E-Poster

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Electroacupuncture for Motor Recovery in Subacute Stroke

Topic: Neurostimulation (rTMS, tDCS, etc.)

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BACKGROUND

Upper limb impairment is a common consequence of stroke, with motor recovery mechanisms still not fully understood. Electroacupuncture (EA) has shown promise in facilitating recovery, yet its effects on the cortico-reticulospinal tract (CReST), a critical pathway for stroke rehabilitation, remain underexplored. This study aims to investigate the effects of EA on motor recovery and CReST plasticity in subacute stroke patients.

METHODS

Thirty-two subacute stroke patients were randomly assigned to either the EA or control group. Both groups underwent a two-week rehabilitation program, with the EA group receiving EA at the 'Hegu' (LI4) and 'Quchi' (LI11) acupoints before physical therapy. Motor function and muscle spasticity were assessed using the Fugl-Meyer Assessment for Upper Extremity (FMA-UE) and the Modified Ashworth Scale. Surface electromyography (sEMG) and functional near-infrared spectroscopy (fNIRS) were used to measure motor performance and neural activity.

RESULTS

The EA group showed significant improvements in FMA-UE scores and faster premotor reaction times compared to the control group. Altered anticipatory muscle activation indicated significant CReST facilitation. Functional connectivity analysis revealed enhanced activity in the contralesional sensorimotor network during the early phase of EA intervention. However, no significant effects of EA on muscle spasticity were observed.

CONCLUSION

Electroacupuncture applied at the 'Hegu' (LI4) and 'Quchi' (LI11) acupoints appears to facilitate motor recovery by enhancing CReST plasticity and activating the contralesional sensorimotor network (SMN), suggesting its potential as an adjunct to rehabilitation. Future studies should examine the long-term effects and explore its role in brain network reorganization.

Statement of Disclosures

None

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