

Management of Diabetic Foot Ulcers with NPWT

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Abstract

Diabetic foot ulcers are a common complication for diabetic patients and it constitutes a major health problem. It leads to amputations when not treated properly. That's why an effective management strategy has to be initiated. Negative pressure wound therapy is a technique that can replace conventional dressing when the wound healing is not obtained. In this prospective review, we reported the use of NPWT in six of our diabetic patients with foot ulcers.

Keywords: *Diabetic Foot Ulcers; NPWT*

Introduction

Diabetes mellitus is an important public health concern. Its prevalence in Tunisia is 19.8% and is in perpetual increase. Diabetic complications are a major health burden due to its important socioeconomic cost and its consequence on the patient's daily life. Foot ulcer is a common complication in patients with diabetes. It occurs in 15% of cases. Negative pressure wound therapy NPWT is used to heal different types of wounds including foot ulcers. In this prospective review, we reported the use of NPWT in patients with diabetic foot ulcers.

Material and Methods

We included in our study patients hospitalized in the cardiovascular surgery department of Abderrahman Mami hospital from January-2021 to July-2021. The six included patients were diabetic with foot ulcer who benefited from NPWT.

Results

The six patients included have had for their foot ulcer a previous treatment based on antibiotherapy and classic dressing but with delay in healing. We decided to hospitalize each one of them and initiate the NPW. They were 5 male patients and only one female patient. All of them had diabetes on insulin. Four have Hypertension and dyslipidemia. Four of our six patients had limb

revascularization. The healing was good even in patients who did not have a vascular operation. They had an average use of 4 packs of vacuum system for an average total period of use of 20 days (Figure 1-3).



Figure 1: THE NPWT system.

Discussion

NPWT is used in several surgeries. The process of healing includes the removal of excessive edema fluid with increase in tissue blood flow. In fact, vacuum-assisted closure allows open drainage that continuously absorbs exudate; it also decreases the

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amount of bacteria and finally stimulates angiogenesis. The use of NPWT has shown an accelerating healing process compared to conventional dressings which has an important impact in the length of hospital stay and consequently an impact in the socio-economic cost.

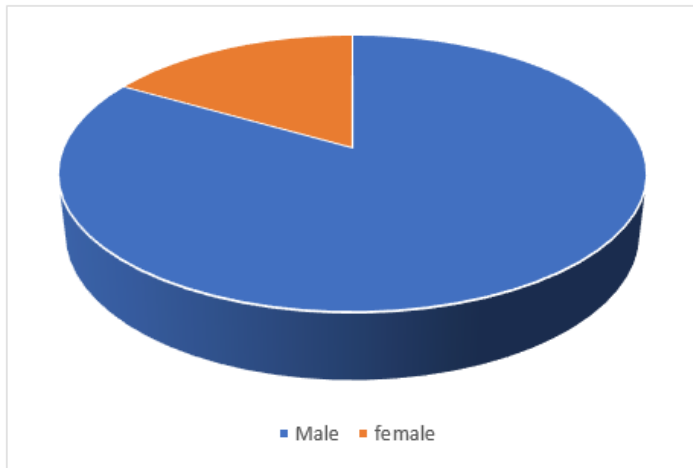


Figure 2: Sex of our included patients.



Figure 3: Results of NPWT in foot ulcers.

Furthermore, NPWT increases the antibiotic concentration in damaged tissue which helps controlling the infection thus accelerates healing. In another hand, long-term follow-up did not show recourse to amputation in our patients. In fact, the fear of diabetic foot ulcers is the evolution towards amputation because it's known that diabetic foot ulcers leads in 12% of cases to amputation. Studies have proven a reduction in amputation for patients with foot ulcers receiving NPWT.

Conclusion

Diabetic foot ulcers are common. Their major complication is amputation that's why the management strategy should be initiated rapidly. The NPWT has been widely used in wound therapies. It can be used in different surgical wounds and in unhealed ones. The application of NPWT in diabetic foot ulcers have shown promising results. The remarkable effects of this therapy were the improvement of healing, the reduction of reoperations and in particular for some patient's reduction of major amputations.

Conflict of Interest

The authors listed certify that they have NO affiliations with or involvement in any organization or entity with any financial interest.