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## Efficacy of Aloe Vera Gel Dressing In Chronic Leg Ulcer of Diabetic, Traumatic and Burns Origin.

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### ABSTRACT

A pilot study on chronic ulcers. Medicinal properties of Aloe vera have been recognized for a long time. The antiseptic and antimicrobial analgesic property present in Aloe vera penetrates directly into the skin. Helps in fast and effective healing. Aloe vera decreases the bacterial count. Therefore the present study is aimed at determining clinical improvement in chronic ulcers.

**Keywords:** Aloe vera, Aloe vera gel, chronic leg ulcers.

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## INTRODUCTION

This is a pilot study to study about the efficacy of the aloe vera dressing in a chronic leg ulcers of diabetic patients. Aloe vera is a plant which is commonly available in India. It has varied antiseptic properties and wound healing capacity. It is rich in antioxidants and doesn't have much of side effects. Hence this study is cost effective and was more useful for the common usage of the people [1,2].

## MATERIALS AND METHOD

A total of 30 cases with chronic leg ulcers were treated with topical aloe vera gel and 50 years age and sex-matched controls were treated with topical antibiotics. Culture and sensitivity was done from the wounds on weekly once for four weeks, and the ulcer was clinically assessed.

### Inclusion criteria

Diabetic ulcers (On treatment & in control), Non-specific chronic ulcers, Age between 30 years to 50 years, No other co-morbid conditions.

### Exclusion criteria

Established diabetic neuropathy, Trophic ulcers, Ulcers due to venous or arterial disease, Other co-morbid conditions leading to anemia and or hypoproteinemia.

Study period: 2011 to 2014.

## METHODOLOGY

The Aloe vera gel used in the study was obtained from commercial vendor who supply for alternative medicine pharmacy. There are more than 500 varieties of species. Vendors extract from leaves of Spotted Aloe vera species, *Aloe barbadensis*. This gel was obtained by peeling the outer layer. The inner gel was, obtained from the vendor and then sterilized by pasteurization. No chemicals were added. The gel was stored in sterile containers at room temperature.

Thorough detailed history and thorough clinical examination. Peripheral neuropathy and vascular insufficiency were judged clinically through sensory, motor and trophic changes. Wounds were examined to assess the initial size for evaluating the progress. For irregular wounds, size was calculated by measuring the two largest dimensions. After obtaining specimen for culture and sensitivity the Aloe vera gel applied on ulcers in the morning. Patients and their attenders were taught the application of gel in the afternoon and night. The collection of specimens and treatment was being done by the same person for all the 30 cases and the assessment of ulcers was done by a neutral surgeon who was not aware of the treatment.

## RESULTS

In this study, 30 patients of whom 26 (86.7%) were males and 4 (13.3%) were females, 14 (46.7%) were diabetic, 12 (40%) post-traumatic, and 4 (13.3%) accidental burn wounds. Thirty age and sex-matched controls were treated with topical antibiotics but were not responding to therapy. Of the controls, 26 (86.7%) were males, 4 (13.3%) were females. 14 (46.7%) were diabetics, 12 (40%) were post-traumatic, and 4 (13.3%) were burn wounds.

### First week

Clinical improvement in wound healing- edema reduced, erythema reduced, appreciable size reduction on measurement (60 to 80 %) in 6 patients. Of which 6 (20%) post-traumatic and 2 (6%) burns. None from diabetic.

## Second week

Above cases healed well. Of the remaining cases 7(23.3%) diabetics, 6(20%) Post-traumatic and 2(6%) burns showed 80 to 90% Clinical improvement in wound healing- edema reduced, erythema reduced, appreciable size reduction on measurement.

Remaining cases 3 cases of diabetic ulcer showed 80% improvement on the third and fourth week. Healing complete on fifth week.

Four cases of diabetic origin did not heal, but showed marginal improvement in size reduction. In spite of non-healing showed marked improvement in reduction of edema and erythema.

## DISCUSSION

Plant extracts, with known antiseptic and antimicrobial analgesic property can be of great significance in the treatment chronic ulcers. According to the World Health Organization (WHO), medicinal plants would be the best source for obtaining a variety of drugs. Aloe vera has been known since antiquity as an effective wound dressing. Aloe vera is a cost-effective dressing particularly in our country.

In our study most of the cases showed improvement and complete healing in two weeks time. Total cases taken for study 87.7% of cases healed in two to three weeks time. Remaining 12.3% did not heal.

Aloe vera gel is said to promote wound healing due to the presence of components like anthraquinones and hormones, which possess antibacterial antifungal and antiviral activities. Studies show Aloe vera gel to act against gram negative organisms effectively [3-9].

## CONCLUSION

Aloe vera is cheap, cost-effective compared to conventional and modern dressings and easily available in our country and can be useful in a resource limited country. Aloe vera does not have major side effects.

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