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“The important thing in research is not so much to obtain new facts as to discover new ways of thinking about them”-

-William Laurence Bragg

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ABSTRACT

Efficacy Of Three Physiotherapy Interventions In Influencing Clinical And Biochemical Changes Of Delayed Onset Muscle Soreness (DOMS) In Recreational Athletes

Acute muscular injury is the most common injury affecting athletes and those participating in exercise. Nearly everyone has experienced soreness after unaccustomed or intense exercise. Soreness peaks between 24 and 48 hours post-exercise with residual soreness usually remaining beyond this time frame.

OBJECTIVE: The purpose of this study is to investigate the effective physiotherapy approach in minimizing the symptoms of muscle soreness and in limiting the elevation of the biochemical markers. STUDY DESIGN: Randomized control trial.

SETTING: Saveetha University Physiotherapy outpatient department.

PARTICIPANTS: One hundred and sixty healthy recreational athletes participated in the study.

METHODOLOGY: Baseline measurements Creatine kinase(CK), Lactate dehydrogenase(LDH), Pain(VAS), and Maximum isometric voluntary contraction(MIVC) were taken for all the participants and Delayed onset muscle soreness (DOMS) was experimentally induced in elbow flexors by Eccentric loading protocol. After induction of DOMS, Participants were randomly allocated in to one of the four experimental conditions: Group 1-Cryotherapy, Group 2- Phonophoresis, Group 3-Exercises and Group 4-Control.

OUTCOME MEASURES: Serum CK & LDH Enzymatic activity, Pain assessed by VAS score and MIVC by Modified hand held dynamometer were measured at baseline, 24, 48, 72 and at 96 hours.

RESULTS: One way ANOVA analysis revealed significant differences (p<0.01) between 0 hr and 96 hrs, as well as between 24, 48 and 72 hrs, in the parameter of CK, LDH, Pain and MIVC.

CONCLUSION: In the present study it was found that the Exercise
Intervention (Group 3) was found to be effective in limiting the elevation of Biochemical markers (CK & LDH), when compared to other three groups. Where as in the parameters of vas score and MIVC, Exercise Intervention (Group 3) as well as Phonophoresis (Group 2) was found to be effective in minimizing the symptoms of soreness when compared to other two groups.

**KEY WORDS:** Maximum isometric voluntary contraction, Muscle soreness, Creatine kinase, Lactate dehydrogenase.