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Impact of Sesame Oil vs Chlorhexidine Mouthwash on Gingivitis: A Randomized Controlled Study

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ABSTRACT

Aim: To evaluate the effectiveness of 0.2% chlorhexidine and sesame oil (SO) in Oil Pulling Therapy (OPT) for patients with gingivitis. **Materials and methods:** 75 participants were divided at random into group A- Scaling only, B- Scaling with prescribed SO and C- Scaling with Chlorhexidine respectively. Participants were instructed regarding the use of OPT with SO and Chlorhexidine in addition to their regular dental hygiene regimen for 30 days. **Results:** The mean plaque and gingival index in group B and C was reduced after 1 month compared to baseline scores. Statistically significant variance showed between group A and B and group A and C respectively. OPT decreased gingivitis and plaque after a month but group B and C did not show significant variance. **Conclusion:** Because oil pulling is a domestic remedy that assists in avoiding gum infections in nations with restricted resources, we need to spread knowledge of it.

Introduction

Only the underlying connective tissue and gingival epithelium are impacted by gingivitis, an inflammation of the gingival tissues. Gingivitis often manifests as a glossy surface, discomfort, redness, inflammation, and gushing when probed. It has been established that the long-term type of gum disease caused by plaque is the most prevalent kind. Patients may find it difficult to maintain their oral cleanliness for a variety of reasons, including elevated plaque accumulation brought on by the laborious nature of mechanical elimination of plaque strategies, an impairment of drive and ability to manually perform improper cleaning methodologies, and inadequate consumption of additional dental hygiene items like floss, mouthwash, and tongue cleaners.[1] Mouth rinses and other chemical-based plaque control measures are necessary for the optimum preservation of oral wellness, however continuous use of them has some disadvantages. Therefore, it turned out that medicinal substances were needed.[2]

Swirling oil in one's mouth for general and oral wellness advantages is known as "oil pulling" / "oil swishing." For several decades, OPT with sesame oil has been widely utilized to cure for repairing gums as well as teeth. Oil pulling has its origins in the Ayurvedic text Charaka Samhita, where it is known as Kavala Graha/Kavala Gandhoosha. It is believed to fortify the gums, enamel, and a jaw and to inhibit cavities,

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gum recession, unpleasant smells, dry mouth and throat, and chapped lips, as well as systemic illnesses ranging from migraines and headaches to diabetes and asthma.[3]

A cold-pressed natural fats like sesame, sunflower, and coconut oils are very helpful, even if processed oil also "pulls" viruses, microbes, and organisms from the buccal surface of mouth. Oils that have been cold-pressed are advised for OPT since they are free of trans fats like commercial oils that are produced using strong solvents derived from petroleum.[4]

The chemical compounds found in sesame oil include sesamin, sesamolin, and sesaminol, which have anti-oxidants, detoxifying, and anti-bacterial effects. It stops the cycle of peroxidation of lipids. The cost is lower than that of chlorhexidine. Sesame oil produces radicals that destroy microbial barrier cells and kill microorganisms. Sesame oil is effective versus Lactobacillus acidophilus and Streptococcus mutans. Gingivitis can be effectively treated using sesame oil's saponification reaction, emulsification reaction, and mechanical cleansing action.[5]

Sesame oil and 0.2% chlorhexidine oral rinse were compared and evaluated as an adjuvant to scaling in plaque-induced gingivitis because there is a lack of information regarding the relative effects of SO and chlorhexidine on the periodontium.

Materials and Methods

The purpose of the current investigation was to assess and contrast the effects of OPT with rinse containing sesame oil and chlorhexidine on individuals suffering from gingivitis. The present research was a single blinded randomised control trial in which 75 participants were chosen, and they were dispersed at random. Subjects of age group 15 to 25 years with indexed teeth having mild to moderate plaque and gingivitis, should not have used any mouthwash/rinses for past six months and willing to participate in the study for one month daily were included in the study. Subjects who are periodontal pockets or suppuration, expecting and breast-feeding mother or having a history of using antibiotics during the last month, history of past and recent smoking and allergy to experimental oil used, not systemically healthy were excluded from the study.

After selection of patients, consent form is signed. The baseline plaque index (PI) was recorded based on Silness P and Loe H (1967) on indexed tooth and gingival index (GI) was obtained based on Loe H and Sillness J (1963) on indexed tooth by the single operator who is blinded regarding the mouth rinse used. With a visual readout, the mouth mirror, explorer, and plaque-disclosing agent were used for all clinical evaluations. The study sample was divided into:

Group A: Patient received only scaling along coupled via regular usual dental hygiene regimen for 30 days.

Group B: Scaling with oil pulling with sesame oil for 1 month- 30 sachets of 10ml SO (Idhayam Wealth - Oil Pulling) were given to all 20 patients. Patients were instructed to take one sachet of SO in the oral cavity in morning before breakfast, with an empty stomach. Swish and swirl in the oral cavity and through the tooth for about 20 minutes. The oil gets thinner and whiter from viscous. Spit out and wash your mouth and teeth thoroughly from water coupled via regular usual dental hygiene regimen for 30 days.

Group C: Scaling with mouthrinse with 0.2% chlorhexidine mouthwash for 1 month- Patients were instructed to use 0.2% chlorhexidine (Hexidine) mouthwash based on manufacturer instructions that fill the measuring cup with 10 millimetres. Rinse for a duration of 30 to 60 seconds twice a day. Do not swallow; instead, spit it out. A minimum of 30 to 60 minutes should pass before consuming any food or liquids coupled via regular usual dental hygiene regimen for 30 days.

After a month, the same operator approached the participants for follow-up and documented the measurements of indices used in the study.

For the purpose of interpreting the results, a p-value of ≤0.05 was deemed statistically significant. SPSS software, version 18.0 (Chicago, USA), was used to analyze the data that was gathered and to run statistical tests. One-way ANOVA was used for intergroup comparisons, while paired t-tests were used for intragroup comparisons.

Results

After one month, Table 1 shows that the mean PI score values for groups B and C differed significantly and statistically from group A. There was no significant statistical variance among groups B and C, according to an intergroup assessment. Even yet, the index score dropped more for the group B. After a month, Table 2 displays that the mean GI scores in groups B and C differed statistically significantly from those in group A. There was no statistically significant variation among groups B and C, according to an intergroup examination. Even yet, the index score dropped more for group B.

Table 1: Mean Values of Plaque Index Score

Group	Base-line	1 month	Inter-group comparison	
Group A	1.8	1.3	Group	p-value
			A-B	<0.05*
Group B	2.0	0.80	A-C	<0.05*
Group C	1.9	0.82	B-C	>0.05
F value	3.54	11.74		
p-value	>0.05	<0.05*		

Table 2: Mean Values of Gingival Index Score

Group	Baseline	30 Days	Inter-group comparison	
Group A	1.5	1.2	Group	p-value
			A-B	<0.05*
Group B	1.7	0.87	A-C	<0.05*
Group C	1.8	0.88		
F value	3.98	10.47	B-C	>0.05
p-value	>0.05	<0.05*		

Discussion

The prevalent type of gum disease is plaque-induced gingivitis, which was brought through a connection among the host's tissues and inflammatory cells and microbes present in the tooth plaque biofilm. The plaque-host relationship can be influenced and changed by the effects of systemic, local, or combined factors; medicines; and starvation.[1] This study's evaluation comprised clinical evaluation. Since the PI and GI provided by Silness and Loe (1967) and Loe H and Sillness J (1963) are the furthermost utilized indices in therapeutic medication research, they served as the foundation for the clinical evaluation in this investigation.

Gingivitis can be prevented from developing into periodontitis by using a variety of pharmaceutical plaque control techniques. Additional dental care practices, including using pharmaceutical mouth rinses, can still lead to adverse effects, and prolonged usage may stain teeth and cause loss of taste.[6] Investigators are now using alternative therapies as a result of these drawbacks. OPT is a traditional ayurvedic approach to dental care. OPT may help saliva rid itself of dangerous heavy metals, according to some data. Salivary enzymes eliminate environmental, bacterial, and chemical pollutants from the blood during OPT and release them through the tongue. Ayurveda holds that the tongue benefits the entire body because it is connected to the vital organs.[7] Studies have shown that OPT is just as effective as gold-standard mouth rinses at preventing plaque-induced gum disease, at least temporarily. As a result, group B was given 10ml sachets of cold-pressed oil. Our research revealed that groups B and C had lower PI and GI ratings.

According to the present investigation, OPT is just as efficient at preventing plaque-induced gingivitis as chlorhexidine. Compared to chlorhexidine, sesame oil offers the following benefits: it doesn't stain, it doesn't leave an aftertaste, and it doesn't cause allergies. Most homes have access to sesame oil, which is 5-6 times more affordable than chlorhexidine. There are no disadvantages to oil pulling therapy, with the exception of a lengthier procedure time than chlorhexidine. OPT could be applied as a preventative remedy at home to preserve dental hygiene, even if it is currently not an effective treatment adjunct.[8]

To determine the effectiveness of OPT in preventing plaque-induced gingivitis, extensive research involving bigger samples, varied time periods, microbiological studies, and extended follow-up periods should be conducted. Additional research on sesame oil might result in fresh advancements in the realm of dental health treatment.

Conclusion

Gingivitis can develop into periodontal illness if left ignored. It is essential to practice efficient surveillance that preserves tissue well-being and slows the advancement of disease. The study's findings included the following conclusions:

Both the oil pulling (group B) and chlorhexidine (group C) experienced a statistically significant decrease in their PI scores.

Both the oil pulling (group B) and chlorhexidine (group C) experienced a statistically significant decrease in their GI scores.

Though group B index score decreased more, there was no statistically significant variance between the groups.

It is essential to look into a home cure that improves general health and saves time and money, like oil pulling. As a result, we need to raise knowledge of oil pulling, an underappreciated home remedy that can help nations like ours with low resources avoid illness.

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