Effect of Electrotherapy along with Active Movements for Lower Limb Musculoskeletal Conditions with Sub-Acute and Chronic Pain of Athletes in University of Peradeniya, Sri Lanka: A Randomized Controlled Trial

R.R.W.M.S.I. Wadugodapitiya[1], S. Shynudha[1]*, D.A.R.K. Dasanayaka[1], M.K.I.D. Senarath[1], M.M.J.P. Manchanayake[1], V.M.B.K.T. Malwanage[1], S. Mayooran[1], H.C.B. Jayasinghe[1], S. Vithursha[1], E. Liyanage[1], I. Liyanage[1]

[1]*Department of Physiotherapy, Faculty of Allied Health Sciences, University of Peradeniya*
**sshynudhanu@gmail.com*

Lower limb musculoskeletal conditions are considered as an important problem in the athletic population with higher incidence rate, often delaying return to optimal performance. Proper treatment and rehabilitation strategies are essential for facilitating athletes' return to peak performance levels. Therefore, this study aimed to evaluate and compare the effect of different therapeutic interventions; Transcutaneous Electrical Nerve Stimulation (TENS) and Interferential Therapy (IFT) along with active movements for lower limb musculoskeletal conditions with sub-acute and chronic pain among university level athletes at the University of Peradeniya, Sri Lanka. A double-blind randomized controlled trial was conducted with four study groups. The athletes who aligned the inclusion criteria with lower limb musculoskeletal conditions exhibiting sub-acute and chronic pain (after 10days of onset) were recruited as participants for the study. Seventy-seven athletes were randomly assigned to these study groups; IFT with active movement group (n=19), TENS with active movement group (n=19), IFT only group (n=20) and TENS only group (n=19). Pain intensity, knee and ankle range of motion and ability to perform daily tasks were assessed using Numeric Rating Scale (NRS), goniometer, and Lower Extremity Functional Scale (LEFS) respectively. The collected data were analyzed using one-way ANOVA. Significant improvements in pain and LEFS were observed across all four groups after two weeks of the treatment ($p < 0.05$). Furthermore, significant enhancements in knee flexion, knee extension, ankle dorsiflexion, ankle plantarflexion and ankle eversion range of motion were noted within all the groups ($p < 0.05$), with no significant differences between the groups except for knee extension. The findings highlighted the effectiveness of TENS and IFT used with or without active movements, on pain, functional outcomes, and range of motion in athletes affected by lower limb musculoskeletal conditions.

Keywords: Athletes, Chronic Pain, Electrotherapy, Performance of Daily Task, Range of Motion

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