E-Poster

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Efficacy of the Electro-Mollii Suit in Improving Postural Control and Balance in Pediatric Neurological Disorders: A Prospective Observational Study

Topic: Specific Target Groups (Children, Women, Elderly, Athletes, Musicians, Refugees, Ethnic Groups, Workers, and Others)

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BACKGROUND

Postural control and balance impairments are common features in pediatric neurological disorders, including chronic and degenerative ataxias and cerebral palsy (CP). Electrotherapy-based interventions have shown potential in reducing spasticity and improving motor function. The Electro-Mollii Suit is an innovative neuromodulation device designed to deliver low-level electrical stimulation to specific muscle groups, promoting flexibility and reducing spasticity through reciprocal inhibition. However, evidence regarding its efficacy in improving balance and postural control is limited.

This study aims to assess the short- and medium-term effects of the Electro-Mollii Suit on postural control and balance in pediatric patients with neurological gait and posture impairments.

METHODS

A prospective, non-randomized, controlled observational study is being conducted at the Neurorehabilitation and Adapted Sports Unit of Bambino Gesù Pediatric Hospital, Palidoro. The study includes patients aged 4–15 years with balance disorder and gait impairments due to chronic or degenerative ataxias and CP. Exclusion criteria include previous botulinum toxin treatment (within 12 weeks), implanted electromedical devices, or non-compliance.

Participants undergo a baseline assessment (T0), one-hour treatment with the Electro-Mollii Suit (T1), and follow-ups at four weeks (T2), 12 weeks (T3), and 24 weeks (T4). The intervention consists of wearing the suit for one hour every other day. Primary outcome measures include changes in the Seated Postural Control Measure (SPCM) and the Level of Sitting Scale (LSS). Secondary outcomes include assessments using the Gross Motor Function Classification System (GMFCS), postural stability via stabilometry, and ataxia severity via the Scale for the Assessment and Rating of Ataxia (SARA). The assessments are done by two physiatrists, a neuropsychiatrist, and a Neuro and Psychomotor Therapist of Developmental Age.

RESULTS

Preliminary results will provide insights into the effectiveness of the Electro-Mollii Suit in enhancing balance and postural control in pediatric patients with neurological conditions.

CONCLUSION

Findings from this study may support the integration of this technology into rehabilitation protocols, offering a novel therapeutic approach for children with motor disabilities.

Statement of Disclosures

None

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