WHAT IS VAC?
■ Vacuum-assisted closure (VAC) is an interactive wound therapy, which applies a negative pressure to the wound bed through an open-cell foam dressing. It is also known as topical negative pressure (TNP).
■ The components are: the therapy unit; open-cell polyurethane foam; tubing; semi-permeable occlusive dressing and canister.
■ The pore size of the foam dressing is carefully designed to maximise tissue growth (Morykwas and Argenta, 1997).

HOW DOES IT WORK?
■ The application of negative pressure to the wound bed increases blood flow to the wound (dermal perfusion), promotes granulation tissue formation, removes excess exudate and peri-wound oedema and reduces bacterial count.
■ The ideal pressure setting is negative 125mmHg on continuous or intermittent pressure, but pressure settings can be altered depending on the wound and the patient condition.
■ In experiments, wounds treated with VAC showed that bacterial colonisation was reduced 1,000 times after four days of treatment compared with control wounds.

WHEN IT IS USED
■ VAC can be used in acute wounds, such as high-velocity wounds, de-gloved injuries, burns or necrotising fascitis, or chronic wounds, such as surgical dehiscence, pressure ulcers, diabetic foot ulcers or leg ulcers. It can also be used to prepare wound beds prior to meshed skin grafting and in flap reconstruction.
■ High-exudate wounds respond well as the fluid is collected in the canister and the dressing only needs changing every two days.
■ Sternal and abdominal wounds can be effectively splinted using VAC to draw the wound edges together.

ADVANTAGES
■ Wounds heal rapidly, but if there is no change after one to two weeks, the therapy should be reviewed.
■ Reduces the number of dressing changes required, reducing nursing time for wound care.
■ Keeps patients clothing clean from exudate and increases patient comfort. Reduces length of stay.
■ Portable VACs are available for ambulant or community patients.
■ Reduces bacterial count.
■ Enhances dermal perfusion.
■ Removes interstitial fluid allowing tissue decompression.
■ Provides a closed, moist wound-healing environment.

DISADVANTAGES
■ In a small number of patients, the suction action can cause pain.
■ Mobility is curtailed for patients unable to use portable VACs as they are attached to the machine for 22 hours each day.
■ Very few scientific trials with good sample sizes and robust methodology, although clinical experience and anecdotal evidence to support its use is overwhelming.
■ Although simple to use, VAC requires training to ensure appropriate and competent use.

REFERENCES


The information given serves as a general reference. Nurses should consult their individual trust policies on clinical procedures.