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Overactive Bladder

This PatientPlus article is written for healthcare professionals so the language may be more technical than the [condition leaflets](#). You may find the [abbreviations list](#) helpful.

Synonym: detrusor instability

See also separate articles [Urinary Incontinence](#) and [Voiding Difficulties](#).

Overactive bladder (OAB) syndrome is characterised by urgency, often with frequency and nocturia and sometimes leakage (urge incontinence). It is often but not always associated with detrusor muscle overactivity. It can be idiopathic or [neurogenic](#).^[1] Strictly speaking, the term overactive bladder should be confined to cases where the condition is secondary to a known cause, whilst overactive bladder syndrome should be used in cases which are idiopathic. In practice the term is often used interchangeably. OAB can have a significant impact on quality of life.^[2]

Epidemiology

- OAB is the second most common cause of female urinary incontinence (stress incontinence is the most common).
- The prevalence of OAB increases with age.^[3]
- OAB may be associated with Parkinson's disease, spinal cord injury, diabetic neuropathy, multiple sclerosis, dementia or stroke; however, most cases have no specific cause.
- In men, urge incontinence may be due to neurological disease or an enlarged prostate (benign prostatic hypertrophy or prostate cancer).

Presentation

It usually presents with a sudden urge to urinate that is very difficult to delay and may be associated with leakage. Other features include:

- Frequency of micturition.
- Nocturia.
- Abdominal discomfort.
- Urge incontinence (more common in women).^[1]

There are no specific physical signs and the diagnosis is usually made from the symptoms and confirmed with [urodynamic studies](#).

Differential diagnosis

- [Stress incontinence](#)
- Functional incontinence
- Overflow incontinence

- Urinary fistula
- Enuresis
- Urinary tract infection
- Diabetes
- Bladder cancer
- Bladder stones

Investigations

- Urine dipstick analysis and midstream urine specimen should be sent to the laboratory in order to rule out urinary tract infection.
- Investigations to consider differential diagnosis - eg, blood tests for renal function, electrolytes, calcium, fasting glucose.
- Urodynamic studies show involuntary contraction of the bladder during filling.
- Depending on the presentation, ultrasound of the renal tract and cystoscopy may be required.

Management^[4]

Initial management in primary care

The following may be helpful, both for men and for women:

- **Lifestyle changes:**^[5]
 - Trial of reduction in caffeine intake.
 - Modification of high or low fluid intake. Some patients may cut back on the amount that they drink so that the bladder does not fill so quickly.
 - However, this can make symptoms worse, as the urine becomes more concentrated, which may irritate the bladder muscle. Patients should aim to drink normal quantities of fluid per day (about two litres.)
 - If **body mass index** is over 30, advise the patient to lose weight.
- **Bladder training:**^[6]
 - This is first-line treatment and should be for a minimum of six weeks.
 - It typically involves pelvic muscle training, scheduled voiding intervals with stepped increases and suppression of urge with distraction or relaxation techniques.^[7]
- **Drug treatment:**
 - Anticholinergic drugs: anticholinergics (antimuscarinic drugs) - eg, oxybutynin, propiverine, tolterodine, darifenacin, solifenacin, fesoterodine, trospium chloride - have a direct relaxant effect on urinary smooth muscle. They reduce involuntary detrusor contractions and increase bladder capacity. Anticholinergic drugs have been shown to improve symptoms in OAB syndrome and allow a modest improvement in quality of life. Depending on the severity of symptoms and the level of distress, anticholinergic drugs may be started immediately or added if the initial advice is not totally effective.^[8] It is not clear whether any benefits are sustained during long-term treatment or after treatment stops.^[9] There is no evidence of a clinically important difference in efficacy between antimuscarinic drugs. Immediate-release non-proprietary oxybutynin is the most cost-effective of the available options. Immediate-release oxybutynin may be started if bladder training is not effective. It may also be used in conjunction with bladder training. Do not use in frail elderly women.^[10]

- The efficacy and side-effects of tolterodine are comparable to those of modified-release oxybutynin. When choosing between oral immediate-release oxybutynin or tolterodine, tolterodine may be preferable because of the reduced risk of dry mouth. Extended-release preparations of oxybutynin or tolterodine might be preferred to immediate-release preparations because there is less risk of dry mouth. ^[11]
- Tolterodine is as effective in reducing leakage and other symptoms of OAB in patients with mixed incontinence as it is in patients with urge incontinence alone. ^[12]
- If immediate-release oxybutynin is not well tolerated, darifenacin, solifenacin, tolterodine, propiverine, trospium or an extended-release or transdermal formulation of oxybutynin should be considered as alternatives. ^[5]
- Intravaginal oestrogens: these can be used to treat OAB syndrome in postmenopausal women who have vaginal atrophy.
- Mirabegron is an agonist of beta-3 receptors in detrusor smooth muscle, designed to promote detrusor relaxation. It is recommended for people in whom antimuscarinic drugs are contra-indicated or clinically ineffective, or who have unacceptable side-effects. ^[10]

When to refer ^[10]

- Patients on anticholinergic drugs should be reviewed four-weekly and the dosage altered or another drug in the group tried if there is no benefit from current treatment.
- A secondary care referral should be considered for patients who fail to respond to drug treatment after three months or who do not wish for drug treatment.
- Patients who are stable on drug treatment should be reviewed annually (or six-monthly if aged over 75).

Management options offered in secondary care ^[10]

- **Botulinum toxin A:**
 - Injection of the bladder wall with botulinum toxin A is the first-line invasive option. It may be used if there is idiopathic OAB that has not responded to conservative treatment. The patient must be prepared to perform intermittent catheterisation if the effects wear off between injections. Urinary tract infections are a recognised risk. The duration is variable. More research is required to determine the long-term risks and benefits.
- **Nerve stimulation:**
 - Sacral nerve stimulation is effective in treating symptoms of OAB, including urinary urge incontinence, urgency and frequency in patients who do not respond to botulinum toxin A.
 - Percutaneous posterior tibial nerve stimulation (PTNS) is also effective in reducing symptoms in the short term and medium term for patients with OAB syndrome and should be offered to patients who do not want the first- or second-line options.
- **Surgical treatment:**
 - Surgery is only indicated for intractable and severe idiopathic OAB. Augmentation cystoplasty is the most frequently performed surgical procedure for severe urge incontinence.
 - In patients whose condition is refractory to non-surgical treatment, open augmentation cystoplasty is an established procedure.
 - Laparoscopic augmentation cystoplasty (including clam cystoplasty) is also indicated for OAB syndrome. Potential advantages of a laparoscopic approach are less intraoperative blood loss, quicker recovery, less pain, a shorter stay in hospital and smaller scars. ^[13]

- Urinary diversion may be considered if augmentation cystoplasty is neither appropriate nor acceptable to the patient.

Complications

May cause severe social difficulties, including undertaking shopping and attending meetings and therefore may also lead to social isolation and psychological difficulties.

Prognosis^[14]

Behavioural therapy combined with drug treatment is often effective, with over 80% of cases improved and with excellent long-term results.

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Further reading & references

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