Use of low level laser therapy to treat chronic wounds

Although most injuries heal rapidly, others, particularly chronic skin wounds, are notoriously difficult to heal, even with good management. Low level laser therapy can accelerate the healing of such injuries. Lydia Jack, a tissue viability nurse from Inverclyde Royal Hospital in Scotland, describes her experience with this technology...

Low level laser therapy is the application of a narrow spectral width light over injuries or lesions to stimulate healing within those tissues. The application can improve wound healing rates and reduce pain and risk of infection. Laser therapy has been used to treat ulcers, pressure sores, infected wounds, burns, traumatic wounds and postoperative wounds that are failing to heal. Laser therapy is thought to work through a variety of mechanisms:

- Photons from a laser probe are absorbed into the mitochondria and cell membranes of the cells.
- Single oxygen molecules build up which influences the formation of adenosine triphosphate, which in turn leads to replication of DNA.
- Increased DNA leads to increased neurotransmission.
- A cascade of metabolic effects results in various physiological changes.

In summary, this results in improved tissue repair, faster resolution of the inflammatory response, and reduction of pain.

As a tissue viability nurse I first came across laser therapy at a study day. I decided that, if the results were as good as they appeared, I would trial with a view to purchase. I have been using a laser system for over a year now. It is simple to use, very cost-effective in terms of finance and time, and comes in its own case for easy transport between patients. It is used in conjunction with the patient’s dressing regime, according to the holistic wound assessment.

For infection control precautions a transparent film dressing is used to cover the laser head between patients, and on removal the laser probe is cleaned with an alcohol wipe.

Conclusion

I have set up a laser outpatient clinic and have successfully treated over 50 patients with various chronic wounds ranging from venous leg ulcers, arterial leg ulcers, pressure sores, pilonidal sinus, traumatic wounds and burns. I am currently in the process of undertaking a patient satisfaction survey looking at the patient’s perspective of their treatment.