



A DESCRIPTIVE COHORT STUDY BASED ON THE EFFICACY OF PRESSURE OFF LOADING MANDAKINI DRESSING IN PATIENTS WITH FOOT ULCER IN SLIMS

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ABSTRACT

With the growing trend of increasing morbidity among individuals, plantar foot ulcers is one of the important causes leading to various podiatric complications. Similar to the various co factors associated with initiation and progression of the disease there are also different modalities for the management of this condition. Apart from the routine line of management here we will be discussing about a technique which is quite economical but sufficiently efficient in managing these type of ulcers. **Methodology:** This is a descriptive cohort study conducted on 86 patients with foot ulcers who are treated with mandakini dressing. The study is conducted for a period of 2 year and the outcome of the patients are interpreted separately based on various factors like Age, BMI, Diabetic status, Hemoglobin levels. **Results:** Based on the study conducted with 86 patients over a period of 2 year people who underwent pressure off loading technique showed good outcomes in general with no other treatment. The outcomes were also studied separately based on the other factors mentioned above and results were promising irrespective of the category. **Conclusion:** So to conclude we can say that Mandakini pressure offloading is an excellent technique with great outcomes when it come to dealing with plantar surface foot ulcers irrespective of the other techniques which are both pain inflicting and expensive.

KEYWORDS

Foot ulcer, Offloading dressing, Mandakini, Diabetic, Efficacy, Economical

INTRODUCTION

Foot ulcers is one of the commonest entity in developed and developing countries of the world nowadays. It is due to various reasons out of which uneven pressure distribution of the foot with poor foot hygiene/care is one of the preventable causes. Being said that there are also various other reasons for the development of foot ulcers like post trauma, ischaemia, neuropathic which gets complicated by the patient specific co morbidities. In our study we will be discussing briefly about pressure ulcers over plantar aspect of foot and its management by pressure off loading technique. It is one of the most simplest cheaper and least discussed method of dealing with pressure ulcers compared to other conventional methods.

MATERIALS AND METHODS

Study Design

The following is a descriptive cohort study conducted in SLIMS in about 86 patients over a period of one year who were suffering from ulcers over the plantar aspect of foot. The study was done both in opd basis and in patients.

Patient Selection

The study was done in about 86 patients with the inclusion criteria being age between 18-60 years, BMI ranging from 18.5-30, both diabetic and non diabetic patients, both patient who have normal hemoglobin levels and those who are anemic.

The people who were excluded from the study are people less than 18 years and more than 60 years, patients who have active infection or abscess, patients who are suspected to have gangrene, patients who are suspected to have osteomyelitic changes, patients who have any active malignancy or those who have received chemo radiation in the past and people who are not willing to give consent for the study.

The study was conducted only after explaining the procedure of treatment and getting proper consent from the patients.

MANDAKINI DRESSING (PRESSING OFF LOADING DRESSING) APPLICATION (Fig.1)

Materials required :

1. Sterile gloves
2. Dyanoplast or Adhesive plaster

Method :

A pair of gloves is folded like a wedge shape and placed in a dyanoplast and closed circumferentially. The number of globes used depend upon the size of the foot and weight of the patient. It is then placed in the plantar aspect of foot either hind foot or fore foot depending upon the location of ulcer. It is then tightly packed with a another dyanoplast around the foot in such a way it provides cushion effect and reduces the contact of ulcer with the floor.



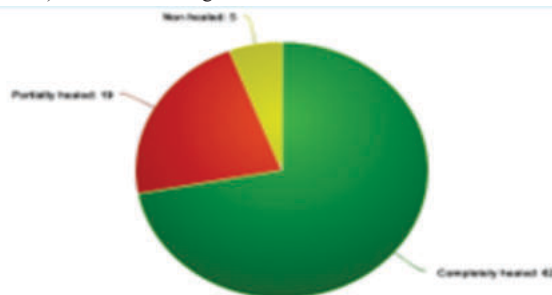
(Fig.1)

PARAMETERS

The dressing is changed every week and the wound is assessed every week upto a period of 8 weeks. The outcome is studied based on the decrease in size of ulcer, re-epithelialization and weeks taken for complete healing.

RESULTS

A total of 86 cases with foot ulcers were treated with pressure off loading mandakini dressing for a period of 8 weeks. The mean age of the patients was 46.34 with a body mass index (BMI) of 24.25 kg/m². The mean hemoglobin (10.5g/dL), 66(76.74%) were diabetic patients. The healing rates of the ulcers were monitored in weekly intervals till 8th week (Fig.2). Among 86 patients, 62 patients (72.09%) showed complete healing with a > 75% reduction in wound size and 19 patients (22.09%) showed 50%-75% wound size reduction while 5 patients (5.81%) showed no healing or reduction in wound size.



(Fig.2)

S.No	Factors	Mean values
1.	Age	46.34
2.	BMI	24.25kg/m2
3.	Haemoglobin	10.5g/dl
4.	Diabetic patients	76.74%

The healing of the ulcer varied from 6 to 8 weeks (Fig.3). Among those cases, 72.09% (62 patients) healed ulcers were noted at the end of the last visit. The effectiveness of mandakini dressing was assessed in terms of complete wound healing or > 75% reduction in surface area from the baseline (4.02 cm). For each visit, there was a reduction in the ulcer area. In the last visit, the mean ulcer area became 0.64 cm, which was significant in this study.



(Fig.3)

DISCUSSION

Ulcers in general are nothing but a break in the continuity of epithelium. The various type of foot ulcer are post traumatic ulcer, diabetic foot ulcer, Neuropathic ulcers or pressure ulcers which are mostly seen in people with peripheral neuropathic dysfunction. It leads to undue and uneven distribution of pressure in the foot which in long term is prone to ulceration as the patient undergoes repeated chronic pressure over the prominences and loss of sensation (pain) due to neuropathy leading to progressive increase in size has a result of repeated friction to the pressure ulcer site. There are various causes for development of neuropathic ulcers ranging from ANATOMIC - nerve compression or entrapment, METABOLIC causes like diabetes, thyroid disorders, renal disorders. SYSTEMIC causes may be due to syndromes like Sjögren's or carcinoma/paraneoplastic syndromes and rarely HIV. In some cases it is also caused by vitamin B deficiency.

And so these type of ulcers may get complicated in cases depending upon the age and co morbidity of patients and may lead to serious and sometimes even life threatening complications like conditions were infections sets in mostly in case of diabetic, it may lead to abscess formation while in worst case gangrene and necrosis leading to sepsis. So it is always better to treat cases at an early stage and preventing them from progressing to the worst. While treatment usually involves a holistic approach while in our case we will be discussing about one technique which is very economical and easy to proceed with in an early stage. The pressure off loading technique is usually done in different ways like total contact cast, aircast shoes, walkers but in our study we use the Mandakini dressing which is nothing but a simple dressing made out of gloves and dyanoplast. It diverts the pressure from the ulcer site facilitating healing.



(Fig.4)

The main aim of this technique is to reduce the contact over the pressure site and facilitate re-epithelization. This dressing is usually changed every week to look for the ulcer status and to reapply the dressing to prevent migration of the gloves packed in dyanoplast which affects the principle of this treatment. Usually appreciable improvement is seen within a period of 6 weeks (Fig.4). Although this technique is one way of treating the ulcer alone, it is always important to control the other co morbidities which affects wound healing to achieve complete result.

CONCLUSION

To conclude we can say that Mandakini pressure off loading dressing is one of the safest and economical type of dressing technique for plantar aspect foot ulcer patients with almost no adverse effects. This study proves us the effectiveness of this technique in patients with plantar aspect foot ulcers with a complete healing percentage of more than 70.

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