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Role of Functional Electrical Stimulation in Getting Back To Feet In Spinal Cord Injury Patients With Foot Drop: A Review

Aman Kanda[1], Neha Kashyap[2], Manpreet Kaur[3], Priyanshi Sharma[4], Abhishek[5], Simran[6]

[1,4,5,6]UG Student, Banarsidas Chandiwala Institute of Physiotherapy, Kalkaji, New Delhi, [2]Assistant Professor, Department of Physiotherapy, Maharishi Markandeshwar Deemed to be University, Mullana, Ambala, [3]UG Student, Indian Spinal Injuries Centre and Institute of Rehabilitation Sciences, Vasant Kunj, New Delhi

Abstract

Introduction: Spinal cord injuries can intrude with the communication pathway between the brain and the body leading to a loss of control over the else functional neuromuscular system. It interrupts the relation between the brain and the region of spinal cord that produces walking, leading to palsy. Injury of the L5 root, lumbar plexus, sciatic nerve, common peroneal or deep peroneal nerve can possibly lead to foot drop due to weakness of anterior compartment musculature. The foot will remain flat on the ground and the individual won't be capable to dorsiflex the foot during heel strike. Functional Electrical Stimulation (FES) is a technique that uses electrical currents to stimulate nerves and in turn muscles producing functional movements. It delivers controlled electrical pulsations to target muscles, activating contractions and facilitating movements that might be challenging for the Spinal Cord Injury individuals. With this review we aim to emphasize the role of FES in early recovery of foot drop and assembling the morale of individuals towards a better quality of life.

Methodology: To construct a review on this topic, an extensive search on various databases was carried out including Ovid, Google Scholar, Medline, PubMed, ResearchGate and available textbooks. Studies done in last 15 years were included in the review.

Conclusion: FES is a key tool available to therapists working in field of neuro-rehabilitation as it produces largest improvement in motor function of individuals with SCI. It has been shown to have positive effects on walking velocity and stability as well as reducing the effort of walking and frequency of falls in patients.

Keywords: *Spinal Cord Injury, Functional Electrical Stimulations, Neurorehabilitation, Foot Drop, FES in foot rehabilitation.*