This search summary contains the results of a literature search undertaken by the Lincolnshire Knowledge and Resource Service librarians in;

June 2014

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If you would like this search re-run with a different focus, or updated to accommodate papers published since the search was completed, please let us know. This literature searching service is available to support public health / health and social care commissioning in Lincolnshire.

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Neil Gaiman
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Please find below the results of your literature search request. If you would like the full text of any of the abstracts included, or would like a further search completed on this topic, please let us know.

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Literature Search Results

Search request date: 5th June 2014
Search completion date: 5th June 2014
Search completed by: Jan Badcock

Enquiry Details

IFR- The effectiveness of sacral neuromodulation in patients with Fowler’s syndrome.

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Full Text Papers

Links are given to full text resources where available. For some of the papers, you will need a free NHS & Social Care Athens Account.

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Click on the Search button (illustrated with binoculars). This will open up a search window. Type in the term you need to find and links to all of the references to that term within the document will be displayed in the window. You can jump to each reference by clicking it. You can search for more terms by pressing ‘search again’.

**Word documents**
Select Edit from the menu, the Find and type in your term in the search box which is presented. The search function will locate the first use of the term in the document. By pressing ‘next’ you will jump to further references.
Sacral neuromodulation for urinary retention

Urinary retention without an identifiable urological cause presents a diagnostic and therapeutic challenge. Patients with nonobstructive chronic urinary retention usually have to rely on intermittent self-catheterization or indwelling suprapubic or transurethral catheters, which significantly affect quality of life. For some patients, however, sacral neuromodulation (SNM) offers an effective therapeutic alternative, and women with primary disorder of urethral sphincter relaxation (Fowler’s syndrome) seem to respond particularly well to this treatment. Although the mechanism of action of SNM is not well understood and requires further investigation, it seems to involve afferent mediation of spinal cord reflexes and brain networks. The evolution of SNM devices and improvements in surgical and testing techniques, especially the introduction of the two-stage tined lead procedure, have considerably reduced the failure, adverse event and surgical revision rates associated with SNM, ensuring that this modality is an effective minimally invasive treatment for urinary retention.

Other Research

A functional magnetic resonance imaging study of the effect of sacral neuromodulation on brain responses in women with Fowler’s syndrome.

Study type: Aetiology (case series).
LEVEL OF EVIDENCE: 4.
Objective: To examine brain responses to bladder filling in young women with Fowler’s syndrome (FS, a sphincter abnormality manifested by impaired voiding and bladder sensation), treated with sacral neuromodulation (SNM).
Results: At baseline with an empty bladder, extensive responses (contrast = infusion-withdrawal) were almost exclusively negative (‘deactivations’), e.g. in the right insula, seat of visceral sensation. Increased bladder volume and/or SNM treatment reduced deactivations and strengthened normal (positive) responses, e.g. in the periaqueductal grey (PAG) terminus of ascending spinal afferents. At baseline, there was significant correlation of brain responses with maximum urethral closure pressure.
Conclusion: These data show that brain responses to bladder filling are abnormal in FS. The explanation for this that best explains the evidence is that the primary abnormality is an overactive urethra that generates abnormally strong inhibitory afferent signals, so effectively blocking bladder afferent activity at the sacral level and deactivating the PAG and higher centres, with consequent loss of bladder sensation and ability to void. Apparently, a normal mechanism for suppression of incontinence involving the striated urethral sphincter becomes exaggerated in FS and prevents voiding. SNM seems to act at the sacral level, by blocking inhibition by urethral afferents.
The presence of Fowler’s syndrome predicts successful long-term outcome of sacral nerve stimulation in women with urinary retention.

**Objectives:** Sacral nerve stimulation (SNS) is an effective treatment for women with urinary retention. Some women present specific electromyography abnormalities of the external urethral sphincter (Fowler’s syndrome). The aim of this study was to evaluate whether Fowler’s syndrome and psychologic preimplant screening could be predictive factors for long-term success of SNS in women with urinary retention.

**Methods:** All patients underwent electrophysiologic and urodynamic studies and voiding charts. A validated psychologic screening questionnaire was used. Women with successful temporary stimulation, received a definitive implant (Interstim Medtronic). They were followed prospectively every 6 months. Failure was defined as recurrent retention needing intermittent or permanent catheterisation.

**Results:** Sixty-two women were implanted, 30 with Fowler’s syndrome, 32 with idiopathic retention. In those with Fowler’s syndrome, 26.6% screened positive for somatisation, as did 43.8% in the idiopathic group (not significant [ns]). Screening for depression was positive in 30% and 18.8%, respectively (ns). There was no correlation with outcome. Twenty-eight patients failed: 9 with Fowler’s syndromes, 19 without (p=0.04). Kaplan-Meier analysis showed that patients with Fowler’s syndrome benefitted significantly longer from SNS (log-rank test, p=0.005).

**Conclusions:** The presence of Fowler’s syndrome is a positive predictive factor for SNS in female urinary retention. Idiopathic urinary retention patients can benefit as well, but the success might be less predictable. Preimplant psychologic screening, using the Patient Health Questionnaire, does not correlate with long-term outcome of SNS in this population.