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Safety and feasibility of transcutaneous electrical nerve stimulation in hemiplegic cerebral palsy

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Objective: The primary objective of this study was to identify the safety and feasibility of TENS combined with task oriented training (TOT) to improve upper limb function in children with HCP.

Design, Setting, Participants: A single-blind, multicenter, randomized placebo-controlled study included 45 HCP children, aged 6.2±1.9 years from PPG College of Physiotherapy, Coimbatore and K S Hegde Charitable Hospital, Mangalore during February 2014 to January 2015.

Interventions: Participants were randomly assigned to receive TENS, placebo-TENS and conventional physiotherapy (CPT). All Participants followed same task oriented training along with main intervention for 90 minutes per session for 3 days in a week for 8 weeks.

Outcome Measures: modified Tardieu scale (mTS), quality of upper extremity skill test (QUEST) and ABILHAND-Kids (ABK) questionnaire were measured before and after the treatment at end of first day, 4th and 8th week. Adverse reaction mentioned in activity log and parent rated feedback questionnaire also measured at end of 8th week.

Results: No adverse events were found and all participants were adhered treatment protocol very well. All the parents agreed (median score-4.6 in 5 point Likert's scale) to safety of the treatment protocols. The HCP children showed statistically significant difference ($p<0.05$) in elbow spasticity (Y) level in mTS and upper limb function in QUEST.

Conclusions: TENS appears to be safe, feasible and well tolerated in most children with hemiparesis. But need more detailed clinical research to explore the efficacy of TENS in upper limb rehabilitation in HCP subjects

Biography

Sathees Kumar Durairaj has completed his MPT from The Tamil Nadu Dr. MGR Medical University and is pursuing Doctoral Studies from Nitte University, Mangalore, India. He is the Associate Professor of PPG College of Physiotherapy, Coimbatore, India. He has published 2 papers in reputed journals.

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