

## TREATMENT STRATEGIES FOR BLADDER DYSFUNCTION IN PEOPLE WITH MULTIPLE SCLEROSIS - A SYSTEMATIC REVIEW.

### Hypothesis / aims of study

Lower urinary tract dysfunction affects at least 50% of people with multiple sclerosis (MS) within 3 to 5 years of diagnosis and has a significant negative impact on quality of life.<sup>1</sup> Three conservative modalities (pelvic floor muscle training, electromyography biofeedback and electrical stimulation) have been extensively reviewed in the non-neurogenic population;<sup>2</sup> however these modalities have not been critically reviewed in relation to people with MS. This review aimed to appraise the underlying evidence base for the effectiveness of these three modalities separately or in combination, in the treatment of urinary dysfunction associated with MS.

### Study design, materials and methods

The following databases were searched from 1960 to March 2007: Amed, Cinahl, Embase, Medline, Proquest, Pubmed and the Cochrane Central Registry for Controlled Trials. The following key words were combined with multiple sclerosis and incontinence: lower urinary tract, urgency, urge incontinence, detrusor over activity, detrusor sphincter dyssynergia, hesitancy, physiotherapy, pelvic floor muscle exercise, biofeedback, EMG biofeedback, electrical stimulation (non-implanted). All types of intervention studies in the English Language were included; studies did not have to be specific to people with MS; studies were excluded if they were only published as an abstract. Methodological quality was consistently scored on ten criteria using the tool described by Bergmans et al (2000).<sup>3</sup>

### Results

A total of 20 papers relating to MS and these modalities were identified. Sixteen of these were single group studies; four were randomised controlled trials. Some papers included people with MS within other neurological populations in their sample; two hundred and eight-one participants out of a total population of 693 participants had a definite diagnosis of MS. The number of participants within the studies ranged from 2 to 80. The four RCTs all recorded moderate scores (5.5-8.0), due mainly to a lack of stratification prior to randomisation and a failure to describe blinding. Only six of the sixteen single group studies scored between 5.0 and 6.0 with all recording less than 50 participants.

One RCT compared PFMT alone to a combination of modalities; two RCTs and one single group study reported on the combined use of pelvic floor muscle training and EMG biofeedback. Thirteen single group studies and one RCT reported on the use of electrical stimulation as a sole modality. Four studies reported on a combination of all modalities.

No data comparisons between studies could be made due to differing designs and outcome measures. The effectiveness of PFMT alone or combined with EMG biofeedback could not be established. Most studies using electrical stimulation as a sole treatment demonstrated an increase in maximum bladder capacity and decreased detrusor overactivity on urodynamic investigation; however there was only one RCT which did not report the results of participants with MS separately. Using a combination of all modalities two RCTs reported significant superior benefits in the treatment group in outcomes such as incontinence episodes and quality of life. There were no adverse incidents reported.

### Interpretation of results

The methodological quality of the studies was poor and adequately powered RCTs are needed. A combination of treatment modalities would appear to offer some reduction in symptom severity however the overall effectiveness, or the effectiveness of the individual modalities has not been established for people with MS.

### Concluding message

In view of the prevalence of lower urinary tract dysfunction within this population it is unfortunate that the published evidence base for effectiveness of these interventions is so poor. There is clearly a need for a well-designed, large-scale study using standardised definitions, recording details of the level of disability, severity and type of lower urinary tract dysfunction and quantitative and qualitative outcome measures.

### References

1. *Multiple Sclerosis* (2007) 13(1); 106-112
2. *Actas Urologicas Espanolas* (2006) 30(2); 110-22
3. *British Journal of Urology International* (2000) 85; 254-263

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