

OVERACTIVE BLADDER AND URINARY INCONTINENCE

This article looks at overactive bladder, which can result in embarrassing symptoms for many people. Although not life-threatening, it can have a significant impact on the physical, social and psychological well-being of individuals. Healthcare workers can make a crucial difference to the lives of these individuals and need to ensure that they keep their practice up to date.

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Overactive bladder (OAB) is a common condition affecting around 11% of women and 9% of men in the UK (Roe and Doll, 2000; Milsom et al, 2006). Although OAB can occur at any age, a higher prevalence is seen in older and female populations. Approximately one-third of people with OAB also report incontinence problems (Milsom et al, 2006).

The impact of OAB on quality of life can be considerable and it is still under-reported, with a recent study showing that only 40–45% of older people with continence problems access services (Stoddart et al, 2001). Research suggests that men are less likely to seek help for OAB than women (Irwin, 2005). However, regardless of gender OAB has been shown to have a significant effect on the emotional and social functioning of men and women (Irwin, 2006).

There are relatively few studies considering the cost

impact of OAB, however, it has been estimated that in 1998 incontinence cost the NHS over £300m (The Continence Foundation, 2000). A recent article by Reeves et al (2006) considered the current and future cost burden of OAB in five European countries and concluded that the largest expense was the use of incontinence pads, which accounted for 63% of the annual per patient cost.

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DEFINITION

OAB is described by the International Continence Society (ICS) as urgency (a sudden compelling desire to void) with or without urge incontinence. It is usually accompanied by frequency (more than eight voids per 24 hours) and nocturia. There will also be an absence of proven infection or other pathology (Abrams et al, 2003) (*Table 1*).

The majority of patients presenting with OAB will be

idiopathic as no objective cause of their condition will be apparent.

DIAGNOSIS

Recently, emphasis has moved from the medical consequences of OAB and urgency incontinence towards the social and economic implications and the associated social, psychological, occupational, physical and sexual problems.

Quality of life scores can be used to evaluate treatment therapies and can be useful in providing a measure of the impact of urinary symptoms. Patients with OAB score their quality of life in terms of physical and social functioning, vitality, and role limitations significantly lower than people without OAB. There are a number of quality of life scores available and the NICE (2006) guidelines recommend the use of several incontinence-specific scales when evaluating therapies, including the International Consultation on Incontinence Modular Questionnaire (Abrams et al, 2006).

At the initial assessment patients' symptoms should be categorised as stress incontinence, mixed

incontinence or urge incontinence/OAB and treatment commenced on that basis. Assessment should aim to identify relevant predisposing and precipitating factors that require further referral or investigation.

Diagnosis of OAB is based on the appropriate assessment of the patient and should include:

- ▶▶ History: identify factors that may require referral (National Institute for Health and Clinical Excellence [NICE], 2005)
- ▶▶ A bladder diary: this should be kept by the patient for at least three days (covering variations in usual activity such as work and leisure)
- ▶▶ A complete review of current medication: this can exclude medicine-related urinary incontinence
- ▶▶ A general assessment of the patient: consider factors such as obesity, poor mobility/dexterity
- ▶▶ Urine dipstick test: detects blood, glucose, protein, leucocytes and nitrites to exclude other urinary tract infection and possible underlying pathology
- ▶▶ Measurement of post-void residual urine (using a bladder scan where possible [NICE, 2006]): this should be carried out on any patient with symptoms suggestive of voiding dysfunction such as reduced flow rate and recurrent urinary tract infection. Repeated post-void residual urine of greater than 100ml is suggestive of abnormal bladder emptying and may indicate underlying pathophysiology. The inability of the bladder to empty completely causes

Table 1

Definition of overactive bladder symptoms (Chapple, 2006)

Urgency: a sudden compelling desire to pass urine, which is difficult to defer

Urgency incontinence: involuntary leakage of urine accompanied or immediately preceded by urgency

Frequency: the need to void eight or more times per day. Frequency usually accompanies urgency with or without incontinence. Some patients demonstrate defensive voiding, a term that describes frequent voiding in order to avoid other symptoms such as stress incontinence

Nocturia: the need to void at night. Nocturia usually accompanies urgency and the person wakes at night one or more times. This can be caused by producing too much urine at night (polyuria), the bladder being unable to hold enough urine at night or a low bladder capacity (this differs from nocturnal enuresis which is defined as the involuntary loss of urine during sleep)

the bladder to reach capacity quickly, leading to symptoms of frequency and urgency

- ▶▶ Physical examination: focusing on identifying medical conditions that may precipitate incontinence, including neurological disorders, and should include pelvic and rectal examinations.

If the initial evaluation is inconclusive or the findings are abnormal, urodynamic tests may be required. Urodynamic cystometry measures the bladder's pressure/volume correlation and enables classification of detrusor contractions as normal, hypo-reflexic (weakened) or hyper-reflexic (exaggerated). However, conservative treatments can be initiated without undertaking urodynamics (NICE, 2006).

TREATMENT

Conservative

Conservative non-surgical treatment is the mainstay of therapy for OAB and available options include bladder retraining, fluid modifications, biofeedback, medication or a combination of these options. Patients should be made fully aware of all treatment options to enable them to make an

informed choice about which one is most appropriate for them.

It should be recognised that not all patients wish to pursue active treatment interventions for OAB (Table 2). For those with incontinence, absorbent products (washable or disposable) and toileting aids can be an alternative management option. These products should also be considered as a coping strategy pending ongoing treatment or as an adjunct to therapy.

Pharmacological options

When behavioural methods alone are unsuccessful, medications can be added to the treatment programme. There is evidence that the use of medication in bladder training can reduce frequency, but studies have demonstrated no improvement to incontinence episodes (Jarvis, 1981; Fantl et al, 1991).

The principal pharmacological treatments to improve the symptoms of OAB are based on muscarinic receptor antagonism (antimuscarinics). Antimuscarinic medications (also known as anticholinergics) are the most commonly used drugs for treating OAB (Table 3).

Table 2

Conservative treatments for overactive bladder

Bladder retraining	This involves teaching a patient how to control the sensations of urgency using a schedule of voluntary voiding combined with suppressing the urge to void and should be continued for a minimum of 6 weeks as a first-line treatment. With bladder retraining around 50% of patients experience a reduction in symptoms but few will experience a full resolution and many will relapse after initial success (Fantl, 1998)
Fluid modifications	Patients with urinary incontinence often limit their fluid intake in the belief that this will reduce their incontinence episodes. Although reducing fluid intake will reduce the volume of urine produced, the urine will be more concentrated and therefore irritate the bladder lining. Potential side-effects of reducing fluid intake include dehydration, constipation and infection. Patients with OAB should be advised to try and eliminate drinks that have an irritant or diuretic effect such as coffee, tea and alcohol and to modify high or low fluid intake (NICE, 2006)
Biofeedback	The aim of biofeedback is to teach patients responses to improve bladder control by providing information (visual, oral or tactile) about the physiologic activity of their bladder. There is little evidence for the effectiveness of biofeedback, however it is felt that biofeedback may assist with patients' motivation (NICE, 2006)

The side-effects of antimuscarinic medication are due to inhibition of muscarinic receptors in organs other than the bladder and include:

- ▶▶ Dry mouth
- ▶▶ Constipation
- ▶▶ Blurred vision
- ▶▶ Tachycardia/palpitations
- ▶▶ Cognitive dysfunction.

Antimuscarinics should be used with caution in the elderly and those with autonomic neuropathy, hiatus hernia, reflux oesophagitis, hepatic impairment (avoid propiverine) and renal impairment (British Medical Association and Royal Pharmaceutical Society of Great Britain [BMA/RPSGB], 2006). Antimuscarinic drugs are contraindicated in patients with narrow angle glaucoma, significant bladder outflow obstruction or urinary retention, severe ulcerative colitis, and gastrointestinal obstruction (BMA/RPSGB, 2006).

As many drugs have antimuscarinic side-effects, concomitant use of two or more such drugs can

increase side-effects and lead to confusion in the elderly.

The NICE guidelines (NICE, 2006) recommend that immediate

release non-proprietary oxybutinin should be offered as a first-line medication treatment for OAB. The recommendation was based on a lack of clinically important evidence of difference in efficacy between the antimuscarinic medications. Non-proprietary oxybutinin was found to be the most cost-effective. However, the guidelines development group recognised that antimuscarinic side-effects are common and that early treatment review is good practice (NICE, 2006).

To improve concordance, patients should be counselled regarding possible side-effects and healthcare professionals should consider changing their medications if side-effects become excessively troublesome.

Table 3

Medication used in overactive bladder

Drug	Indications	Preparation
Oxybutynin hydrochloride	Urinary frequency and incontinence	Oxybutynin (non-proprietary): tablet
	Neurogenic bladder instability and nocturnal enuresis	Ditropan: tablets or elixir
	Symptomatic treatment of urge incontinence and/or increased urinary frequency associated with urgency in patients with unstable bladder	Lyrinel XL: modified release capsule
	Symptomatic treatment of urge incontinence and/or increased urinary frequency and urgency in patients with unstable bladder	Kentera patches: transdermal preparations
Propiverine hydrochloride	Urinary frequency and incontinence; neurogenic bladder instability	Detrunorm: tablet
Solifenacin succinate	Urinary frequency, urgency and urge incontinence	Vesicare: tablet
Tolteradine tartrate	Urinary frequency, urgency and incontinence	Detrusitol: tablet Detrusitol XL: modified release capsule
Darifenacin	Urinary frequency, urgency and incontinence	Emselex: tablet
Tropium chloride	Urinary frequency, urgency and incontinence	Regurin: tablet

When choosing an antimuscarinic medication, healthcare workers should consider their ability to cross the blood/brain barrier and the possible central nervous system side-effects such as restlessness and disorientation. This information can be found in the product literature and the *British National Formulary* (BMA/RPSGB, 2007). It is important to consider the flexibility of dosing regime, which may make some preparations more suitable for different patients. Patients should be routinely provided with information on unwanted effects, risks and benefits of any medicine they are prescribed in order that they can make an informed choice.

Extended-release medication

Extended-release antimuscarinic formulations (Lyrinel XL and Detrusitol XL) have been shown to improve side-effects without a loss of efficacy and can be useful alternatives for individuals where polypharmacy is an issue. Patients taking immediate-release oxybutinin can be transferred to the nearest equivalent daily dose of extended-release oxybutinin (Lyrinel XL).

Transdermal oxybutinin (Kentera) delivers 3.9mg/day of oxybutinin over a 3–4 day period after application to the skin. Transdermal or patch delivery systems administer drug molecules continuously via the skin to the circulatory system. This can allow patients to control the drug delivery.

CONCLUSION

OAB and urinary incontinence is an embarrassing problem for many people. Although not

life-threatening, it can have a significant impact on the physical, social, psychological and financial well-being of individuals. Many may be too embarrassed to seek professional help and believe it is a normal consequence of ageing. Healthcare workers need to ensure that they are proactive in identifying patients and keeping their practice, including their knowledge of the medicines they may be involved in prescribing, up to date and competent. **CE**

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Key Points

- » Although not life-threatening, overactive bladder (OAB) can have a significant impact on the physical, social, psychological and financial well-being of individuals.
- » Many may be too embarrassed to seek professional help and believe OAB is a normal consequence of ageing.
- » Although OAB can occur at any age a higher prevalence is seen in older and female populations.
- » Nurses are at the centre of care for these individuals and need to ensure that they are proactive in keeping their practice up to date and competent.

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