75th Annual Meeting Poster Presentations
Extracorporeal Shockwave Treatment for Chronic Diabetic Skin Ulcers

Poster Presentation Number: P528

Location: Moscone Convention Center
Tumors/Metabolic Bone Disease

Karl Wu, MD Taipei Taiwan
Chi-Shiung Hsu, MD
Yur-Ren Kuo, MD, PhD
Rue-Tsan Liu, MD
Feng-Sheng Wang, PhD
Ching-Jen Wang, MD Kaohsiung Taiwan

ESWT is more effective than HBO in chronic diabetic skin ulcers. Application of ESWT results in tissue regeneration effects in chronic diabetic skin ulcer similar to that observed in bone and tendon.

This prospective study evaluated the efficacy of extracorporeal shockwave treatment (ESWT) in chronic diabetic skin ulcer and compared with hyperbaric oxygen therapy (HBO), and investigated the antibacterial and regeneration effects.

Seventy patients with 72 chronic diabetic skin ulcers were randomly divided into two groups. There were 34 patients with 36 ulcers in ESWT group and 36 patients with 36 ulcers in the HBO group. Both groups showed similar demographic characteristics. Patients in ESWT group received shockwave treatment, whereas patients in HBO group received HBO therapy.
Culture and sensitivity, blood flow perfusion scan and biopsy were performed before and after treatment. The evaluations included clinical assessment, bacteriological study, histomorphological examination, immunohistochemical analysis and blood flow perfusion scan.

The overall results showed completely healed in 31%, improved in 58% and unchanged in 11% for the ESWT group; and 22% completely healed, 50% improved and 28% unchanged for HBO group ($P = 0.001$).
ESWT group showed significantly better blood flow perfusion and considerably more active cell proliferation and concentration than HBO.
On immunohistochemical analysis, ESWT group showed significant increases of eNOS, VEGF and PCNA expressions and decreases of TUNEL expression than the HBO group.
The culture results revealed significant decreases in bacteria growth after treatment, but no difference noted between the two groups.

ESWT is more effective than HBO in chronic diabetic skin ulcer.
ESWT significantly improves blood flow perfusion associated with increased angiogenesis, increases cell proliferation and decreases cell apoptosis.

Observation : the title indicates the FDA has not cleared the drug or device for the described purpose.