Research Article

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To Compare the Clinical Efficacy of Hiora, Chlorhexidine and Normal Saline Mouthwash in Management of Chronic Gingivitis

Rakhee[1] Sudhanshu Kumar[2*] Parthsarthi Gautam[3] Chintu Kumar Singh[4] Niharika[5] Meeta[6]

[1]Senior Lecturer, Department of Oral Medicine and Radiology, Vananchal Dental College and Hospital, Garhwa, Jharkhand, India.
[2]Senior Resident, Department of Oral Medicine and Radiology, Jawahar Lal Nehru Medical College and Hospital, Bhagalpur, Bihar, India.
[3]Senior Lecturer, Department of Oral Medicine and Radiology, B.R. Ambedkar Dental College and Hospital, Patna, Bihar, India.
[4]Dental Officer, Department of Oral Pathology and Microbiology, Dental Office Army, Raiganj, West Bengal, India.
[5]Senior Lecturer, Department of Pedodontics, B.R. Ambedkar Dental College and Hospital, Patna, Bihar, India.
[6]Senior Lecturer, Department Periodontology and Oral Implantology, M.M.D.C.H., Darbhanga, Bihar, India.

ABSTRACT

Background: Gingivitis is the term that refers to the inflammation of the gingiva or the soft tissue of the oral cavity that immediately surrounds each individual tooth (Majumdar*et al)* Under the classification system of the American Academy of Periodontology, gingivitis was defined as the inflammatory lesion confined to the tissues of the marginal gingiva. Gingivitis is characterized by inflammation and bleeding of the gums.The main cause of gingivitis is plaque that forms on the surface of teeth and gums. As a main stay to maintain oral hygiene, mechanical plaque control measures are use

Materials and Methods: The study is designed to be conducted among patients attending the department of Oral Medicine and Radiology. The study group comprised of 90 patients with chronic gingivitis aged between 20 and 45 years of either gender reporting to the outpatient Department of Oral Medicine & Radiology in Buddha Institute of Dental Sciences & Hospital, Patna.

Results Mean Gingival index is Minimum in Hi-Ora mouthwash and Maximum in Normal Saline. Mean Plaque index is Minimum in Hi-Ora mouthwash and Maximum in Normal Saline.

Conclusions Post-hoc test showed that the mean Gingival Index was significantly higher for Saline group than Chlorhexidine and Hi-Ora mouthwash groups. No significant difference was seen between Chlorhexidine and Hi-Ora mouthwash groups for the Gingival Index Similarly, *post-hoc* test showed that the mean Plaque Index was significantly higher for Saline than Chlorhexidine and Hi-Ora mouthwash groups.

Keywords: Normal Saline, Hi-Ora, Chlorhexidine mouthwash, Chronic Gingivitis.

INTRODUCTION

Gingivitis if not treated can lead to the destruction of periodontal apparatus resulting in periodontitis. Periodontics is a more severe and destructive gum disease.[1]This suggests that the prevention of periodontal diseases must be based on measures directed at supragingival plaque control. This prevents gingivitis and is a primary requisite for good oral hygiene . mechanical means used to remove supragingival plaque. Despite the availability of numerous oral hygiene tools, even the most motivated person will not always be able to completely remove all the plaque . The recognized inadequacies in the mechanical plaque control practices of many individuals have fueled a year-long search for chemical agents to control plaque .Dental plaque formed on the gum margin and adjacent tooth surfaces causes inflammation of gums.[2]Dental plaque has been proved by

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***Correspondence Dr. Sudhanshu Kumar.**
Department of Oral Medicine and Radiology, Jawahar Lal Nehru Medical College and Hospital, Bhagalpur, Bihar, India.
Email: Not Disclosed

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extenensive research to be a paramount factor in initiatiprimary way on and progression of gingival and periodontal diseases.[3] Toothbrushes (manual or electric), floss, wood sticks and interdental brushes are various measures to control gingival plaque.The primary way of prevention of oral Disease is plaque control and prevention of plaque accumulation on tooth and gingival surface.[4]

MATERIALS AND METHODS

The study is designed to be conducted among patients attending the department of Oral Medicine and Radiology

Exclusion criteria

1.Subjects with advanced periodontal inflammation.

2.Subjects with severe mal-alignment of teeth [5]

3.Hypersensitivity to the mouth rinses .

4.Pregnant females and Nursing mothers.

5.Patient unwilling to complete the treatment pro.Knownsystemicdisease

Procedure

Total 90 subjects will be selected for the study.The study model consisted of three groups-GROUP-1 ,GROUP-2, and GROUP-3.The subjects will be allotted in the following groups as follows-

Group 1: Patient with chronic gingivitis went under oral prophylaxis and treated with NORMAL SALINE will be in this group.30 subjects will be included in thisgroup.

Fig 1: Armamentarium used in the study

Group 2: Patient with chronic gingivitis went under oral prophylaxis and treated with HI-ORA MOUTHWASH will be in this group. 30 subjects will be included in this group.

Group 3: Patient with chronic gingivitis went under oral prophylaxis and treated with chlorhexidine will be in this group. 30 subjects will be included in this group.

Following indices will be recorded:[2]

1. Approximal plaque index

2. Gingival index. (Loe and Silness)

Recordings will be made at 0thand 5thday for all the subjects and will be compared

RESULT

Table 1: Plaque and gingival index including p value and post- hoc test.

	Group						P value	Post-hoc test
	Chlorhexidine		Hi-Oramoutwash		Normal Saline			
	Mean	SD	Mean	SD	Mean	SD		
Gingival Index	0.70	0.25	0.66	0.16	1.59	0.55	P<0.0001; Sig	NS>CHX>HO
Plaque Index	0.80	0.31	0.77	0.30	1.86	0.61	P<0.0001; Sig	NS>CHX>HO
P<0.05. , Sig: Significant, NS: Not significant								

Table 2: Plaque and gingival index including p value.

	Post-hoc test additional details	P value
Gingival Index	Chlorhexidine vs Hi-Oramoutwash	0.918; NS
	Chlorhexidine vs Normal Saline	0.0001; Sig
	Hi-Oramoutwash vs Normal Saline	0.0001; Sig
Plaque Index	Chlorhexidine vs Hi-Oramoutwash	0.94; NS

Gingival index for Normal Saline is 1.5Hi-ora is .66 and for Chlorhexidine is .70.So,we get to know that Gingival index Minimum in group using Hi-ora mouthwash and Maximum in group using Normal Saline.In Table 1 we also observed that Plaque index for Normal Saline is 1.86 ,for Hi-ora is .77 and for Chlorhexidine is .80.So,we get to know that Plaque index is Minimum in group using Hi-ora mouthwash and Maximum in group using Normal Saline. Antiseptic mouth rinses are widely recommended and marketed to improve oral Health [6]

Table 3: Gender Distribution.

Group	Gender	
	Male	Female
Chlorhexidine	20 (67%)	10 (33%)
Hi-Oramoutwash	21 (70%)	9 (30%)
Normal Saline	19 (63%)	11 (37%)

Male distribution for Chlorhexine is 67% and female Distribution for same is 33%.Male distribution for Hi-ora is 70 % and female distribution for the Same is 30 %.Male distribution for Chlorhexidine is 67 % and female distribution for the Same is 33 %.

Table 4: Mean gingival Index .

Gingival Index		
Chlorhexidine	Hi-Oramoutwash	Normal Saline
0.70	0.66	1.59

we observe that Mean Gingival Index for Normal Saline is 1.59, for Hi-Ora is .66 and for Chlorhexidine is .70.So we get a conclusion that Mean Gingival index is Minimum in Hi-Ora mouthwash and Maximum in Normal Saline. The clinical parameters at baseline level of all the groups showed no significant differences which clearly point to the random selection of individuals in various groups.[7]

DISCUSSION

As dental plaque is a well known etiologic factor for gingivitis [8] The present study conducted was to compare the clinical efficacy of Normal Saline,Hi-Ora and Chlorhexidine in treatment of Chronic Gingivitis .In this all the patient went under oral prophylaxis and gingival index and plaque index were recorded at day 0 and Day 5 and compared.

In the past study gingival index and plaque index were recorded at day 0 and Day 6 and compared.In the past study 150 patients were taken.In the present study ,90 patients were taken.

Dental plaque formed on the gum margin and adjacent tooth surface causes inflammation of gums. Dental plaque is a structural resilient ,grayish yellow substance that adheres to the intraoral hard surfaces including removable and fixed restoration [9]The bacteria in the plaque release toxins which cause swelling, redness and bleeding of gums. Greatest challenge in dentistry is to control of Dental biofilm.[10] Periodontitis is a more severe and destructive gum disease which may progress irreversibly in breaking down supporting periodontal structures. It is generally accepted that the formation of dental plaque at the tooth /gingiva interface is one of the major cause of gingival onflammation and dental caries .[11]Bacteria in dental plaque are one of the main factors causing periodontal inflammation; therefore, careful plaque control is very important. As it is impossible to eliminate oral bacteria causing dental plaque, it is important to achieve plaque control by limiting growth of harmful bacteria. Bacterial flora in plaque is variable according to the site such as – sub gingival.

CONCLUSION

Within the limitation of this study chlorhexidine gluconate and herbal mouthwash (Hi-Ora) showed similar anti plaque activity with later showing no side effects.[12] From the findings of the present research following condition can be drawn :

Post-hoctest showed that the mean Gingival Index was significantly higher for Saline group than Chlorhexidine and Hi-Oramoutwash groups.

No significant difference was seen between Chlorhexidine and Hi-Oramoutwash groups for the Gingival Index

Similarly, *post-hoc* test showed that the mean Plaque Index was significantly higher for Saline than Chlorhexidine and Hi-Oramoutwash groups.

No significant difference was seen between Chlorhexidine and Hi-Oramoutwash groups for the Gingival Index.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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