

Abstract

Title: The effect of instrumental lymphatic drainage of the lower limbs on postural stability in patients with unilateral lymphedema.

Aims: The main aim of this study is to assess the effect of instrumental lymphatic drainage on the static and dynamic postural stability in people with unilateral lymphedema of the lower extremities.

Summary: The study was done in October 2020. Due to the epidemiological situation around the Covid-19 pandemic, 13 probands aged 30-80 years were included in the study. The circumferences of the lower limbs were measured before and after the application of instrumental lymphatic drainage. The postural stability of the probands was tested on the ProKin252 posturograph with the following tests: Stability Compared Double Stance, Limits of Stability and Balance Both Feet. Measurements by these tests were performed before and after instrumental lymphatic drainage intervention, which lasted 50 minutes. Lower limb circumference results were written into recording sheets and test results were downloaded from the patient's file in PDF format. Final data were processed using LibreOffice Calc and SciPy library tools. To calculate differences, the following statistical methods were used: Shapiro-Wilk test, Student's T-test and Wilcoxon paired sequence test. We used Fisher's exact test for statistical evaluation of binary quantities. Bartlett's test was used to analyze the equality of variances. The level of statistical significance was determined to $\alpha = 0,05$ and in one case 0,01.

Results: Results of this study showed that one intervention of instrumental lymphatic drainage on lower limbs is not enough for a statistically significant affect on the static and dynamic postural stability of probands with unilateral lower limb lymphedema, aged 30-80 years, mean BMI 35,8 and with a predominance of grade 2 lymphedema. After an analysis of individual parts of the statistical tests, trends favouring the used intervention emerged. Results also suggest that probands place COP more in the posterior quadrants and on the limb side with lymphedema.

Key words: posture, ProKin 252, Stability Compared Double Stance, Limits of Stability, Balance Both Feet, physiotherapy