PROSPECTIVE STUDY ON INDIGENOUS NEGATIVE PRESSURE WOUND THERAPY AFTER INNOVATIVE HYDRODEBRIMENT IN TREATMENT OF DIABETIC ULCER IN GRH, MADURAI

ABSTRACT

INTRODUCTION

Diabetic ulcer is the most frequent reason for hospitalization in patients with diabetes. It has increased the cost of treatment and hospitalization of these patients. Currently a lot of attention is being placed on the development of expensive topical growth factors for wound healing. Thus there remains a quest for better wound healing agents. One such method is negative pressure therapy along with hydrodebridement. This study was done to prove its efficacy over conventional dressing with povidone iodine (betadine).

AIM & OBJECTIVE

To study the effect of indigenous negative pressure wound therapy after innovative hydrodebridement in treatment of diabetic ulcer in GRH, Madurai.

INCLUSION CRITERIA

- Patients more than 25 years of age groups in both sexes presenting with diabetic ulcer.
- Patients consented for inclusion in the study according to designated proforma

EXCLUSION CRITERIA

- Patients less than 25 years of age.
- Osteomyelitis.
- Unexplored fistulas.
• Overexposed blood vessels.
• Unstable general condition.
• Patient not consented for inclusion in the study.

STUDY AREA

Govt Rajaji Hospital, Madurai.

STUDY PERIOD

July 2016 to September 2017

SOURCE OF DATA

All patients diagnosed to have diabetic ulcer, who also come under the inclusion criteria.

METHOD OF COLLECTION OF DATA

Details of cases, Full history, Clinical Examination, Dimensions of the ulcer, Rate of granulation tissue formation, Duration of hospital stay until the wound is fit for grafting.

METHODOLOGY:

Patients selected according to the criteria included in this study were subjected to hyrodebridement using a conventional suction-irrigation unit, wherein the irrigation pressure could be adjusted manually. This was done on a thrice weekly basis or during intervals of NPWT or as and when required depending on the amount of slough.

After HD, a drain tube was placed and fixed inside the wound. A foam cut according to the shape of the ulcer was placed and an airtight seal was created using adhesive tapes. The drain was then connected to the suction unit and intermittent suction was applied at 3 hour intervals.

Dressing was changed once in two days or according to the amount of exudate.

Reduction in ulcer surface area, rate of granulation tissue formation, uptake of SSG and duration of hospital stay were assessed and results were obtained
OBSERVATIONS AND RESULTS

The 100 patients admitted for the study were divided into two equal and comparable groups. Patients subjected to indigenous negative pressure wound therapy after innovative hydrodissection were classified under study and those who underwent conventional moist wound dressing were classified as control.

ANALYSIS OF DATA:

Both the groups had comparable age and sex distribution as depicted in the graphs above.

The mean rate of granulation tissue formation in study group is 95.93 cm$^2$ of total ulcer surface area and in control group is 98.09 cm$^2$. The results were analyzed by unpaired student t test which showed highly significant difference in the rate of granulation tissue formation (p<0.0002). The mean graft uptake in the study group is 99.03 cm$^2$ and in the control group is 97.61 cm$^2$. The results were analyzed by unpaired student t-test which showed highly significant difference in graft uptake (p of 0.001). The total number of days of hospital stay was also compared. The mean number of days of hospital stay in the control group was 31.3 and that in the study group was 27.8 days. The results were analyzed by unpaired student t-test which showed highly significant difference in the number of days of hospital stay (p< 0.0002).

CONCLUSION

- NPWT + HD significantly reduces the size of ulcer.
- NPWT + HD improves the rate of granulation tissue formation.
- NPWT + HD improves SSG uptake also.
- NPWT + HD reduces the duration of stay at the hospital.
- Patients undergoing hydrodebridement undergo lesser amount of pain when compared to patients undergoing conventional wound debridement.
- Hydrodebridement minimizes the blood loss also.
KEYWORDS:

Diabetic ulcer, negative pressure wound therapy, hydrodebridement.