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Is Extracorporeal Shock Wave Therapy Better than Conventional Physiotherapy on Trigger Finger? A Randomized Controlled Study

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Introduction

Extracorporeal shock wave therapy (ESWT) is commonly applied in tendinopathy in physiotherapy practice. Unlike plantar fasciitis and tennis elbow, limited trial is available to investigate the effectiveness of ESWT on trigger finger. General impression is focused ESWT which delivers higher energy to target tissue, may have higher effectiveness. In reality, radial ESWT is more commonly applied in trigger finger due to the high discrepancy in cost. The cost effectiveness of focused and radial ESWT on trigger finger is doubtful.

Objectives

To identify and compare the clinical and radiological effect by ultrasonography of focused and radial ESWT as supplementary modality to conventional physiotherapy treatment on trigger finger.

Methodology

The research is a prospective single blinded randomized controlled trial conducted in the physiotherapy outpatient clinic of United Christian Hospital. Subjects were recruited and randomized into conventional physiotherapy group (CPT), radial EWST group and focused ESWT group from 3 Jan 2017 to 31 May 2017.

All subjects received four weeks of standardized conventional physiotherapy in terms of exercise, biomechanical education and whirlpool therapy. Subjects of radial and focused ESWT group received 1000 shocks per session of their respective ESWT at the highest tolerable energy level in the first 3 sessions additionally. The change in thickness of the A1 pulley and flexor tendon evaluated by ultrasonography, Quinnell classification of trigger finger, visual analogue scale (VAS) pain score, handgrip strength and Disabilities of the Arm, Shoulder, and Hand (DASH) questionnaire scores were measured at the first and final physiotherapy session.

Result

38 subjects completed the study (CPT group n=12, radial ESWT group n=15, focused ESWT group n=11). DASH score (P = 0.01) was found statistical significantly

improved from 42.5 +/- 21.1% to 30.2 +/- 18.3% only within radial ESWT group. Although no statistical significant difference was found in the remaining clinical and radiological parameters within all groups, radial ESWT group was more prone to show clinical improvement in VAS pain score and hand grip strength. The transient inflammation induced by ESWT may mask the outcome, future long term study is needed.

In conclusion, this study shown that radial ESWT adjunct to conventional physiotherapy treatment is evident and cost effective to improve disability in-patient with trigger finger in short term.