ORIGINAL ARTICLE
THE EFFECT OF ALOE VERA IN PATIENT WITH CHRONIC PERIODONTITIS

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ABSTRACT

Background: Aloe Vera can be used as adjunct to conventional periodontal therapy in patients with chronic periodontitis. The purpose of this study was to investigate the clinical effectiveness of local application of Aloe Vera gel used as an adjunct to scaling and root planing in the treatment of patients with chronic periodontitis.

Methods: 40 patients were examined and treated by alveolar gel in Periodontology department at Altamash Institute of dental medicine. Periodontal evaluation like Gingival index, Plaque index and pocket depth by periodontal probe followed by scaling and root planing was done.

Results: The mean reduction in gingival index from baseline to 15 and 30 days was (1.98 ± 0.10, 1.6 ± 0.10 and 1.05 ± 0.10, respectively). However, for the control group, there was no significant difference in gingival and plaque indexes between after and before treatment measurements. There was significant reduction in Plaque index before and after treatment with Aloe Vera. The plaque index was significantly reduced from 2.15 ± 0.271 to 1.60 ± 0.34 after 30 days.

Conclusion: It has been shown that the sites treated with Aloe Vera gel show significant decrease in periodontitis. Also differences between control and test side were statistically significant in clinical parameter.

KEYWORDS: Aloe Vera, Periodontitis, Gingival Index, Plaque Index, Periodontal pocket.

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INTRODUCTION

Aloe Vera is a medicinal plant with immense properties of therapeutic benefits. It has anti-inflammatory, antiviral, antibacterial and anti-oxidative effects. The Aloe barbadensis plant consists of two different parts, each of which produces substances with completely different compositions and therapeutic properties. Among more than 400 aloe species, Aloe barbadensis Miller and Aloe arborescense are the most accepted species for various medical, cosmetic and pharmaceutical purposes. The antimicrobial effect of a dentifrice containing alveola has been used demonstrated in a vitro study, in which this phytotherapeutic agent inhibited the growth of diverse oral microorganisms such S.mutans, S.sangius, A.viscosus and C.albicans. Aloe Vera has gained considerable importance in clinical research. It is one of the most extensively studied herbs in dental and oral health studies. This clinical study focuses on Aloe Vera and highlights its property when used as a treatment in the periodontal pocket. Aloe Vera is a medicinal plant, which has the greater medicinal value and enormous properties for curing and preventing oral diseases. Aloe Vera has been used as anti-inflammatory, antimicrobial, and cellular regeneration properties. It is especially attractive as a tissue engineering material because alveolar promotes cell migration, proliferation and growth. Glucomannan, a mannose rich polysaccharide and gibberellin, a growth hormone, interact with growth factor receptor on the fibroblast, thereby stimulating its activity and proliferation which in turn increases collagen synthesis after topical and oral application. The objective of this study was to find out the effect of Aloe Vera in Periodontitis.
The present study was carried out on 40 patients, 30-60 yrs. old with chronic periodontitis were included. The patients were selected from periodontology department, Altamash Institute of dental medicine. Proper history was taken and clinical examination was done.

**METHODS**

The clinical observations comprised plaque index score, gingival redness and suppuration, pocket depth and attachment level. Patients who were current smokers, pregnant, had systemic diseases such as diabetes or had periodontal treatment including scaling, root planing and periodontal surgery in the last six months were excluded from the study.

The subjects were divided into two groups. Twenty patients were treated with scaling and root planing (SRP) only and other 20 patients were treated with SRP and Aloe Vera gel. Selected sites were randomly divided into control sites and experimental sites which were treated by split-mouth design. All patients were given strict oral hygiene instructions. After flushing the area with saline Aloe Vera (1cc) 100 % gel concentrate was applied sub-gingivally using syringe. The gel applied site were covered with periodontal pack to ensure that Aloe Vera gel stayed long enough to be effective in the periodontal pocket. Patients were instructed not to rinse or drink any liquid for at least 30 minutes. For oral hygiene all patients were given toothbrush (Colgate toothbrush) and tooth paste (Sensodyne toothpaste). They were instructed to brush their teeth twice daily for 2 minutes using the Bass technique. Following clinical parameters were recorded.

- Plaque Index
- Gingival Index
- Periodontal pocket depth

Patients of both groups were examined on baseline and follow up days, day 15 and day 30. Clinical examination to assess plaque accumulation and gingivitis was done by using modified Silness and Loe Plaque Index (William et al., 1991) and Gingival Index (Loe and Silness, 1963) at baseline and at follow-up after 15 and 30 days.

| TABLE 1. THE EFFECT OF ALOE VERA IN PLAQUE, PERIODONTAL AND GINGIVAL INDEX |
|-----------------|---------------|---------------|---------------|
|                 | BASE LINE     | 15 DAYS       | 30 DAYS       |
|                 | Mean ± SD     | Mean ± SD     | Mean ± SD     |
| ALOE VERA GROUP (PLAQUE INDEX) | 2.15 ± 0.271 | 1.85 ± 0.120 | 1.60 ± 0.34   |
| CONTROL GROUP (PLAQUE INDEX)   | 2.10 ± 0.22  | 2.00 ± 0.32  | 1.90 ± 0.24   |
| CONTROL GROUP (PERIODONTAL POCKET) | 3.75 ± 0.27 | 2.80 ± 0.12  | 1.90 ± 0.11   |
| ALOE VERA GROUP (PERIODONTAL POCKET) | 3.45 ± 0.34 | 3.26 ± 0.20  | 2.96 ± 0.54   |
| ALOE VERA GROUP (GINGIVAL INDEX) | 1.98 ± 0.10 | 1.60 ± 0.10  | 1.05 ± 0.10   |
| CONTROL GROUP (GINGIVAL INDEX)  | 1.78 ± 0.15  | 1.70 ± 0.25  | 1.68 ± 0.40   |
Proper history was taken and clinical examination of patients aged 30-60 years with chronic periodontitis were included in the present study. The study was carried out on 40 patients, of which were given strict oral hygiene instructions. All patients were treated by split-mouth design. All patients were treated with scaling and root planing (SRP) and Aloe Vera gel. Selected sites were randomly distributed. Patients who were current smokers, pregnant, had systemic diseases, or had surgery in the last six months were excluded from the study.

Examination to assess plaque accumulation and the healing, anti-plaque and anti-halitosis properties were evaluated using the Loe Plaque Index (William et al., 1991) and Gingival Index (Loe and Silness, 1963) at baseline and at follow-up after 15 and 30 days. The gingival index with the use of Aloe Vera gel was more than in scaling and root planing group which was also reported by Oliveira et al. (2013). There was significant reduction in Plaque index before and after treatment with Aloe Vera. The plaque index was significantly reduced from 2.15 ± 0.271 to 1.60 ± 0.34 after 30 days. The mean periodontal pocket depth was measured before and after treatment. The results showed reductions in PPD after 15 and 30 days of treatment with Aloe Vera gel. Table shows the mean changes in PPD after and before treatment. The effects of the treatments were evident in the post treatment recording. At 15 days, PPD was reduced to 3.26 ± 0.20 in the SRP alone group to 2.80 ± 0.12 in the SRP plus Aloe Vera group. After 30 days, PPD was reduced to 2.96 ± 0.54 in the SRP alone group to 1.90 ± 0.11 in the SRP plus Aloe Vera group. The improvements in PPD were more evident in the groups treated with SRP and the Aloe Vera group.

**DISCUSSION**

Use of herbs for dental care is very common in indigenous system of medicine and herb like Terminalia Chebula, Aloevera, Azadirachta indica, piper betel, Ocimum sanctum possess antibacterial, ulcer healing, anti-plaque and anti-halitosis properties. The test group showed significant reduction in periodontal pocket, gingival index and plaque index showing that Aloe Vera is considered to have excellent potential as an adjunct to traditional periodontal therapy.

The pharmacological actions of Aloe Vera as studied in vitro and in vivo include anti-inflammatory, antibacterial, antioxidant, antivirus, anti-fungal and hypoglycemic properties. The decrease in gingival index can also be attributed to presence of sterols as anti-inflammatory agents and lapel as antiseptic analgesics. Reduction in gingival index, periodontal pocket and plaque index was more than in scaling and root planing group which was also reported by...
The present study was carried out on 40 patients, patients were given strict oral hygiene instructions. SRP and Aloe Vera gel. Selected sites were random the study. Surgery in the last six months were excluded from depth and attachment level. Patients who were stay long enough to be effective in the periodontal pocket were significantly reduced when Aloe Vera gel was used as an adjunct to scaling and root planing. No significant reduction was seen when only scaling and root planing was done.

Though the studies have a positive outcome, elaborate studies are needed to prove the efficacy of Aloe Vera in periodontal pathogens.

**REFERENCES**

The present study was carried out on 40 patients, patients were given strict oral hygiene instructions. which were treated by split-mouth design. All SRP only and other 20 patients were treated with the SRP alone and Aloe Vera group. The improvements in PPD was significantly reduced from 2.96 ± 0.54 in the SRP alone group to 1.90 ± 0.11 in the SRP plus Aloe Vera group. After 30 days, PPD was reduced to 2.80 ± 0.12 in the SRP plus Aloe Vera group. The findings of the current study suggest that Aloe Vera provides beneficial therapeutic effect to periodontal pathosis. Though the studies have a positive outcome, elaborate the antimicrobial effect of Aloe Vera on plaque and gingivitis control. A double blind clinical study in humans. J Apply Oral Sci 2008; 16: 293-6.

REFERENCES