Initial Experience of Low-Intensity Shock Wave Therapy for the Treatment of Erectile Dysfunction in Teikyo University Hospital, Japan

Introduction and Objective: Phosphodiesterase type 5 inhibitors (PDE5i) revolutionized the treatment of erectile dysfunction (ED). However, even in vasculogenic ED patients, one fifth of them showed poor response to PDE5i. Recently the beneficial effects of low-intensity shock wave therapy (LI-ESWT) have been reported in the angiogenesis of post-ischemic heart. We report our initial experience of LI-ESWT (ED1000™) in the treatment of ED.
Materials and Methods: This study included patients with ED of more than 6 months sexual health inventory for men (SHIM) score of ≤ 12 without PDE5 inhibitor, EHS grade 1 or 2, mean penile circumferential change (MPCC) by erectometer of <25mm, and non-neurological pathology. Patients were treated by a low energy shockwaves generator (ED1000, MEDISPEC, MD, USA); 3-minute application of 300 shock waves (intensity of 0.09 mJ/mm^2) in 5 different anatomical sites of penis. After the baseline assessment, treatment was done twice a week for 3 weeks (6 times), no treatment for 3 weeks, and twice a week for 3 weeks (6 times) again. Total of 12 shock wave treatment was applied.
Results: Of 30 patients who assigned for the LI-ESWT trial, we analyzed the 12 patients whose data were available at 4 weeks after treatment. Median age was 61 years (range; 39-83). Median duration of ED was 3 years (range; 0.5-18). Median SHIM score was 5 (range; 1-12). Median MPCC was 14 mm (range; 6.7-28.3). One experienced mild pain on the penis during the procedure. SHIM after treatment was significantly increased from 5 to 10 ($p=0.041$, Wilcoxon signed-rank test). Baseline EHS was 0 in 4, 1 in 2, and 2 in 3 patients, and EHS after LI-ESWT was 2 in 4 and 3 in 5 patients. Mean MPCC was increased from 12.83 mm to 24.17 mm after LI-ESWT ($p=0.029$).
Conclusions: We reported the pilot study of LI-ESWT for ED in Japan. This study showed the safety and feasibility of the low energy shockwaves treatment.