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Influence of ankle training program on dynamic balance in patients with diabetic peripheral neuropathy

Mahmoud Yassin Elzanati
Egypt

Background: The purpose of this study was to determine the influence of the training program to ankle region on dynamic balance in 30 female diabetic peripheral neuropathy patients. In addition, the aim of the study is to investigate the validity of using multi-directional reach test as a tool in assessing dynamic balance. The patients were assigned randomly into two equal groups (GI & GII). The patients in the control group received selected balance exercise whereas, the patients in the study group received selected balance exercise in addition to a design program directed mainly to ankle muscles from different positions. Tests like rhythmic weight shift test and tandem walk test through computerized posturography device and clinically by multi-direction reach test were conducted. Dynamic balance was assessed before and after six weeks of treatment intervention.

Results: There were significant differences between both groups (the study group and control group) at all different speed of rhythmic weight shift test in left-right direction. In forward-backward direction, there was no significant difference even at slow speed. There was a significant difference between both groups in step width and speed of tandem walk test while there was no significant difference in end-sway. There were significant differences between both groups in four reach directions of multi-direction reach test.

Conclusion: It can be concluded that the suggested ankle training is effective in treatment of balance disturbance and consequently could decrease the risk of fall in diabetic peripheral neuropathy patients. The multi-directional reach test is a valid and inexpensive tool that assesses dynamic balance

mahmoud_pt@yahoo.com

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