

REDUCING DRIVE LINE EXIT SITE INFECTION RATES AND BACTERAEMIAS IN AT-RISK PATIENTS WITH AN ENZYME ALGINOGEL

Nicola Robinson-Smith, Ventricular Assist Device Clinical Nurse Specialist, The Newcastle upon Tyne Hospitals NHS Foundation Trust.

Introduction

In chronic heart failure, conventional treatment strategies may no longer work, resulting in the need for heart transplantation. Ventricular assist devices can be used to provide temporary circulatory support while a patient awaits heart transplantation. Recent guidance also indicates their use for providing permanent circulatory support to people with advanced heart failure who are ineligible for heart transplantation.¹

Care of ventricular assist device exit sites is essential, but practice varies and there is little research available on best practice. Driveline infections occur along the percutaneous lead which connects the ventricular assist device motor to its external power source. These infections have been associated with bacteraemia and increased mortality, and also lead to increased morbidity and cost due to need for hospitalisation. The presence of Gram-negative bacteria can require more invasive management and complete revision of the driveline tract.³ Driveline infections were reported in 28% (117/414) of patients at a minimum follow-up of 2 years in a case series of 414 patients treated by left ventricular assist devices.⁴

Method

A retrospective review assessed the safety and effectiveness of a chlorhexidine foam ring (Biopatch; Ethicon, USA) followed by subsequent treatment with an enzyme alginogel (Flaminal Hydro, Flen Health UK) compared with Flaminal Hydro alone for the treatment of ventricular assist device exit wound sites. All patients also received secondary dressings to the exit site. The duration of use of each dressing ranged from immediately after the operation and lasted up to eighteen months following implant placement.

All patients had their microbiology results reviewed and completed a satisfaction questionnaire. Their wounds were assessed by the ventricular assist device team monthly at clinic.

Results

Thirteen of the 14 patients who had originally used Biopatch found Flaminal Hydro more comfortable. Twelve of the 14 patients experienced 'good wound healing/improvement in wound' when using Flaminal Hydro. Four of the 14 patients had experienced a wound infection requiring hospital admission, all of which were whilst using the Biopatch.

The patients in the group who had only used Flaminal Hydro all experienced 'good wound healing/improvement in wound' and experienced no wound infections requiring hospital admission (16/16).

One comment comparing the experience of both dressings stated that the "driveline was very oozy when using Biopatch, (but when the patient was) switched to Flaminal (the) oozing cleared up very quickly". Biopatch users reported irritation, maceration, and increased exudate.

All driveline wound swabs were analysed and one patient using Biopatch tested positive for *Staphylococcus aureus* infection. When the dressing was changed to Flaminal Hydro the wound swab subsequently tested negative. The driveline exit site infection rate reduced from 25% to 10% after using Flaminal.



Discussion

Daily exit-site care with an antiseptic cleansing agent is recommended, but the use of topical antimicrobials is not recommended for prophylaxis due to the risk of tissue maceration and selecting for resistant microorganisms.³ Flaminal has a unique enzyme component affording an antimicrobial function with negligible risk of selecting for resistance and has a wealth of clinical evidence to support its performance and tolerance in protecting wounds against microbial colonisation and infection.⁴

The change to Flaminal was cost effective with a saving of £34.99 per box of dressings. Patients were also able to access Flaminal more easily as they could get it prescribed in the community whereas Biopatch was only available through the hospital.

Conclusion

Patients using Flaminal Hydro for the care of ventricular assist device exit sites reported improved wound healing, comfort, satisfaction, and no wound infections compared with Biopatch. Not all wound infections result in bacteraemia but it is a major concern and using Flaminal will help in the prevention of MSSA bacteraemia in particular.

References

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