



Disclosing Agents As An Educational Tool for Effective Oral Hygiene Maintenance

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Abstract

Introduction: Dental plaque is the main etiological agent for the causation of periodontal diseases. In oral health maintenance removal of dental plaque plays an important role and disclosing agents helps to identify the plaque deposits and complete removal. Hence the aim of the present study is to evaluate the efficacy of disclosing agents in improving the quality of daily oral hygiene practices.

Materials and Methods: The present study was conducted among 100 individuals who were divided into two groups. Oral prophylaxis was performed in both the groups at baseline then Group A(N=50) were instructed to use disclosing agent and Group B(N=50) were taken as control who did not use disclosing agents. Modified plaque index by Quigley hein and modified Sulcular bleeding index were assessed at base line and after 4 weeks.

Results: Out of 100 patients the mean plaque index score in Group A was 2.40 preoperatively and 0.86 post operatively, in group B the mean plaque index scores was 2.40 preoperatively and 1.99 postoperatively. The mean sulcular bleeding index score in Group A was 0.914 preoperatively and 0.23 post operatively, in group B the mean Sulcular bleeding index scores was 0.73 preoperatively and 0.28 postoperatively. All the values were statically significant. ($p < 0.05$)

Conclusion: The first step for the occurrence of periodontal diseases is plaque accumulation on the teeth. The usage of disclosing agents had made them to visualize the dental plaque and motivates them to an effective oral hygiene maintenance. The dentists play a significant role in professional educating and making the patients to maintain an effective oral hygiene.

Keywords: Dental Plaque, Disclosing agent, Periodontal Disease

Introduction

An established and proven relationship between general health and oral health representing the notion that maintenance of good oral health contributes to maintaining good overall health of an individual. ^[1] Oral health care promotion plays a pivotal role in maintenance of systemic health and should be of prime importance. ^[2] Public health care providers play a significant role in educating and evaluating the effective maintenance of oral health by an individual. ^[3]

An early age education about the maintenance of good oral hygiene maintenance proves to be effective at public level. So for maintenance of good oral hygiene, detection and removal of local factors such as dental plaque plays a significant role during training process. ^[4] Dental plaque contributes to be a significant factor for the occurrence of various periodontal diseases and conditions. Early detection and removal of dental plaque

plays an important role in effective oral hygiene maintenance. Dental plaque will be formed as a biofilm on the tooth surfaces and removal of this biofilm is important in oral disease prevention which can be achieved by personal or professional antiplaque measures. Tooth brushing is the main personally applied antiplaque measures for effective maintenance of oral health. ^[5]

As dental plaque will be adherent to the teeth structures and will be invisible to the naked eye certain agents (disclosing agents) will be used to make invisible plaque visible. With the help of these agents we can easily identify plaque on the tooth structure and facilitates effective removal of plaque and thus helps in maintenance of good oral hygiene. The amount of colouration by disclosing agents depends on the amount of plaque formed on tooth surfaces. So they can be used to educate the public for good maintenance of oral health and overall health. With this background, this study was aimed to educate and motivate the dental college students with the help of disclosing agents. ^[6]

Materials and Methods

The present study was conducted on 100 subjects, selected from the Department of Periodontology in a Teaching dental Institution. The Study was approved by the Institutional Ethical Committee. After explaining the procedure, written and informed consent was taken from patients who are willing to participate in the study. A total of 100 patients in the age group of 18-50 years (30.49 ± 10.27 years) were considered for the study, after obtaining due approval from the Institutional Ethical Committee. Due to the nature of this research, participants of this study did not agree for their data to be shared publicly, so supporting data is not available. Patients were explained about the procedure and

informed consent was obtained. The subjects were selected based on the following criteria.

Inclusion criteria includes Patients aged between 18 and 25 years, Patients are suffering from chronic gingivitis.

Patients who understand and follow the instructions

Exclusion criteria includes subjects who underwent periodontal therapy for the past 6 months and using antimicrobial mouth wash, Subjects with systemic diseases, Subjects who lack manual dexterity.

The subjects were divided into two groups Group A consists of 50 patients and group B consists of 50 patients. Clinical parameters such as plaque index was assessed by Turesky-Gilmore-Glickman Modification of the Quigley Hein Plaque Index and Modified Sulcular bleeding index by Mombelli.

At baseline visit clinical parameters such as plaque index and bleeding index were recorded and the subjects were divided into two groups. All the subjects in both groups underwent oral prophylaxis at baseline and were educated about how to brush by using modified bass brushing technique.

In group A the subjects were directed to use chewable type of disclosing agents for 2 to 3 minutes before brushing and they were educated about the different colours that stain on their teeth about mature plaque and immature plaque and they were instructed to completely remove the stained parts from their teeth during brushing. In group B no disclosing tablets were given.

All the subjects were recalled after 4 weeks and clinical parameters were assessed.

Statistical analysis was carried out using SPSS software by unpaired *t*-test. Significance value was set at $*P \leq 0.05$.

Results

This study included a total of 100 chronic generalized gingivitis subjects with mean age of 25 ± 1.25 years Out of

100 patients the mean plaque index scores in Group A was 2.40 preoperatively and 0.86 post operatively, In group B the mean plaque index scores was 2.40 preoperatively and 1.99 postoperatively. The mean modified sulcular bleeding score in Group A was 0.914 preoperatively and 0.23 post operatively, In group B the mean modified Sulcular bleeding index scores was 0.73 preoperatively and 0.28 postoperatively [Table 1]. All the values were statically significant. ($p < 0.05$)

Discussion

The results of the present study indicated that there is an increased awareness and compliance among subjects in removing the plaque and maintaining oral hygiene with usage of disclosing agents. Few studies had stated the positive effect of using disclosing agents at home for effective oral hygiene maintenance. There was no gender discrepancies between the two groups. There was a statically significant reduction between preoperative and post-operative plaque index scores and modified Sulcular bleeding index scores in subjects who used disclosing agents which showed the positive effect of using disclosing agents when compared to subjects who did not use them before brushing. The results of the present study were supported by the results of the study conducted by montevecchi et al.^[7] But the results of the present study were contradicted by the study done by Paulo et al due to the confounding factors such as dexterity of the subjects in their study.^[8]

Repeated and well demonstrated oral hygiene education plays a significant role in patient motivation and orientation for better oral hygiene maintenance. Thus the role of health care provides play a significant role in educating and motivating the people for an effective oral hygiene maintenance.^[4] Literature also supports the usage of disclosing agents during periodontal surgeries resulted in an efficient and effective plaque removal

from the radicular surfaces during the debridement. Fasoulas et al conducted a study and emphasized the importance of the detection of the dental plaque and establishment of effective oral health programmes for better oral hygiene maintenance.^[7]

Along with the usage of disclosing agents for an effective plaque removal professional supervision and personally generated motivation play a significant role.

Conclusion

The first step for the occurrence of periodontal diseases is plaque accumulation on the teeth. The usage of disclosing agents had made them to visualize the dental plaque and motivates them to an effective oral hygiene maintenance. The dentists play a significant role in professional educating and making the patients to maintain an effective oral hygiene.

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Legend Table:

Table 1: Preoperative and postoperative mean plaque index and mean Sulcular bleeding index scores

	Plaque Index Pre Operative	Plaque Index Postoperative	P Value	mSBI Index Preoperative	mSBI Index Post Operative	P Value
Group A	2.40	0.86	0.033*	0.91	0.23	0.015*
Group B	2.40	1.99	0.042*	0.73	0.28	0.021*

*Indicates $P \leq 0.05$ statically significant