37 THE COMPARATIVE EFFECTIVENESS OF ISOTONIC AND ISOKINETIC STRENGTH TRAININGS ON QUADRICEPS PEAK TORQUE

Hitanshu Agnihotri *Department of Physiotherapy, Maharishi Markandeshwar University, Mullana, Ambala, Haryana, India*

10.1136/bjism.2010.078725.37

The present study compares the effectiveness of isotonic and isokinetic exercises on peak torque of quadriceps in 45 healthy young males. The subjects were randomly assigned into three groups (n=15): group A – isotonic group, group B – isokinetic group, group C – control group. Peak torque of quadriceps at velocities of 220 and 100°/s was tested twice with a gap of 4 weeks using isokinetic dynamometer. Isotonic protocol included three sets of 10 repetitions at 50% 10 RM, 75% 10 RM and 100% 10 RM. The isokinetic protocol consisted of one set of 10 repetitions at velocities of 220, 160, 100 and 40°/s each. Each exercise protocol was performed thrice a week for 4 weeks with 1-min rest interval. The subjects in the control group were not prescribed any kind of exercise training. Paired t test showed significant changes at 220°/s ($t=4.62$, $p<0.001$) and 100°/s ($t=2.49$, $p<0.05$) in group A, at 220°/s ($t=3.42$, $p<0.05$) in group B and non-significant changes at 220°/s ($t=2.02$, $p>0.05$) and 100°/s ($t=0.82$, $p>0.05$) in group C. Post-test one-way analysis of variance revealed significant changes at 220°/s ($F=4.47$, $p<0.05$). Isotonic exercises were found to be more effective than isokinetic exercises in increasing the peak torque at high velocity.