Extracorporeal Shockwave Therapy for Treatment of Keloid Scars.

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Abstract

The purpose of this investigation was to study the effectiveness of extracorporeal shockwave therapy (ESWT) for the treatment of keloid scars, and compared the results with intralesional steroid injection. Thirty-nine patients were randomly divided into 22 in ESWT group and 17 in steroid group. The ESWT group received 3 ESWT treatments in 6 weeks. The steroid group received 3 intra-lesional triamcinolone injection in 6 weeks. The evaluations included gross morphology, functional outcome, local blood flow perfusion, biopsy for histopathological examination and immunohistochemical analysis. Both groups showed significant improvements in appearance with less discoloration, flatter and softer consistency and more elasticity of the lesions but unchanged size after treatment. Overall, there was no significant difference between two groups. Both groups showed comparable functional scores, POSAS patient and observer scales. The blood flow perfusion rates were statistically not significant between two groups before and after treatments. Histopathological findings revealed no significant difference in cell count, cell activity and cell concentration between two groups. After ESWT significant decreases in collagen type I, type III and Masson Trichrome stain were observed after ESWT as compared to steroid group. However, very little changes were noticed in angiogenesis, inflammatory cytokines, tissue proliferating and apoptosis, and no statistical significance was noticed between two groups before and after treatment. This study revealed that ESWT showed comparable functional outcome, POSAS patient and observer scales as compared to steroid injection for keloid scars. Treatment of keloid scars with ESWT resulted in significant decreases in collagen fibers and increases in MMP-13 enzyme.

Image



One course of ESWT

observation 1 year

Recent Publications

1. Wang CJ, Cheng JH, Kuo YR, Schaden W, Mittermayr R: Extracorporeal shockwave therapy in diabetic foot ulcers. International Journal of Surgery 2015; 24:207-209.
2. Wang CJ, Wu CT, Yang YJ, Liu RT, Kuo YR. Long-Term Outcomes of Extracorporeal Shockwave Therapy for Chronic Foot Ulcers. Journal of Surgical Research 2014; 189:366-372.
3. Wang CJ, Ko JY, Kuo YR, Yang YJ: Molecular changes in diabetic foot ulcers. Diabetes Research Clinical Practice 2011; 94:105-110.
4. Wang CJ, Kuo YR, Wu RW, Liu RT, Hsu CS, Wang FS, Yang KD: Extracorporeal shockwave for diabetic foot ulcers. Journal of Surgical Research 2009; 152: 96-103.
5. Wang CJ, Cheng JH, Huang CY, Hsu SL, FY Lee, HK Yip: Medial tibial subchondral bone is the key target for extracorporeal shockwave therapy in early osteoarthritis of the knee. American Journal of Translation Research 2017; 9(4): 1720-1731.
6. Wang CJ, Cheng JH, Chou WY, Hsu SL, Chen JH, Huang CY: Changes of articular cartilage and subchondral bone after extracorporeal shockwave therapy in osteoarthritis of the knee. International Journal of Medical Sciences 2017; 14: 213-223.
7. Wang CJ, Cheng JH, Su SH, Huang CY, Hsu SL. Next-generation sequencing identifies articular cartilage and subchondral bone miRNAs after ESWT on early osteoarthritis knee. Oncotarget. 2016 Dec 20;7(51):84398-84407.
8. Wang CJ, Weng LH, Sun YC, Wang FS. Molecular Changes after Shockwave Therapy in Osteoarthritic Knee in Rats. Shock Waves 2016; 26(1):45-51
9. Wang CJ, Chou WY, Hsu SL, Huang CY, Cheng JH: ESWT and alendronate sodium demonstrate equal protective effects in osteoarthritis of the knee. Shock Waves 2016; 26(1):53-62.
10. Wang CJ, Huang CC, Yip HK, Yang YJ: Dosage Effects of Extracorporeal Shockwave Therapy in Early Hip Necrosis. International Journal of Surgery 2016; 35: 179-186



Biography

Ching-Jen Wang, M.D. graduated from National Taiwan University, College of Medicine. He is a board certified orthopedic surgeon and currently holds a clinical faculty at Chang Gung University College of Medicine and serves as a consultant orthopedic surgeon of Kaohsiung Chang Gung Memorial hospital, Taiwan. He has published more than 236 papers in reputed journals and has been serving as the reviewer in many journals. His primary interest and area of expertise include sports medicine, knee and hip replacement surgery, shockwave medicine and tissue regeneration.

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Notes/Comments: