Softwave TRT: Addressing Change on a Cellular Level

Here's a new solution
for difficult-to-treat pedal wounds.

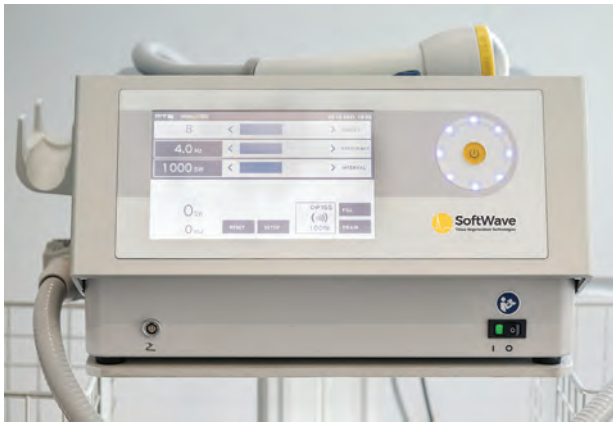
BY DUANE CUMBERBATCH, DPM

As a podiatrist and wound care specialist, I used this past year to research options that went beyond the industry standard treatment of care to find a way to treat the underlying issues and etiologies of a wound. I was looking for solutions to address difficult-to-treat wounds, as many of our patients have multiple co-morbidities such as diabetes, PAD, and other chronic conditions, and whose healing seems "stuck".

The idea of using shockwave for wound care was a new concept.

Physicians have limited options when treating chronic wounds. Our clinic uses debridement and advanced wound care products, and at times we recommend hyperbaric oxygen, but with HBO there are certain requirements that need to be met and the treatment can be cost and time-prohibitive for patients. I find even with a wound VAC progress stalls at a certain point. In all cases, the patients can't seem to get past a certain phase of healing. It seems that one way to get them beyond this phase is to address change on a cellular level.

In my research, I came across an article on shockwave therapy and was introduced to SoftWave Tissue Regeneration Technologies. I was familiar with shockwave therapy as we treat patients at times for plantar fasciitis but the idea of using shockwave for wound care was a new concept. In discovery, I learned shockwave was approved for DFUs and burns in 2019 and 2020. I also found more literature and high-level evidence for its use in wound care on a cellular level (Huang 2020 Snyder 2019, Ottoman 2012). The findings that a true shockwave treatment can increase blood flow at the treatment site and modulate inflammation to promote angiogenesis and epithelization were encouraging.



The literature indicates that true shock wave therapy initiates mechanotransduction mechanisms with 3 phases at a cellular level: physical, chemical, and biological. These mechanisms include:

- Increases blood supply
- Modulates inflammation
- Activates and recruits resident stem cells
- Stimulates cytokines and growth factors

Continued on page 102

Clinical Innovations

Clinical Innovations is PM's ongoing series of articles dedicated to introducing new concepts, technologies and studies to the podiatric community. Readers should be aware that Podiatry Management does not specifically endorse any of the technologies, concepts, or products being discussed.

- Promotes angiogenesis
- Promotes wound epithelialization
- Repairs and regenerates tissues
- Reduces acute and chronic pain

Softwave TRT has helped me reduce complications, time, pain and costs for my patients.

The research was convincing enough for us to try the device. A SoftWave TRT representative trained us at our clinic and we started using it with my most challenging patients. The device was easy to use—it's a non-invasive procedure, does not require anesthesia, and typically takes about ten minutes to treat the average wound area. We started seeing changes—such as a reduction in wound size—generally by the third treatment. I incorporated Kent Imaging technology to document weekly progression and pre and post-treatment measurements of increased blood oxygenation and perfusion. The treatment was well-tolerated and our patients reported pain reduction.

The therapeutic effects of Softwave TRT therapy have been shown to include:

- Pain relief—analgesic effect
- Anti-inflammatory action
  - Lowers the pro-inflammatory immune response
  - Decreases cellular apoptosis and reduces necrosis
- Antibacterial effect in the treatment of infections
- Induces the expression of endogenous growth factors
- Angiogenesis; improved vascularity and blood circulation, tissue supply
- Ossification; formulation of new bone tissue
- Stimulates natural anabolic and growth function in all kinds of tissues (skin, bones, cartilage, smooth and striated muscles, nerves)
- Activation of stem cells; metabolism goes up, proliferation goes up, migration goes up, differentiation goes up
- Tissue remodeling and regeneration

Our investment in SoftWave TRT has helped not only our patients but also our clinic as a way to increase revenue potential and position our practice as a leader in innovation (there is a reimbursement pathway). Personally, incorporating SoftWave has been gratifying knowing I'm able to offer patients an innovative way to heal, even those with neuropathy who can still feel pain. These patients are telling me they are gaining more sensation, which leads me to believe that this could also be a viable alternative treatment for neuropathy.

SoftWave
Tissue Regeneration Technologies

SoftWave TRT therapy isn't limited to wound care in our office. We are also using it to calm inflammatory issues as well as musculoskeletal, hamstring tendinopathy, Achilles heel, post-operative scars, and plantar fasciitis. On these, we've seen immediate results with pain and motion. For skin substitutes, we use it as a prep or as a way for the wound to get healthier faster.

The device was easy to use—it's a non-invasive procedure, does not require anesthesia, and typically takes about ten minutes to treat the average wound area.

Overall, we have seen significantly improved outcomes, especially with non-healing wounds. Implementing SoftWave TRT has helped reduce complications, time, pain and costs for patients and has allowed me an alternative to offering my patients a way to heal and get back to living. **PM**

Dr Cumberbatch is a practicing podiatrist in Fort Myers, FL. His area of specialty includes reconstructive surgery of the foot and ankle, limb preservation, and wound care. Dr. Cumberbatch completed the Ilizarov fellowship in Kurgan, Russia.