Neuromodulation for overactive bladder syndrome in adults with Parkinson's disease: a systematic review of the literature

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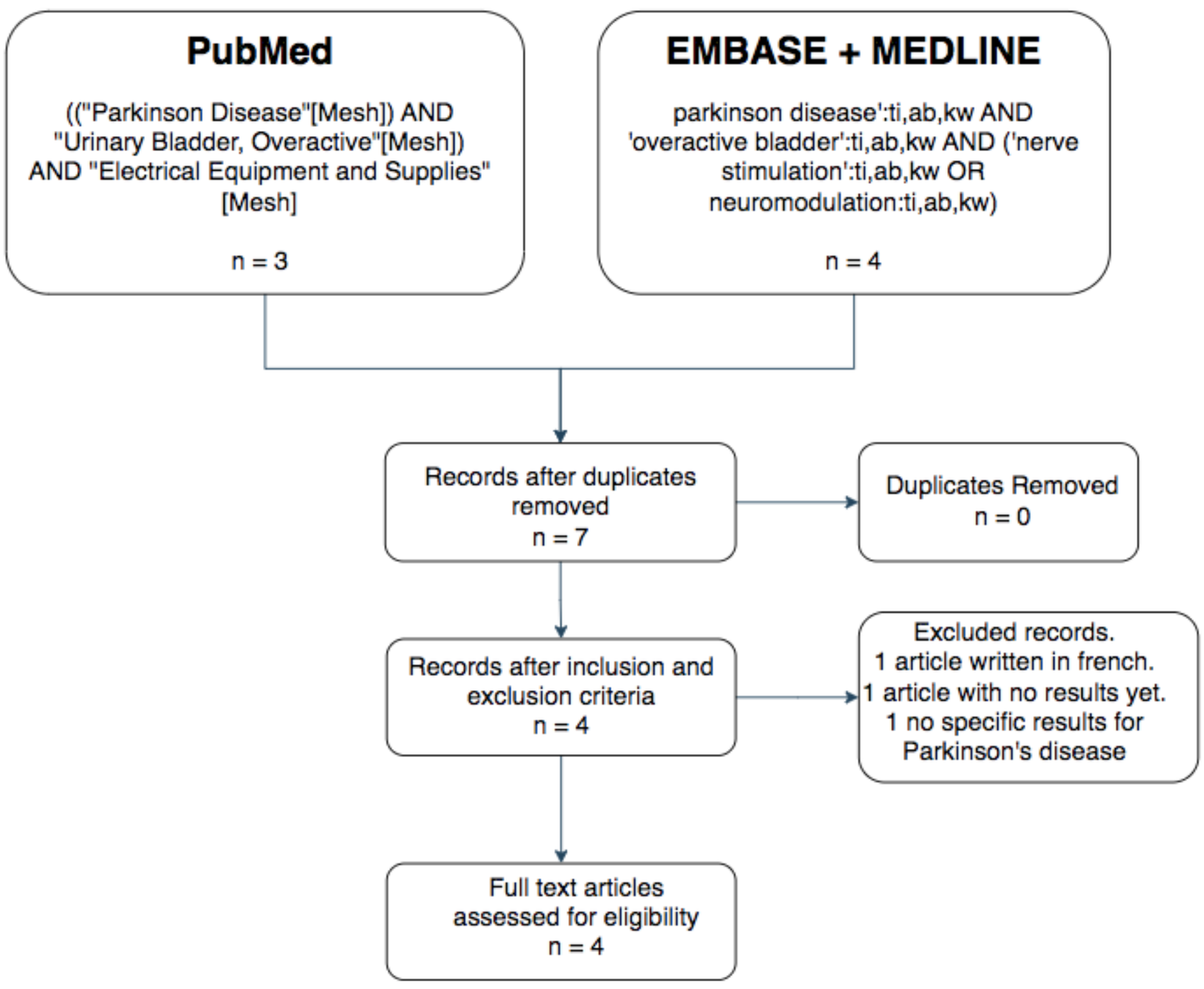
AIMS OF STUDY

To perform a systematic review of the literature that summarizes the available information about neuromodulation in the management of overactive bladder (OAB) syndrome in patients with Parkinson's disease (PD).

STUDY DESIGN, MATERIALS AND METHODS

A systematic review of the literature was carried out in the Embase, Medline and PubMed databases. Articles in English were included. The selected study population was adults with Parkinson's disease and overactive bladder syndrome who underwent neuromodulation or deep brain stimulation therapy in any of its modalities. Animal studies, ongoing studies with results not yet available, multiple simultaneous interventions and unclear outcomes or interventions were excluded.

RESULTS



NEUROMODULATION MODALITIES

Deep brain stimulation (DBS): was shown to improve urinary storage symptoms in advanced PD patients by reducing the score of questions 5-8 on the DanPSS score (P= 0.005), also, the number of patients with some degree of troublesome urinary symptoms decreased after the intervention. DBS in the subthalamic nucleus showed better improvement of IPSS score, nocturnal frequency and severity of symptoms when compared to DBS in globus pallidus internus and ventral intermediate nucleus.

Sacral neuromodulation (SNM): 60% of the patients improved their urinary symptoms. Statistically significant decrease in daily frequency and nocturia during trial period (P= .001 and P= .012, respectively). Women have a better success rate than men. Urodynamic evidence of obstruction may be a predictor of treatment failure.

Tibial nerve stimulation (TNS): Showed significant reduction in episodes of urgency over a 3-day period (P < .04) and reduction in nocturia episodes. Statistically significant differences in the cystometric volume when subjects reported a strong desire to void (P < .05).

MAIN OUTCOMES

Neuromodulation modalities and deep brain stimulation have been shown to be safe and effective treatment option in the management of OAB syndrome in patients with PD. They significantly decrease predominantly storage symptoms, evident in the IPSS score, improve OAB-V8 and ICIQ-SF scores after treatment, and reduce the number of total nocturia episodes.

CONCLUDING MESSAGE

The evidence available to date on neuromodulation and deep brain stimulation in the management of OAB symptoms in patients with PD is encouraging. Neuromodulation and DBS have been shown to improve urinary symptoms in these patients, and to be a safe treatment option. More research is still needed regarding these outcomes in diverse populations to allow for proper phenotyping of the ideal candidate and adequate pretreatment assessment to allow for comparison and measurement of treatment effect.

References

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