

ABSTRACT

The main objective: The main aim of the study was to verify the effectiveness of conservative methods in the treatment of incipient hallux valgus (HV) and to compare two specific methods, i.e. kinesiotherapy in the form of active exercise and kinesiotaping, an application of kinesiology tape. The investigated parameters were the HV angle size and the pain of the 1. metatarsophalangeal (MTP) joint. Furthermore, the study focused on the association between HV and genetic predisposition, lower limb pathologies, toe mobility, muscle strength of musculus abductor hallucis and foot pronation rate.

Methods: Prior to the start of the therapy, all 13 probands underwent an initial examination and measurements, which included a questionnaire, kinesiological analysis and HV angle measurement using goniometry. For each proband, the lower limb with the greater measured HV angle was selected, and the remaining tests (HV movement tests, musculus abductor hallucis muscle test and Navicular drop test) were performed on that lower limb only. These examined probands were divided into pairs according to the similarity of the HV angle size, and then it was randomly selected which proband of the pair would be assigned to group 1 (kinesiotherapy) and which to group 2 (kinesiotaping). Therapy in both cases lasted 4 weeks. The probands from group 1 practiced a set of selected exercises for 20 minutes once a day and the probands from group 2 were repeatedly applied kinesiology tape. At the end of the therapy, the probands underwent an exit examination, which was identical to the initial examination.

Results: Seven probands reported the presence of 1. MTP joint pain before the start of therapy. After therapy, this parameter improved in 4 probands. Only 1 proband showed a reduction in the size of the HV angle. Improvement in movement tests, focusing on toe mobility, was noted in more probands in group 1 (kinesiotherapy) than in group 2 (kinesiotaping). The change in muscular strength of the musculus abductor hallucis after therapy was observed in one proband from group 1 (kinesiotherapy) and in the same way in one proband from group 2 (kinesiotaping). According to the results of the kinesiological analysis and the Navicular drop test, no relationship between HV and lower limb pathologies or foot pronation rate can be determined, as no changes occurred. However, a direct association between HV and genetic predisposition was confirmed in all 13 probands.

Conclusion: According to the results of the study, it can be concluded that conservative methods, both kinesiotherapy and kinesiotaping, have a positive effect on reduction of 1. MTP joint pain, but not on the size of the HV angle. Furthermore, it can be argued that kinesiotherapy has a greater effect on improving toe mobility compared to kinesiotaping. The positive effect of conservative methods on the strength of the musculus abductor hallucis was not clearly confirmed in either case. However, it could be said that HV is directly related to genetic predisposition.

Key words: conservative methods, goniometry, pain, mobility, exercises

