

Abstract

Title: The influence of physical activity on postural stability in individuals after renal transplantation

Objectives: The aim of this study was to evaluate the current state of postural stability on individuals up to one year after renal transplantation. And then the results relate to the current state of health of the patient, his habitual physical activity and intervention program.

Methods: On our pilot study, 12 probands participated, 5 women with an average age of $58 \pm 2,88$ years and 7 men with an average age of $64 \pm 5,67$ years post-transplant, who were included in the experimental group (n=12). These took part on a three-month exercise intervention that included group and individual exercises. The influence of physical activity on the quality of postural stability was objectified by a posturography, where a pressure plate Footscan was used, on the premises of the Clinic of Nephrology TC IKEM in Prague. The results were compared with parameters of postural stability in the control group (n=12) without renal disease, homogeneous age and gender.

Results: When comparing individual tests and their results with the control group, there were apparent differences in the sense of deterioration in the experimental group. However, when comparing between the input and output measurements in the experimental group there were, after the three-month exercise program in the evaluated parameters, positive results. An exception to these results was a test of the left lower extremity, not only a more pronounced deterioration in all parameters occurred but also on the physiological stand with open eyes there was a value of a negative change in the total COP displacement path. These results are distorted by the high values of one of the probands.

Conclusion: Regular physical activity in the experimental group has a positive impact on improving postural stability during static standing.

Keywords: renal transplantation, post-transplant complication, physical activity, postural stability, posturography