

Wound Bed Preparation

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Wounds occur due to various causes; Surgical interventions, extrinsic factors such as pressure and/or shearing, chronic comorbidities, such as diabetes mellitus or due to vascular disease. Whatever the cause, wounds can have a negative impact on the life of the person and their family members' and / or caregivers' as well as impacting on the health system. In addition, treatment can be complex and prolonged, since the time to heal a wound depends on a number of factors, such as age, aetiology, comorbidities, wound bed and the environment.

Currently, there is a significant advance in the treatment of wounds, resulting from the development of innovative technologies, such as the use of stem cells, the use of derivatives of adipose tissue, growth factors, development of new products, such as topical insulin, biomaterials and nano therapy and well known therapies such as maggot therapy. The aim of these approaches is to modulate the healing period so that healing occurs in less time, avoiding complications and potentially reducing health costs and improving quality of life. However, to modulate the healing process wound bed care is essential and it is crucial that nurses implement wound bed care according to scientific evidence.

In the available guidelines as well as in clinical practice, there is no doubt about the role of holistic wound assessment which includes wound bed assessment (1). It is important to consider cleansing in relation to the wound bed and assess the presence of slough and devitalized tissue, whether in difficult-to-heal or acute wounds. There are controversies whether cleansing is enough to reduce infection and accelerate the healing process. In the presence of slough and devitalized tissue, debridement, irrigation and cleansing can be part of the wound bed preparation but, this does depend on the type of wound. Debridement consists of the mechanical removal of devitalized tissues present in the wound bed; irrigation consists in applying a continuous fluid under pressure to the wound bed, while cleansing refers to the application of fluid, but without pressure to the wound bed.

Cleansing can help to improve visualization of the wound bed and edges, as well as to eliminate cell residues such as bacteria, exudate, purulent materials and residues from the previous dressing. Performing cleansing continuously, in dressing changes for instance, should be discouraged in the absence of visible devitalized tissue, debris or slough, as it can damage the granulation tissue and restart the inflammatory response, delaying tissue repair. In order to achieve optimum wound bed care, it is necessary that the substances used in cleansing meet the characteristics of atoxicity for the tissues and of stability according to the expiration date of the product. It is also important that these substances should not trigger sensitivity reactions. Finally, it is also vital that they be effective in reducing the number of microorganisms in the presence of organic matter. Alternatively, if there are signs and / or presence of biofilm, cleaning with saline or tap water will not be enough other options such as polyhexamethylene biguanide, PHMB could be considered (2).

In the Brazilian context, sterile 0.9% saline is the first choice for cleaning the wound bed, due to its isotonic quality that does not interfere with the physiological healing process alternatively, tap water has been used to clean the wound bed in some countries. A systematic review identified no difference in wound infection rates, acute, surgical or chronic when compared to cleaning the wound bed with saline solution versus tap water, concluding that tap water is a safe and effective alternative (3). Despite this finding, tap water is not universally used in clinical practice, and the decision on its use is still based on the preference or experience of the professional, local protocols and the context of the environment. It is essential that the health professionals continually assess the aetiology of the wound, presence of infection, the exposure of tendons, the presence of bone structure and the infection rate in the health service in which it operates, so that the introduction of new protocols is supported by evidence and cost-benefit assessment.

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For the care of acute wounds, in 2015, the Cochrane review study recommended that surgical incision dressings should be removed 12 hours after surgery, and patients should be encouraged to maintain a daily body hygiene routine (4). However, in the presence of excessive bleeding in the dressing, it is recommended that cleansing be performed with a sterile solution to assess the suture and stabilize the bleeding. Cleansing should be undertaken with caution as disruption of the sutured or staple incision before re-epithelialization can introduce bacteria below the dermis.

In summary, we consider that the nurse's actions / interventions in caring for the wound bed should be supported by scientific evidence related to the holistic assessment of the individual, the wound and the indication / objective of care for the wound. Tap water can be an adequate solution for cleansing, if there are signs and / or presence of biofilm, alternatives may need to be considered. Appropriate cleansing can support optimal wound bed care but, considerations as to the type of wound, stages of healing and environment should be considered with regards to cleansing.

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