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Efficacy of ultrasound versus short wave diathermy in the treatment of chronic radicular low back pain due to lumbar disk herniation

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Non-pharmacological treatment of chronic radicular Low Back Pain (LBP) due to lumbar disc herniation (LDH) includes the use of deep heating Physical Therapy (PT) modalities such as therapeutic Ultrasound (US) and Short Wave Diathermy (SWD). However, systematic reviews on the effects of diathermy, emphasize the necessity for further studies on their efficacy in the treatment of LBP and their impact on function and Quality of Life (QOL).

Method: 82 inpatients with chronic radicular LBP and magnetic resonance imaging consistent with LDH, were randomized into three treatment groups. All received ten sessions of PT modalities over two weeks and a therapeutic exercise program. Group one was treated using Hotpack (HP) (20minutes) Transcutaneous Electrical Nerve Stimulation (TENS), US (10 minutes, 1MHz) all applied to the lower back. Group two received HP, TENS, SWD (10 minutes, 27.12MHz). Group three (control) received HP and TENS. All patients were evaluated before, after, at one and three months post treatment using a visual analogue scale (VAS) for LBP, Modified Oswestry Disability Index (ODI) and Short Form 36 (SF-36).

Results: LBP reduced with treatment and on follow up in all three groups ($p < 0.001$) with no between-group difference ($p > 0.05$). Modified ODI scores significantly improved post treatment in all groups. SF-36 role-physical and emotional, vitality, emotional well-being and health change improved in US and SWD groups ($p < 0.05$) with no between-group difference.

Conclusion: These results suggest that treating chronic radicular LBP secondary to LDH using US and SWD provides no superior benefit to using analgesic modalities and exercise alone with regard to improvement in LBP, subjective function and QOL.

Recent Publications

1. Ozen S, Ozen A, Unal EU, Tufekcioglu O, Ataman S, Yalcin AP. Subclinical cardiac disease in ankylosing spondylitis. *Echocardiography*. 2018;35(10):1579-1586.
2. Saraçgil Coşar SN, Ozen S, Niyazi Kurtcebe A, Coşkun M, Ümit Yemişci O. Prognostic value of magnetic resonance imaging in the evaluation of physical therapy in patients with adhesive capsulitis. *Turk J Phys Med Rehabil*. 2021;25;67(2):146-154.
3. Ozen S, Senlikci HB, Guzel S, Yemisci OU. Computer Game Assisted Task Specific Exercises in the Treatment of Motor and Cognitive Function and Quality of Life in Stroke: A Randomized Control Study. *J Stroke Cerebrovasc Dis*. 2021;30(9):105991.

Biography

Selin Ozen has her expertise in musculoskeletal and neurological rehabilitation with a special interest in stroke and spinal cord injury. She is a senior clinician in the physical medicine and rehabilitation centre of Baskent University Hospital based in Ankara, Turkey. She is a member of the European and Turkish Board of PRM. To date, Ozen has over 30 published works in the field of PRM.

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