

Electrical Stimulation

Stimulation of the afferent limb of the pudendal reflex arc results in reflex inhibition of detrusor contractibility and also increases pelvic floor contractibility. Short periods of stimulation, for example 30 minutes per day for several weeks, will give good results. Intra-vaginal or intra-anal electrodes are used by the patient at home. This therapy may benefit those who have failed other treatment regimes.

Tibial Nerve Stimulator (PC:CystoMedix, Inc)

Access to the sacral nerve junction is gained via a nerve bundle near the ankle. A 30-minute treatment session is conducted once per week for a period of 6-12 weeks. Indications for use are in urge incontinence, urgency, frequency, non-obstructive retention and pelvic pain.

Biofeedback

This is based on a specific form of learning and re-educating with the patient in a closed feedback loop. Although often successful in less severe cases, this technique requires considerable patient motivation and is time-consuming and labor intensive. It is therefore infrequently used.

Acupuncture

This may be of benefit by increasing enkephalin in cerebrospinal fluid thus inhibiting detrusor contractibility. Early results are encouraging but subsequent relapse is common.

Cystodistention

Cystodistention involves the slow hydrostatic dilation of the bladder under epidural anaesthesia. The method is particularly useful in patients with low bladder compliance. Approximately 75% of patients benefit from this therapy, although the improvement is often not long-lasting and the procedure may need to be repeated.

Summary

Detrusor overactivity is a common cause of lower urinary tract symptoms and incontinence. It can only be definitively diagnosed by urodynamic assessment. Most sufferers can have their symptoms significantly improved. We would initially recommend treatment with bladder retraining combined with pharmacotherapy such as Oxybutynin, a combination of Probanthine and Imipramine or Tolterodine. Failing drug therapy, cystodistention or electrical stimulation is recommended.

Further Educational Guides available include:

Understanding Urinary Incontinence

Understanding Pelvic Floor Exercises

Understanding Bladder Retraining

Understanding and Treatment of Prolapse

These are also available from our website
www.urodynamic.com.au

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A guide to understanding
and treatment of

DETRUSOR OVERACTIVITY in women

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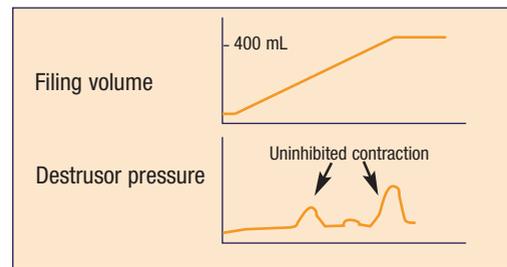
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Overactive Bladder Syndrome

Urgency with or without urge incontinence, usually with frequency and nocturia, can be described as the overactive bladder syndrome, urge syndrome or urgency-frequency syndrome. These symptoms are suggestive of urodynamically demonstrable detrusor overactivity but can be due to other forms of urethro-vesical dysfunction. These terms can be used if there is no proven infection or other obvious pathology. Normal detrusor function allows bladder filling with little or no change in pressure. No involuntary phasic contractions occur despite provocation. **Detrusor overactivity** is a urodynamic observation characterised by involuntary detrusor contractions during the filling phase of cystometry, which may be spontaneous or provoked. Although cure of detrusor overactivity is not possible, most women with this condition can have their symptoms significantly improved.



Prevalence

The prevalence of detrusor overactivity in the general population is approximately 10% however this approaches 40% in women attending a urodynamic clinic. It is the second most common cause of urinary incontinence during the reproductive years. The incidence rises with age and it is the commonest cause of incontinence in the elderly. Detrusor overactivity may also co-exist with urodynamic stress incontinence.

Symptoms

Typical symptoms may include urgency, urge incontinence, frequency (voiding more than seven times per day), nocturia (voiding twice or more at night), nocturnal enuresis and incontinence without warning. Although frequency and urgency are present in 80% of women with detrusor overactivity, there are many other causes of these symptoms. An accurate diagnosis cannot be made from the symptoms alone.

Signs

There are no distinctive clinical signs and clinical examination is usually not helpful in the diagnosis. However, a clinical examination must be performed in the work-up of the patient to exclude other causes of the patient's symptoms. Vulval excoriation, atrophy and the presence of stress incontinence should be assessed.

Aetiology

The cause in the majority of women is unknown. The overactive bladder syndrome is common in identical twins of women who have the condition, making a genetic predisposition very likely. Childhood bedwetting is also more common in women with the syndrome, again pointing to a congenital problem. Neuropathy and bladder outflow obstruction account for a small group. The term neurogenic detrusor overactivity is used for uninhibited detrusor activity where there is demonstrable neurological disease. Abnormal neurotransmitter function, urethral, and psychological factors have also been postulated as possible aetiological factors. Detrusor overactivity may occasionally arise following bladder neck or sling surgery.

Diagnosis

The diagnosis of detrusor overactivity can only be made by subtracted, provocative cystometry. The presence of systolic or provoked detrusor contractions during the filling phase, while the subject is attempting to inhibit micturition, is diagnostic. The diagnosis of detrusor overactivity involves the use of catheters for bladder pressure determination with computer assisted data assessment. Urinary infection should be excluded prior to investigation and a 'urinary diary' can be helpful in the diagnostic work-up.

Treatment

Many different treatment methods have been tried. Current management is most often centred around bladder retraining with the addition of pharmacotherapy in many cases. Other non-surgical therapies include electrical stimulation, biofeedback, acupuncture and hypnotherapy.

Bladder Retraining

This technique is based on the assumption that conscious efforts to suppress sensory stimuli will re-establish cortical control over detrusor overactivity, thus leading to a normal voiding pattern. The method involves a program of scheduled voiding with progressive increases in the interval between each void. Success rates of 80% can be expected with good patient motivation and medical or nursing support. Relapse may occur. This method is recommended in all patients as it is cheap and has minimal side effects. Sydney Urodynamic Centres have an educational pamphlet on bladder retraining which can be obtained by telephone, or can be downloaded from the internet.

Oxybutynin (Ditropan)

This is probably the most effective drug available giving both symptomatic and cystometric improvement. Oxybutynin is a tertiary amine and acts as a direct smooth muscle relaxant. An initial dose of 2.5mg two or three times a day is recommended and can slowly be increased to 5-10mg three times a day if required. The patient can adjust the dosage herself, based on achieving a balance between symptom relief and side effects. These are common as it has anti-cholinergic properties and include dry mouth, palpitations, a slight tremor, constipation and visual disturbances. None of these side effects are dangerous and often get less noticeable with time. As the drug has a short half-life, it can be taken prophylactically to control symptoms for short periods, such as while shopping, rather than taken continuously. Oxybutynin may be contraindicated in patients with narrow angle glaucoma. Oxybutynin is also available as a long acting dermal patch (Oxytrol 3.9mg each day applied twice weekly), which eliminates some of the side effects of the drug.

Propanthelene (Probanthine)

This anti-cholinergic agent is cheap, has moderate efficacy and relatively mild side effects (dry mouth, blurred vision and constipation). Given before meals in doses of 15-60mg four times a day, the dose should be gradually increased to the maximum, or until there is relief of symptoms or side effects are intolerable. It is especially useful for the treatment of urinary frequency.

Imipramine (Tofranil)

This agent is particularly useful for the treatment of nocturia and nocturnal enuresis. It is a tricyclic anti-depressant with a complex pharmacological action. It has anti-cholinergic anti-histamine, sedative and local anaesthetic effects. Imipramine acts synergistically with Probanthine. Recommended doses are 25-150mg at night. It may also be helpful for coital incontinence. Side effects are anti-cholinergic (dry mouth, blurred vision and constipation) as well as tremor and fatigue. In women with cardiac morbidity, Imipramine is best avoided.

DDAVP (Minirin)

This is a synthetic vasopressin with anti-diuretic properties. Administered as a nasal spray at night (20-40mg), or more recently in tablet form, it decreases urine production by up to 50%. DDAVP is particularly helpful for severe nocturia or bedwetting and is safe for long term use. It may alter serum electrolytes which should be monitored initially, especially in women with renal or cardiac morbidity.

Tolterodine Tartrate

Tolterodine tartrate (trade name Detrusitol) is a non-selective muscarinic agent that acts on all muscarinic receptor subtypes. It is given in a dosage of 1 to 2mg two to three times a day. Its efficacy is similar to Oxybutynin, however it has fewer systemic side effects, especially a dry mouth. The drug is available by private prescription in Australia.

Solifenacin Succinate

Solifenacin succinate, (trade name Vesicare) is a competitive inhibitor of the muscarinic M3 subtype receptor. It also has antagonistic activity to muscarinic receptors. It is indicated in symptomatic treatment of urge incontinence and or increased urinary frequency and urgency in patients with detrusor overactivity. It is available on private prescription.

Trospium Chloride

Trospium chloride (trade name Sanctura) is an anti-cholinergic drug which is useful in overactive detrusor symptoms such as frequency, urgency and urge incontinence. It shares similar side effects to other anti-cholinergic medications. This drug is also available in New Zealand and can be purchased for use in Australia.

Botox (Botulinum Toxin)

Injections into bladder have been recently advocated and may have benefit in some selected patients.