Abstract

The Master’s thesis is focused on monitoring of the core muscles and m. biceps femoris activity in postural stability examination by Dynamic Neuromuscular Stabilization tests using surface electromyography in patients with LBP. Trunk extension test, trunk flexion test and squat test were chosen. The aim of this study was comparing muscle activity timing, symmetry of muscle activation and average activation between healthy subjects and patients with LBP. The changes of muscle activation pattern were observed and average activation was determined.

In theoretical part the principles of DNS, surface electromyography and the relationship between postural stabilization and LBP are discussed.

Two groups were measured – patients with LBP and a control group, 20 subjects together. The onset times were measured and rank of activation for each test and for each subject was determined. Then the average order for whole group was specified. Measured data were evaluated according to Wilcoxon signed-rank test. In average activation there was analysed change of activation in time.

Results were compared between two measured groups. There is significant difference between the two groups in the rank of activation of m. ES l. dx. in trunk extension test and m. EO in squat test. Assymetry in timing of the right and left body side was observed, but did not reach significant values. There was difference only by m. IO in trunk flexion test. The average activation was observed and discussed.

In conclusion, there is difference in selected parameters between the activity of measured core muscles and m. biceps femoris in patients with LBP and control group.