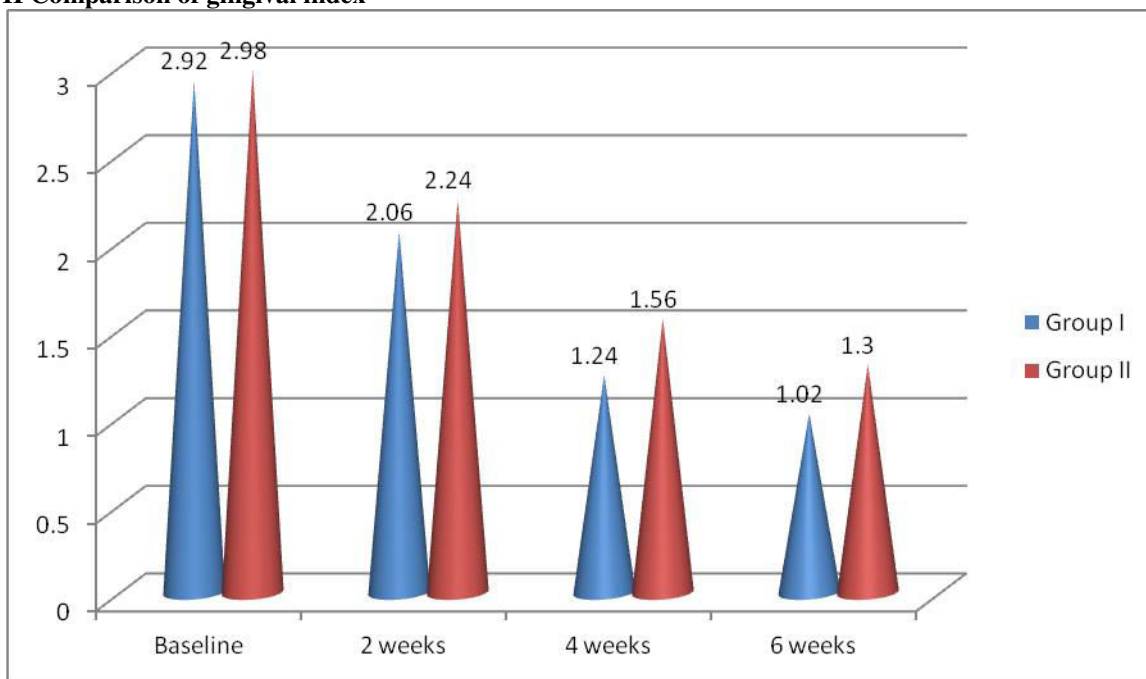
Table II shows that mean plaque score in group I at baseline was 1.72, at 2 weeks was 1.63, at 4 weeks was 1.34 and at 6 weeks was 1.06. The mean plaque score in group II at baseline was 2.16, at 2 weeks was 1.92, at 4 weeks was 1.76 and at 6 weeks was 1.54. The difference was significant (P< 0.05).

Graph I Comparison of bleeding index



Graph I shows that the bleeding index at baseline, 2 weeks, 4 weeks and 6 weeks in group I was 2.46, 2.05, 1.56 and 1.08 respectively. In group II, it was 2.86, 2.52, 2.0 and 1.64 respectively. The difference was significant (P < 0.05).

Graph II Comparison of gingival index



Graph II shows that the gingival index at baseline, 2 weeks, 4 weeks and 6 weeks in group I was 2.92, 2.06, 1.24 and 1.02 respectively. In group II, it was 2.98, 2.24, 1.56 and 1.30 respectively. The difference was significant ($P < 0.05$).

DISCUSSION

Dental plaque is a soft, non-mineralised, microbial biofilm that consists of complex communities of bacterial species that reside on tooth surfaces or soft tissues. It accumulates on and adheres to teeth, dental restorations and artificial appliances in the mouth. It is composed of bacteria, salivary glycoproteins arranged in matrix of extracellular material.⁵ If there is complete removal of plaque, then only caries can be prevented. For removal of plaque, approaches such as mechanical removal of plaque, local or systemical use of antimicrobial drugs, alteration in plaque biochemistry, prevention of bacterial attachment to the tooth surface; and alteration of plaque ecology is important. The removal of plaque from interdental surfaces remains an important life-long objective for dental patients.⁶ The need for additional help in controlling bacterial plaque provides the rationale for patients to use antimicrobial dentifrices in addition to their mechanical oral hygiene regimens. A common problem with all interdental cleaning aids is patient dexterity and motivation.⁷ The present study was conducted to compare the efficacy of conventional dentifrice & herbal dentifrices in periodontal diseases.

In present study, group I were given conventional dentifrices and group II herbal dentifrices. Each group had 30 patients each. Eid and Talic⁸ compared toothbrushing with dentifrice and with water and found that the former

was more efficient in removing dental plaque. In that study, the authors used parallel groups and toothbrushing was not performed by the participants, but rather by a dentist.

We found that mean plaque score in group I at baseline was 1.72, at 2 weeks was 1.63, at 4 weeks was 1.34 and at 6 weeks was 1.06. The mean plaque score in group II at baseline was 2.16, at 2 weeks was 1.92, at 4 weeks was 1.76 and at 6 weeks was 1.54. Similar results were seen in the study of Lakshmi SS.⁹

We observed that the bleeding index at baseline, 2 weeks, 4 weeks and 6 weeks in group I was 2.46, 2.05, 1.56 and 1.08 respectively. In group II, it was 2.86, 2.52, 2.0 and 1.64 respectively. Gingival index at baseline, 2 weeks, 4 weeks and 6 weeks in group I was 2.92, 2.06, 1.24 and 1.02 respectively. In group II, it was 2.98, 2.24, 1.56 and 1.30 respectively. Our results are in agreement with Moran J et al.¹⁰

Dentifrices have also been used as plaque removal aids, especially because of their abrasive agents. The commonly used abrasive agents include silica, carbonates, alumina and more recently, perlite. In addition to fluoride release and presence of antimicrobial agents, the actual adjunct role of dentifrices to mechanical removal of dental plaque is contradictory. Toothbrush is the most used plaque control device. As adjuncts to toothbrushing, dentifrices and rinsing solutions have been proposed, in order to enhance the plaque removal efficacy. Regular oral hygiene is

mandatory for dental plaque control. It is dependent on the individual's instruction and motivation and use of appropriate means. This way, within the available arsenal for controlling supragingival plaque, toothbrush, dental floss, interdental brushes, and end-tufted brushes among others are often used.¹¹

CONCLUSION

Conventional dentifrices found effective in treating gingivitis and periodontitis as compared to herbal dentifrices.

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