

A Prospective Study Comparing Healing Time and Wound Closure of Alginate-Based Versus Povidone-Iodine Dressings in Chronic Non-Healing, Non-Malignant Ulcers

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Abstract

Aim And Objectives: This prospective study evaluated the efficacy of calcium and silver alginate dressings versus povidone-iodine dressings in chronic non-healing non-malignant ulcers. Sixty patients were randomized into two equal groups and treated accordingly over six months.

Result: The test group demonstrated a higher complete healing rate (66.67%) compared to the control group (36.67%), with a significant reduction in ulcer size ($P=0.035$). Calcium and silver alginate dressings promote granulation, reduce microbial load, and shorten healing time without complications.

Conclusion: These findings suggest that calcium and silver alginate dressings, though costlier, offer superior outcomes in managing chronic non-healing non-malignant ulcers.

Keywords: chronic ulcers, silver alginate dressing, wound healing.

INTRODUCTION

The present study was conducted on sixty patients to compare the efficacy of calcium and silver alginate dressings with betadine dressings in the management of chronic non-healing non-malignant ulcers in AVMC & Hospital between the period of May 2015 to August 2024.

Patients were randomly divided into two groups of thirty patients each, and a detailed history was taken, and relevant investigations were done to rule out any focus of infection. All 60 patients were followed up for 6 months based on the size of the ulcer and area of healing.

All the patients were assessed based on many factors, e.g., size of ulcer, site of ulcer, culture sensitivity from the ulcer, medical problems like diabetes mellitus, rheumatoid arthritis, chronic renal failure, pressure sore, gout, and hemolytic anemia. We found that there was better improvement in the reduction of ulcer size in the test group.

There were no complications seen in either group. Lower limbs were the most common site of occurrence of ulcer in the study. There was a greater reduction in the size of the ulcer in the test group compared to the control group.

Aims and objectives of the study

The aim and objective of the study is to find the Duration of mean healing time and wound closure of silver alginate and calcium alginate dressings vs povidone iodine dressings in chronic non-healing nonmalignant ulcers.

MATERIALS AND METHODS:

This is a prospective study conducted on 60 individuals (30 control group, 30 test group) attending OPD and IPD in AVMC & HOSPITAL, during the study period of May 2015 to August 2024. Subjects of this study include all individuals with chronic non-healing non-malignant ulcers. Randomization is done (by allotting random numbers one to sixty to all the patients coming with complaints of chronic non-healing non-malignant ulcers), followed by alternate subjects who were treated with treatment A (silver alginate and

calcium alginate dressings) and the others treated with treatment B (povidone iodine).

Inclusion criteria

1. Any individual with chronic non-healing ulcers.
2. Any individual with non-malignant ulcers.

Exclusion criteria

1. Ischemic ulcers, osteomyelitis, and malignant ulcers.
2. Patients on treatment for the ulcers other than silver alginate and calcium alginate dressings.

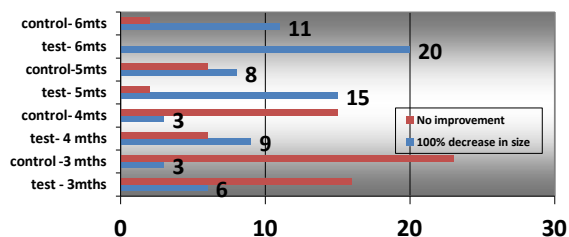
RESULTS:

Table: Duration of reduction in the size of chronic non-healing non-malignant ulcer

Duration of chronic ulcer	Group	Outcome			Test of significance
		Less than 100% Decreased	100% decrease in size	No Improvement	
3 months	Test	8	6	16	X ² =3.59 P=0.166
	Control	4	3	23	
4 months	Test	15	9	6	X ² =7.19 P=0.027
	Control	12	3	15	
5 months	Test	13	15	2	X ² =4.44 P=0.108
	Control	16	8	6	
6 months	Test	10	20	0	Fisher exact value=6.42 P=0.035
	Control	17	11	2	

Table: Duration of Reduction in the size of chronic non-healing non-malignant ulcer:

66.67% of the cases had completely healed ulcers at the end of 6 months in the test group, while 36.67% of % cases had completely healed ulcers at the end of 6 months in the control group. The rest of the cases underwent split skin grafting in both groups.



All the patients were assessed based on many factors, e.g., size of ulcer, site of ulcer, culture sensitivity from the ulcer, medical problems like diabetes mellitus, rheumatoid arthritis, chronic renal failure, pressure sore, gout, and hemolytic anemia. We found that there was better improvement in the reduction of ulcer size in the test group.

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CONCLUSION:

The results from the present study show that in the management of chronic non-healing non-malignant ulcer, calcium and silver alginate dressings reduce microbial load, promote granulation, and decrease the healing time, without damaging the normal tissue or producing complications. Those patients who have small superficial ulcers or are not fit for definitive surgery can be managed conservatively with calcium and silver alginate dressings only.

Calcium and silver alginate dressings, although costly, have better results when compared to betadine with mechanical debridement in the management of chronic non-healing non-malignant ulcers. There were no side effects observed due to calcium and silver alginate dressings during the study.

Therefore, it can be safely concluded that calcium and silver alginate dressings can be used in the management of chronic non-healing non-malignant ulcers.

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