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RANDOMISED CONTROLLED TRIAL OF TOPICAL MUPIROCIN VERSUS CONVENTIONAL DRESSING IN CHRONIC SKIN ULCERS

General Surgery

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ABSTRACT

Objectives: The objective of this study was to carry out a head-to-head comparison of mupirocin versus conventional dressings in the treatment of chronic skin ulcers with respect to both effectiveness and safety. **Aim:** To compare the efficacy of mupirocin in chronic wounds in terms of Reduced wound healing time, Size of the ulcer. **Materials and Methods:** A open-label, randomised, controlled trial was carried out with patients suffering from skin ulcers of Wagner grading 1 or 2 persisting for over 4 weeks. 60 patients were recruited in total 30 participants treated with mupirocin 2% and 30 treated with combined conventional dressing. Treatment-emergent adverse reactions that were reported by patients or observed by the investigators were recorded. **Results:** A total of 60 patients of which 44 were males and 16 were female patients. The wound healing was better in the group treated with mupirocin and the duration of hospital stay was significantly shorter. Patient compliance was found to be similar in both groups **Conclusion:** On the basis of the statistical analysis of our study we come to the conclusion that mupirocin dressing is advantageous than conventional dressing in terms of Decreased wound surface area Decreased duration of hospital stay.

KEYWORDS

INTRODUCTION

Wound Healing is a dynamic process involving soluble mediators, a variety of cells, and extracellular matrix. Wound result from precise disruption of tissue by the surgeon's knife (incision) to widespread damage of tissue (e.g. major trauma, burns). It also results from a contusion, hematoma, laceration or an abrasion. The continuity of the skin must be restored expeditiously because it plays a crucial role in maintaining homeostasis. Wounds that are difficult to treat includes diabetic ulcers, venous ulcers, trophic ulcers, pressure sores and necrotising fasciitis. An ideal dressing used in the wound management should be economical, easy to apply, readily available that will provide good pain relief, protect wound from infection, promote healing, keep moisture, be elastic, and non - antigenic and adhere well to the wound and waiting for spontaneous epithelisation and healthy granulation tissue.

Topical antibiotics such as mupirocin, fusidic acid, neomycin, gentamicin, bacitracin and polymyxin B combination, and metronidazole are widely used for superficial skin ulceration with inflammation. Faced with increasing bacterial resistance to antimicrobials, prescribing guidelines now indicate that antibacterial formulations should not be used for bacterial colonisation alone but only in cases of clinically evident infection.

AIM OF THE STUDY

To compare the efficacy of mupirocin in chronic wounds in terms of
- Reduced wound healing time,
- Size of the ulcer.

Inclusion Criteria

All non-healing chronic ulcers are included like diabetic ulcers, traumatic ulcers, pressure sores, amputation stump ulcers, post-surgical wound gaping of at least 6 weeks duration.

Exclusion Criteria

1. Ulcers having bone exposed raw area.
2. Malignant ulcers, ulcers with reduced vascularity.
3. Patients with connective tissue disorders and immune system disorders.
4. Patients on immunosuppressive drugs, steroids, chemotherapy and radiotherapy.

MATERIALS AND METHODS

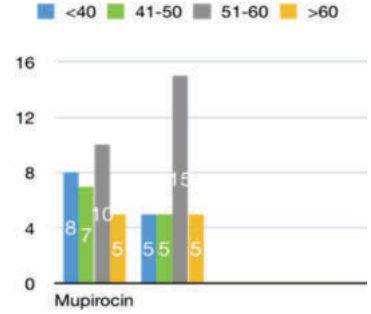
- Patients presenting with chronic ulcers in kanyakumari medical college will be selected in this study.
- Following consent, patient's demographic data, duration of disease and other treatment details will be recorded
- This is a prospective study comprising of chronic ulcer patients.
- Patients were categorised into 2 groups A (study group) and B (control group).
- Complete blood count, renal function tests, serum proteins and pus culture and sensitivity will be sent.
- All the patients will be started on empirical intravenous antibiotic and changed after obtaining the culture report.
- One group received mupirocin and the other one received the conventional antibiotic dressing with metronidazole and povidone
- In study group A after giving a saline wash, Mupirocin ointment is applied and the wound dressing done on a daily basis.
- In control group after giving thorough saline wash was given ,dressing is done with metronidazole and povidone iodine soaked gauze on a daily basis
- Wound progress will be observed 7th,14th, 21st and 28th
- Wound surface area will be measured before and after the application of Mupirocin ointment and documented. Wound surface area will be measured with the help of a paper with multiple squares each having a surface area of 1 sq. cm.

Wounds will be assessed for:
- Reduction in surface area
- Reduction in hospital stay

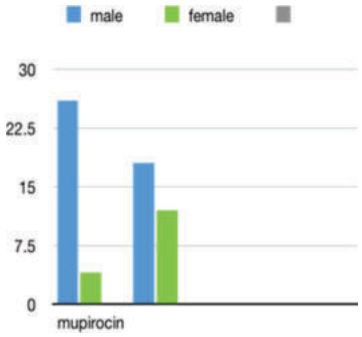
RESULTS

The present study comprising of 60 cases of chronic wounds was studied during a period of january 1st to january 31st (4 weeks) . Patients were categorised into two groups based on the mupirocin application and conventional dressing. Above mentioned parameters were assessed and the results were estimated.

1. Gender



	Mupirosin	Conventional
Male	26	18
Female	4	12

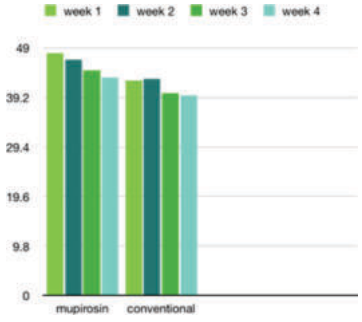


2. Age

	Mupirocin	Conventional
<40	8	5
41-50	7	5
51-60	10	15
>60	5	5

3. Mean Wound Surface Area

	Mupirosin application	Conventional Dressing
Mean wound surface area week 1	48.03	43.6
Mean wound surface area week 2	46.68	42.87
Mean wound surface area week 3	44.53	40.07
Mean wound surface area week 4	43.17	39.57



4. Mean Hospital Stay

	Mupirocin	Conventional
Mean hospital stay	32.10	45.57

Wound Before Application Of Mupirocin(week1)

Wound After Application Of Mupirocin(week4)

Wound Before Application Of Mupirocin(week1)

Wound After Application Of Mupirocin(week4)

DISCUSSION

The sex and age distribution in our study had a male predominance comprising 73% of the total study population and peaking around 51 to 60 of age.This result is comparable with the study Subhrangsu Chatterjee et al. Indian J Pharmacol. 2019 Sep-Oct.

Mean wound surface area in case group is 48.03 cm2 before application of dressings and 39.57 after application of dressings, with a p value of 0.047. This indicates significant reduction in the wound surface area

Duration of mean hospital stay among the case group who received the mupirocin dressing than the conventional dressing. The mean hospital stay for case group is 32.10 days and among the control group is 45.57 days with p value of <0.001. There is a significant decrease in the mean hospital stay.

CONCLUSION

On the basis of the statistical analysis of our study we come to the conclusion that mupirocin dressing is advantageous than conventional dressing in terms of Decreased wound surface area Decreased duration of hospital stay.

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