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INTRAVESICAL VANILLOIDS FOR TREATING NEUROGENIC LOWER URINARY TRACT DYSFUNCTION IN PATIENTS WITH MULTIPLE SCLEROSIS: A SYSTEMATIC REVIEW AND META-ANALYSIS.

Hypothesis / aims of study

To systematically assess all available evidence on efficacy and safety of vanilloids for treating neurogenic lower urinary tract dysfunction (NLUTD) in patients with multiple sclerosis (MS).

Study design, materials and methods

This systematic review was performed according to the Preferred Reporting Itemsfor Systematic Reviews and Meta-Analyses (PRISMA) statement. Studies were identified by electronic search of Cochrane register, Embase, Medline, Scopus, (last search 8 January 2016).

Results

After screening of 7846 abstracts, 4 randomized controlled trials (RCTs) and 3 prospective cohort studies were included. Pooled data from 3 RCTs evaluating intravesical capsaicin showed the standardized mean difference to be -2.16 (95% confidence interval (CI) -2.87 to -1.45) in incontinence episodes per 24 hours and -0.54 (95% CI -1.03 to -0.05) in voids per 24 hours. There was no statistically significant effect on maximum cystometric capacity and maximum storage detrusor pressure. Overall, adverse events were reported by >50% of the patients, most commonly were pelvic pain, facial flush, worsening of incontinence, autonomic dysreflexia, urinary tract infection and haematuria. Risk of bias and confounding was relevant in both RCTs and non-RCTs.

Interpretation of results

Intravesical vanilloids are not widely used due to initial side effects caused by the solvent (ethanol 30%). Currently, intravesical vanilloids are not licenced and they are not used in daily clinical practice for treating refractory NLUTD. Nevertheless, since vanilloids preserve detrusor contractility and have no significant effect on detrusor pressure, they could be applied either in patients with spontaneous and reflex voiding or those using intermittent selfcatheterization. However, the effect on preservation of renal function in patients with high detrusor pressures is not guaranteed.

Intradetrusor onabotulinumtoxinA injections are not a panacea and about 40% of the patients with NDO will discontinue treatment over time due to a lack of clinical and/or urodynamic efficacy or switch to another treatment, so that alternative treatment options are urgently needed. Indeed, vanilloids might become a promising therapeutic alternative but not in its current form because of the unfavourable safety profile. However, the development of other solvents with improved tolerance would dramatically expand the use of vanilloids. Our findings indicate that further research including the development of clinically applicable substances and well-designed, adequately sampled and properly powered RCTs are necessary and highly warranted to assess validated disease- and condition-specific quality of life data, urodynamic findings, as well as long-term outcomes and tolerance of vanilloids.

Concluding message

Preliminary data suggest that intravesical vanilloids might be effective for treating NLUTD in patients with MS. However, the safety profile seems unfavourable, the overall quality of evidence is low and no licensed substance is currently available warranting well-designed, adequately sampled and properly powered RCTs.

Figure 1. PRISMA flow diagram

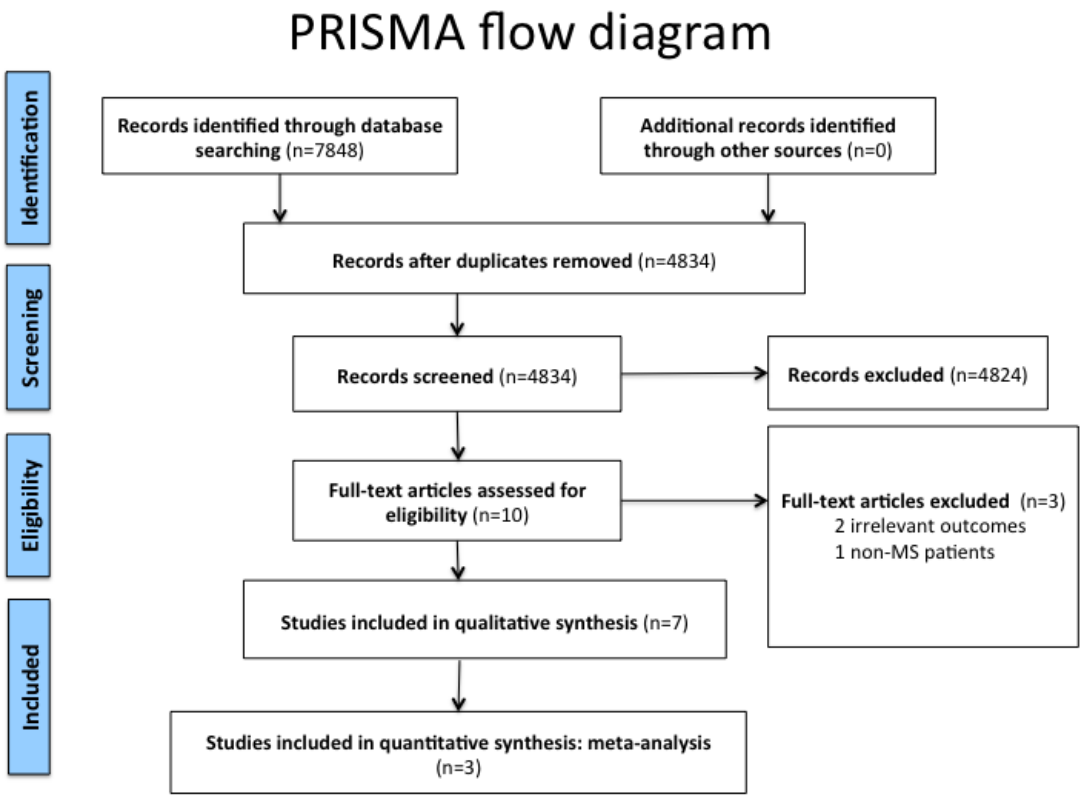
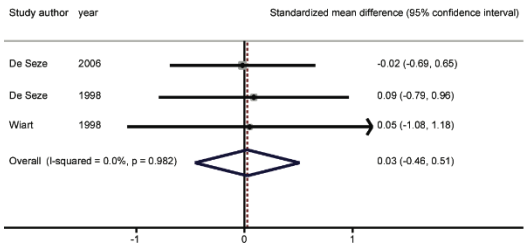
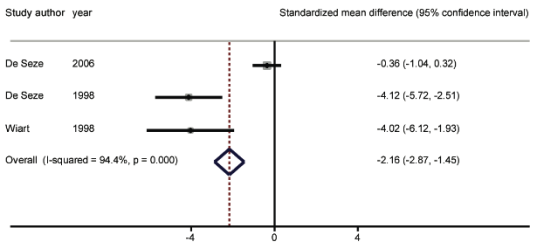


Figure 2. Efficacy of intravesical capsaicin treatment

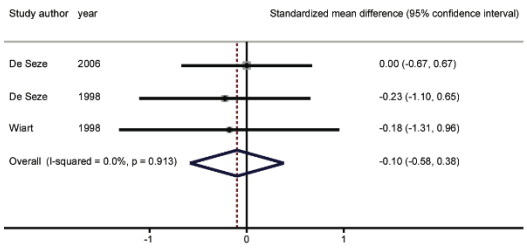
A Maximum cystometric capacity (mL)



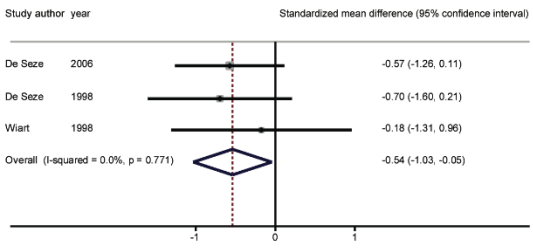
B Leakages per 24 hours



C Maximum storage detrusor pressure (cmH2O)



D Voids per 24 hours



Disclosures
Funding: none **Clinical Trial:** No **Subjects:** NONE