

# Effectiveness of dry needling in equinovarus foot deformity in patients with cerebrovascular accident

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## Abstract

**Introduction** Spasticity secondary to cerebrovascular accident is one of the main causes of disability in adults. Equinovarus foot is a common condition in patients with cerebrovascular accident, with an estimated prevalence of 18% (Verdié C. 2004). This deformity is mainly caused by spasticity of the tibialis posterior muscle, together with weakness of the tibialis anterior.

**Aims** To determine the effects of deep dry needling together with neurorehabilitation treatment (based on the Bobath concept) on spasticity and motor function after a cerebrovascular accident.

**Material and Methods** A single-blinded randomized experimental study, which comprised ten ( $n = 10$ ) patients who had suffered a cerebrovascular accident, who were randomly assigned to a control group (CG) who received neurorehabilitation treatment ( $n = 5$ ) and another experimental group (EG) who received ultrasound-guided dry needling in the tibialis posterior and tibialis anterior muscles plus neurorehabilitation treatment ( $n = 5$ ). Measurements were made at baseline and ten minutes after treatment by a blinded evaluator who measured spasticity (Ashworth scale) and motor function (timed up and go test).

**Results** The subjects who received dry needling showed a decrease in spasticity after treatment of the tibialis posterior ( $P < 0.001$ ) and the tibialis anterior muscles ( $P < 0.003$ ) compared to those who did not receive treatment. The descriptive analysis of the timed up and go test, (CG pre:22.7720/post:21.8060 and EG pre:23.8960/post:17.9780\*) revealed a decrease in times for both groups, which was more significant in the group of neurorehabilitation treatment plus dry needling.

**Conclusion** The inclusion of deep dry needling in a session of neurorehabilitation treatment (following the Bobath concept) appears to be effective for the normalization of tone and for the improvement of balance during the gait cycle in patients who have suffered a cerebrovascular accident.

## Keywords

- ▶ Spasticity
- ▶ cerebrovascular accident
- ▶ dry needling