Introduction

The stroke patients often have problems with asymmetry of stance and ambulation. This study was to assess the symmetry of weight bearing in stroke patients during stance and ambulation with and without wearing a lateral-wedge insole on the non-paretic side.

Methods

There were sixteen hemiplegic patients (mean age: 54.12±2.85 year old) with mean duration of illness 90.69 ± 21.77 days. The subject with and without 5° lateral-wedge insole performed quiet standing on platforms (AMTI, USA) for 10 seconds, then walked with comfortable speed along a 6-m woody walkway. Symmetry index (SI) indicated the difference between the paretic and non-paretic limbs with zero being symmetric.

Results

The SI of vertical ground reaction force (GRF) during static standing was significantly improved (from 60.82% to 48.02%, \( p < 0.05 \)) after wearing 5° lateral-wedge insole. During walking with wedge on the non-paretic limb, the SI of mean vertical GRF in stance phase was not significantly changed, although the mean vertical GRF on the non-paretic limb decreased significantly from 7.21 ± 0.13N/kg to 6.94 ± 0.11 N/kg (\( p < 0.05 \)).

Discussion and Conclusion

The 5° lateral-wedge insole on the non-paretic side can improve symmetry of weight bearing during static stance [1], but the effect is not significant during ambulation. The long-term effect of 5° lateral-wedge insole on the non-paretic side needs further investigation.

References:


Keywords: Stroke, Gait, Insole, Symmetry