

USING NEGATIVE PRESSURE TO AID WOUND HEALING IN SURGICAL WOUNDS: A VACUUM OF EVIDENCE?

BY B M GILLESPIE FOR NHMRC CENTRE FOR RESEARCH EVIDENCE IN NURSING (NCREN)

Negative Pressure Wound Therapy (NPWT) involves applying suction to help wound healing and is also known as vacuum assisted closure (VAC).

NPWT has been used to heal chronic wounds since the mid-1990s. More recently, NPWT has been used in the treatment of clean surgical incisions.

RESEARCH INTO EFFECTIVENESS OF NPWT

A recently published Cochrane Review undertaken by NCREN researchers found limited evidence to support the effectiveness of NPWT in healing surgical wounds (Webster et al. 2012).

Only five eligible trials with 280 participants were included. In the three trials that compared NPWT to the standard dressing, there was a non-significant trend towards fewer wound complications in the negative pressure group (negative pressure 14/77; standard dressing 25/93).

In one small trial (60 participants), adverse events associated with dressings were higher in the NPWT group compared to the standard group (Webster et al. 2012).

The inconclusive findings of the Cochrane Review have spawned further research into surgical wound management, and specifically NPWT.

As a next step, NCREN researchers conducted an environmental scan of current wound care practices in five Queensland Health hospitals (Gillespie et al. 2012).

The results suggested that NPWT was being increasingly used to treat a wider range of wounds; in particular, for prophylaxis in high-risk surgical incisions.

Clearly, more research into the effectiveness of NPWT, a costly alternative to standard wound dressing products, was urgently needed.

PILOT STUDIES

Subsequently, NCREN researchers were successful in obtaining funding from the Office for Medical and Health Research to undertake two pilot studies using NPWT in patient-specific groups.

The first study examines the feasibility of using NPWT in obese women (BMI \geq 30) undergoing elective Caesarian section. This pilot study is well under way.

The second pilot study, due to start this month, will test the feasibility of using NPWT in patients undergoing primary hip replacement.

NCREN researchers will use the results generated from these pilot studies to develop larger, multicentre randomised controlled trials using bigger samples of patients.

DOES NPWT IMPROVE WOUND HEALING IN HIGH-RISK SURGICAL WOUNDS?

While the effectiveness of NPWT remains unclear, NCREN researchers are working towards generating evidence that has the potential to inform clinical practice.

For the moment, it is a matter of watch this space.



Left-right: Dr Brigid Gillespie and Professor Wendy Chaboyer

For more information on the National Centre of Research Excellence in Nursing (NCREN) in Queensland visit www.griffith.edu.au/health/centre-research-excellence-nursing

Source List

Gillespie BM, Chaboyer W, Niewenhoven P & Rickard CM (2012): Drivers and Barriers of Surgical Wound Management in a Large Healthcare Organisation: Results of an Environmental Scan. *Journal of Wound Care Practice and Research* 20, 90-102.

Webster J, Scuffham P, Sherriff KL, Stankiewicz M & Chaboyer WP (2012): Negative pressure wound therapy for skin grafts and surgical wounds healing by primary intention. *Cochrane Database of Systematic Reviews*, Art. No.: CD009261. DOI: 009210.001002/14651858. CD14009261.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.