THE ANALYSIS OF MUSCULAR STRENGHT AND EMG IN KAYAK STROKE

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The purpose of this study was to examine the muscular strength and EMG performance during kayak stroke. There are five college kayak athletes participate in this study. The mean of the subjects' age, height, and weight are 20 yr (±0.71), 174 cm (±0.57) and 70 Kg (±0.14) respectively. Each subjects will run four different experiments on the kayak ergometer with stroke time mode: 15-sec, 1-min, 2-min and 4-min. Muscular performance data collected from tensiometer and surface EMG on Biceps, Triceps, Deltoids and Latissimus dorsi. The synchronizing data will be collected by MP-150 system.

This main goal of this study is trying to find out the relation between muscular power, strength and endurance of each subject. Moreover, to find out the discharge sequence of different muscular group, and the minimum and maximum of iEMG at different stroke time mode.

The order of total efficiency of working muscle for all subjects were D?E?C?B?A. Due to the specificity of paddling movement, the EMG data are practical for canoe training. All subjects had different discharging sequence in different test interval (1-min to 4-min). In explosive category (15-sec~4min-30sec), the best muscular efficiency was the "D" subject (2-min-15sec). The total IEMG value was 1.12(mv/sec) and the percentage of each muscle group was Biceps (16.43%), Triceps (8.18%), Deltoids (45.46%) and Lats (29.93%). In muscular endurance category (1-min-60sec~4min-120sec), the total IEMG value was 0.99(mv/sec) and the percentage of the each muscle group was Biceps (11.08%), Triceps (34.12%), Deltoids (27.85%) and Lats (26.95%). In endurance category (4-min), the most efficient value was from the "D" subject with total IEMG value 1.70 (mv/sec) and the percentage of each muscle group Biceps (14.54%), Triceps (33.52%), Deltoids (28.42%) and Lats (23.52%) respectively. this study will interest in comparing the max impulse in different interval of the test. The result of this study was useful for practical application.