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EFFICACY OF EXTRACORPOREAL SHOCK WAVE THERAPY IN PATIENTS SUFFERING FROM KNEE OSTEOARTHRITIS

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ABSTRACT

A degenerative condition called knee osteoarthritis (Knee OA) causes excruciating discomfort and stiffness, which impair movement and make the knee joint disabled. When a person's age increases, they are more likely to experience worsening symptoms and a higher prevalence of overweight knee OA. Pain, morning stiffness, oedema, decreased ROM, crepitus sound, joint damage, and extreme fatigue of muscles are the major symptoms. The incidence of knee osteoarthritis was observed to range from (22% to 39%) generally. In India, it is 28.7%. In this study considering extracorporeal shock wave therapy's (ESWT) efficiency in treating individuals with knee OA, most studies in our review reported that extracorporeal shock wave therapy usefulness in knee OA.

Keywords: Knee OA, shock wave therapy, extracorporeal shock wave therapy, physiotherapy.

INTRODUCTION

A degenerative condition called knee osteoarthritis (Knee OA) causes excruciating discomfort and stiffness, which impair movement and make the knee joint disabled.[1] When a person's age increases, they are more likely to experience worsening symptoms and a higher prevalence of overweight knee OA. Pain, morning stiffness, oedema, decreased ROM, crepitus sound, joint damage, and extreme fatigue of muscles are the major symptoms.[2] The incidence of knee osteoarthritis was observed to range from (22% to 39%) generally. In India, it is 28.7%.[3]The most prevalent kind of osteoarthritis in mid- and older adults that is linked to functional disability in knee OA. The Kellgren and Lawrence method grades knee OA from grade zero - fourth grade as per severity.

Shock waves are positive pressure, a rising time of less than 10 nanometres, and a tensile waveform are all characteristics of Shockwave (SW), which are sonic pulses. They were initially utilised in clinical practice as lithotripsy to dislodge and disturb calcific formations in the bodies. In Germany (Munich), these were originally applied in 1980 to cure kidney stones non-invasively. SWD can be classified as either intra- or extracorporeal based on how it is applied. The ESWT is referred to in the great majority of programs utilised in medical care.[4] ESWT is described as a series of highly energetic mechanically (sonic) impulses of an oscillating path. In order to produce short-lived & turbulence pressure fluctuations in a centre (alternate compressed and decompression phases).[5]

METHODOLOGY

The database was searched through PubMed, Google Scholar, and Research Gate. Different keywords were used Knee OA, Shock wave therapy, extracorporeal shock wave therapy (ESWT), and physiotherapy. The database were searched in 2018. Only studies reporting ESWT effects on orthopaedic conditions were used to compile this article.

Application of Shock Wave Therapy in various Musculoskeletal Conditions

Knee Osteoarthritis

Li et al., 2018 conducted a study on "Management of OA of the knee using extracorporeal shock wave" and concluded that patients with Knee OA may benefit from and feel safe using ESWT.[6]

Xu et al., 2019 done a study on "Extracorporeal shock wave therapy's impact on the management of mild to severe knee osteoarthritis and cartilage lesions" and concluded that ESWT could be able to reduce discomfort and enhance knee joint performance.[7]

Chronic Low Back Pain

Walewicz et al., 2020 conducted a study on "Extracorporeal shock wave therapy's efficacy in treating severe low back pain" and concluded that for individuals with LBP, the ESWT in conjunction with stabilisation training is very helpful over the long term and has a sustained positive impact.[8]

Celik et al., 2020 done study on "Effectiveness of extracorporeal shock wave treatment on severe low back pain patients' discomfort, impairment, and standard of living" and concluded that in terms of improving the indices of pain, disability, sadness, stress and life quality in persons who are having chronic low back pain (LBA), ESWT was significantly clearly better as compare to placebo.[9]

Plantar fasciitis

Xu D et al., 2019 conducted a study on "Injections of topical corticosteroids vs shock wave treatment for plantar fasciitis" said that clinical improvements were seen with both ESWT and local corticosteroids injections (LCI); however, EWST lasted longer than LCI.[10]

Frozen Shoulder

Elerian et al., 2021, done study on "Efficacy of shock-wave therapy vs. intra-articular corticosteroid injection in the treatment of patients with diabetic adhesive capsulitis" and concluded that when it comes to treating diabetic frozen shoulder, shock waves are more efficient and secure than corticosteroid intra-articular injection.[11]

Tennis Elbow

Alarab et al., 2022 done a study on "A clinical trial's physical intervention for lateral epicondylitis: a compare of shock wave therapy and mobilisation technique" and concluded that both ESWT and the MWM were efficient in all of the outcome tests.[12]

Upper Trapezius Trigger Point

Park et al., 2018 conducted a study on "High versus low extracorporeal shock wave treatment for upper trapezius myofascial pain condition" and concluded that in comparison high energy ESWT to low energy a significant improvement in the cervical flexion range of motion was achieved with ESWT and NDI, indicating superior in rehabilitation.[13]

Carpel Tunnel Syndrome

Xu D et al., 2019, conducted a study on "comparison of shock wave therapy versus corticosteroid injections for the treatment of carpel tunnel syndrome" and said that For mild to severe carpal tunnel syndrome (CLS), ESWT is an effective non-invasive short-term therapy that produces a quicker recovery than LCI. [14]

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