

Transcranial and Sacral Magnetic Stimulation as a Therapeutic Resource for Urinary Incontinence - A Brief Bibliographic Review

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Abstract : Transcranial magnetic stimulation (TMS) is a non-invasive neuromodulation technique for the investigation and modulation of cortical excitability in humans. The modulation of the processing of different cortical areas can result in several areas for rehabilitation, showing great potential in the treatment of motor disorders. In the human brain, the supplementary motor area (SMA) is involved in the control of the pelvic floor muscles (MAP), where dysfunctions of these muscles can lead to urinary incontinence. Peripheral magnetic stimulation, specifically sacral magnetic stimulation, has been used as a safe and effective treatment option for patients with lower urinary tract dysfunction. A systematic literature review was carried out (Pubmed, Medline and Google academic database) without a time limit using the keywords: "transcranial magnetic stimulation", "sacral neuromodulation", and "urinary incontinence", where 11 articles attended to the inclusion criteria. Results: Thirteen articles were selected. Magnetic stimulation is a non-invasive neuromodulation technique widely used in the evaluation of cortical areas and their respective peripheral areas, as well as in the treatment of lesions of brain origin. With regard to pelvic-perineal disorders, repetitive transcranial stimulation showed significant effects in controlling urinary incontinence, as well as sacral peripheral magnetic stimulation, in addition to exerting the potential to restore bladder sphincter function. Conclusion: Data from the literature suggest that both transcranial stimulation and peripheral stimulation are non-invasive references that can be promising and effective means of treatment in pelvic and perineal disorders. More prospective and randomized studies on a larger scale are needed, adapting the most appropriate and resolving parameters.

Keywords : urinary incontinence, non-invasive neuromodulation, sacral neuromodulation, transcranial magnetic stimulation.

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