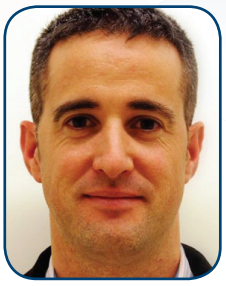

Pablo Herrero Gallego

STROKE-POC

Comparative study of the mechanism of action of Dry Needling and Botulinum Toxin type A as a treatment for lower limb post-stroke spasticity: a proof of concept controlled trial

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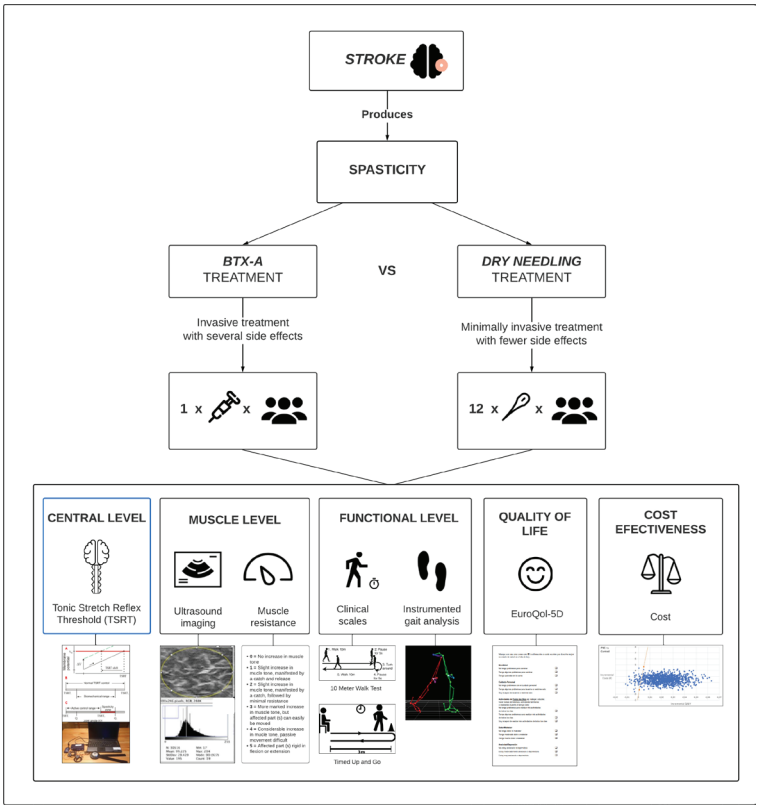
Stroke is a leading cause of disease, disability, and economic loss. As populations grow and people live longer, cases of stroke are likely to increase. Stroke affects the central nervous system and interferes with mobility and walking. One consequence of stroke is muscle spasticity (stiffness) that affects half of stroke victims within six months, causing discomfort and hindering recovery. One of the most effective treatments for spasticity is the injection of Botulinum Toxin type A (BTX-A), which is considered 'invasive' and has been linked to several side effects. 'Dry needling' (DN) is a relatively new treatment for spasticity with comparable effectiveness as BTX-A. DN is minimally invasive and has fewer side effects. However, it is not usually applied in current clinical practice. While studies have reported the effects of these two techniques on muscle and mobility, the effects on the whole system have not been systematically studied.



We propose: DN and BTX-A will have comparative effects on decreasing spasticity, but DN will have fewer side effects and be more acceptable to patients and their families. We will study this by examining the effects of each treatment on ankle muscles in two groups of subjects. One group will have a series of 12 DN sessions and the other will have one BTX-A injection. We will evaluate effects on spasticity at different levels – muscle structure, reflex activity, motor ability, quality of life, acceptability, and cost-effectiveness. We will use novel methods to help clinicians, patients, and families make more informed spasticity treatment choices.