

THE EFFECTS OF ELECTRICAL STIMULATION ON URINARY INCONTINENCE IN WOMEN WITH MULTIPLE SCLEROSIS: A SYSTEMATIC REVIEW

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ABSTRACT

BACKGROUND AND SIGNIFICANCE: Multiple Sclerosis (MS) is an autoimmune disorder that causes inflammation and demyelination resulting in plaques and lesions of the central nervous system. Involvement of urinary system may occur resulting in urinary incontinence (UI) which is defined as a loss of urine that often impacts activities of daily living. Physical therapy treatment of UI includes education, exercise, and electrical stimulation. When used for treatment of UI, electrical stimulation of the pelvic floor musculature may improve strength and decrease reports of incontinence. The purpose of this study is to determine the effects of electrical stimulation on UI in women with Multiple Sclerosis.

METHODS: A search of PubMed and EMBASE with pertinent terms was completed on November 8, 2018. Inclusion criteria included women diagnosed with MS, urinary incontinence, electrical stimulation as a treatment, studies within the last 10 years, and written in English language.

RESULTS: A total of 113 articles were assessed and after having completed a title screen, duplicate screen, and abstract review, three articles remained for inclusion of this systematic review.

CONCLUSION: In all studies, electrical stimulation of the pelvic floor musculature demonstrated improved strength and function. Also, all of the studies revealed an improvement in quality of life.

Keywords: Multiple Sclerosis, Incontinence, Electrical Stimulation

INTRODUCTION

Multiple Sclerosis (MS) is a chronic, autoimmune, inflammatory, and demyelinating disease that causes lesions in the white matter of the central nervous system, and the cause of MS is unknown[1]. Up to 90% of people diagnosed with MS develop some form of dysfunction of the lower urinary tract due to changes in the connection between the brainstem and spinal cord [2]. The process of demyelination affects the lateral corticospinal tract and reticulospinal pathway which makes bladder dysfunction including urinary incontinence common. Urinary incontinence (UI) is defined by the International Continence Society as a “condition in which involuntary loss of urine is a social or hygienic problem and is objectively demonstrable” [3, p. 116]. It is classified as a substantial public health problem for which many people do not seek treatment due to embarrassment and the accompanying social stigma [3]. A conservative treatment options for UI includes pelvic floor muscle training (PFMT), commonly known as Kegel exercises. PFMT consists of active exercises that emphasize the voluntary contraction and control of the pelvic floor muscles. Neuromuscular electrical stimulation (NMES), a passive electrical stimulus that causes involuntary contraction of a muscle, may be effective in the treatment of the UI symptoms [3]. The purpose of this study is to determine if electrical stimulation shows greater improvements than traditional pelvic floor muscle training in the treatment of urinary incontinence in patients diagnosed with MS.

METHODS

An electronic search of the PubMed and Embase databases was conducted on November 8, 2018, using search terms related to multiple sclerosis, incontinence, and electrical stimulation. The terms were searched individually and then combined for the final search. The search was limited to articles involving human subject, written in the English language, and with dates ranging from 2008-2018. The electronic search resulted in 113 articles. A title screen resulted in 12 articles to be considered in the abstract screen. The articles were then screened for duplication between the databases which resulted in 10 articles. The abstracts were screened to ensure the articles met the inclusion/exclusion criteria. After the abstract screen, three articles