

Abstract

Title: Kinesiological analysis of the rowing stroke on a single scull and on a rowing ergometer Concept 2 comparison

Purposes: The purpose of the present study was to determine a specific structure in timing of selected muscles during two movement patterns – rowing on a single scull and rowing on an ergometer Concept 2.

Methods: By surface electromyography we recorded muscular activity, synergies and involvement throughout mean cycle of the rowing stroke.

Results: The mutual correlations of mean EMG curves of all measured muscles showed, that there were not found any differences in inter-locomotive synchronization of selected muscles. Established values of correlation (r) showed higher level of dynamic balance (performance similarity between both measured activities. Determination of the muscular activity timing considering onsets and cessations, was in the percentual results explication of the movement cycle inter-locomotive different.

Conclusion: Results showed a great similarity in synergies organizing the muscular coordination in between both measured physical activities. But timing of the movement was different in the moments of muscular activity onsets during rowing and during ergometer rowing. This may be attributed to the specificity of on-water locomotion.

Key words: Rowing, Concept 2, Single scull, Electromyography, Biomechanics