

## Effects of extracorporeal shockwave therapy for knee osteoarthritis in chronic stroke patients

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Extracorporeal shockwave therapy (ESWT) has been widely used for pain relief and treatment of musculoskeletal disorders. The aim of this study was to evaluate the effects of ESWT on pain, function and the change of ultrasonographic features in chronic stroke patients with knee osteoarthritis by comparison with placebo treatment. Eighteen chronic stroke subjects with unilateral or bilateral knee osteoarthritis were enrolled and total 33 knee joints were assessed in this study. The patients were randomly allocated to an experimental group (n=9), receiving ESWT and a placebo group (n=9) receiving sham ESWT. For ESWT, patients received the total energy of 1000mJ/mm<sup>2</sup> with 1000 pulses weekly for three weeks. Assessments were performed before and one week after the treatment using the following measurements ; pain on a visual analog scale (VAS), patient perception of the clinical severity of osteoarthritis (OA), scales of K-MBI (walking, wheelchair transfer), FIM (walking, stairs, wheelchair and toilet transfer) and, ultrasonographic features. The ultrasonographic protocol comprised assessment of articular cartilage thickness, Doppler activity and joint effusion height. All patients completed the treatment of ESWT successfully without any complications. Experimental group showed a significant improvement in VAS

score ( $4.50 \pm 1.87$  to  $2.71 \pm 1.38$ ) and the patient perception of the clinical severity of OA ( $1.87 \pm 0.83$  to  $2.75 \pm 0.46$ ). There were also significant improvements in wheelchair transfer ( $4.12 \pm 1.55$  to  $4.62 \pm 1.30$ ) components of the FIM scale score. In ultrasonographic features, increase of Doppler activity was observed in medial joint of experimental group right after the ESWT. This study demonstrated that ESWT has effects in reducing pain and improving function in chronic stroke patients with osteoarthritis. In addition to already explained effects about pain and function, there was significant increase in Doppler activity after the ESWT treatment.

### Biography

Hea-Eun Yang has completed her MA degree in CHA medical school and majored in physical medicine and rehabilitation. She had worked as an Assistant Professor at Severance Hospital and is currently working as a Section Chief at Veterans Health Service Medical Center.