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Low-Intensity Shockwave Therapy Improves Hemodynamic Parameters in Patients With Vasculogenic Erectile Dysfunction: A Triplex Ultrasonography-Based Sham-Controlled Trial.

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Abstract

BACKGROUND: Although several reports have documented the subjective improvement of erectile function after low-intensity extracorporeal shockwave therapy (LI-ESWT) in patients with vasculogenic erectile dysfunction (ED), objective assessment data of penile hemodynamics are lacking.

AIM: To assess penile hemodynamics before and 3 months after LI-ESWT in a group of patients with documented vasculogenic ED.

METHODS: This was a double-blinded, randomized, sham-controlled trial. Forty-six patients with ED were randomized; 30 underwent LI-ESWT and 16 had a sham procedure in double-blinded fashion. All patients underwent penile triplex ultrasonography by the same investigator immediately before and 3 months after treatment. Patient demographics, International Index of Erectile Function erectile function domain (IIEF-ED) score, and minimal clinically important difference were assessed at baseline and 1, 3, 6, 9, and 12 months after treatment.

OUTCOMES: Changes in peak systolic velocity and resistance index as measured by triplex ultrasonography at baseline and 3 months after treatment were the main outcomes of the study. Secondary outcomes were changes in the IIEF-ED score from baseline to 1, 3, 6, 9, and 12 months after treatment and the percentage of patients reaching a minimal clinically important difference during the same period for the two groups.

RESULTS: IIEF-ED minimal clinically important differences for the active vs sham group were observed for 56.7% vs 12.5% ($P = .005$) at 1 month, 56.7% vs 12.5% ($P = .003$) at 3 months, 63.3% vs 18.8% ($P = .006$) at 6 months, 66.7% vs 31.3% ($P = .022$) at 9 months, and 75% vs 25% ($P = .008$) at 12 months. Mean peak systolic velocity increased by 4.5 and 0.6 cm/s in the LI-ESWT and sham groups, respectively ($P < .001$).

CLINICAL IMPLICATIONS: Such results offer objective and subjective documentation of the value of this novel treatment modality for men with vasculogenic ED.

STRENGTHS AND LIMITATIONS: Strengths include the prospective, randomized, sham-controlled type of study and the assessment of penile hemodynamics.

Limitations include the small sample and strict inclusion criteria that do not reflect everyday clinical practice.

CONCLUSION: The present study confirms the beneficial effect of LI-ESWT on penile hemodynamics and the beneficial effect of this treatment up to 12 months. Kalyvianakis D, Hatzichristou D. Low-Intensity Shockwave Therapy Improves Hemodynamic Parameters in Patients With Vasculogenic Erectile Dysfunction: A Triplex Ultrasonography-Based Sham-Controlled Trial. *J Sex Med* 2017;14:891-897.

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