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Effect of Dry Needling on Spasticity, Gait and Balance in Post-stroke Survivors: A Systematic Review

Harshjot Kaur, BPT Student, Department of Physiotherapy, Sri Guru Granth Sahib World University, Fatehgarh Sahib, Punjab, India.
Supreet Bindra, Assistant Professor, Department of Physiotherapy, Sri Guru Granth Sahib World University, Fatehgarh Sahib, Punjab, India.
Pankajpreet Singh, Assistant Professor, Department of Physiotherapy, Sri Guru Granth Sahib World University, Fatehgarh Sahib, Punjab, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Supreet Bindra,
Assistant Professor, Department of Physiotherapy, Sri Guru Granth Sahib World University, Fatehgarh Sahib, Punjab, India.
E-mail: physio.supreet@gmail.com

ABSTRACT

Stroke is defined as a sudden neurological deficit of the Central Nervous System due to ischaemia or haemorrhage. Spasticity occurs in 30-80% of stroke patients, typically manifested 3-6 months after stroke. (DN) is a relatively new intervention that has been recently suggested for the control of spasticity following stroke. We aimed to evaluate the effectiveness of DN on spasticity, gait and balance in post-stroke survivors. A computer search of Cochrane library, CINAHL, Physiotherapy Evidence Database (PEDro) and PubMed was conducted. We also performed a manual search of references that were included in the selected articles. Studies included were: i) Randomised Clinical Trials (RCTs); ii) case series; iii) involving patients with a diagnosis of stroke; and iv) using DN alone or in a multimodal treatment. Muscular spasticity was the primary outcome and the additional outcome included were: balance and gait. The methodological quality of the studies was assessed with Physiotherapy Evidence Database Scale. The risk of bias of the included studies was assessed with the Cochrane Risk of Bias Tool for Randomised Controlled Trials.A total of seven RCTs with 218 patients were included in the systematic review. All studies generally reported an improvement of spasticity level, gait and balance after the use of DN, alone or combined with other interventions in stroke survivors.DN for lower extremity in post-stroke survivors may impact positively on spasticity, gait and balance. However, there was a significant heterogeneity across trials in terms of sample size, control group, treated muscles and outcome measures. More RCTs are needed to cover aspects of biases found in the literature, in particular the blinding of participants and personnel.

Keywords: Central nervous system, Ischaemia, Stroke