Urinary Incontinence
Diagnosis and Management in the primary care setting

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Urinary Incontinence

- Involuntary loss of urine
- 1/3 of woman over age of 45 has some type of urinary incontinence
- Between 19.3 to 37% of Australian women suffer from urinary incontinence
Risk factors

- Advanced age
- Parity and mode of delivery
- Obesity
- Family History
- Menopause
- Recurrent UTI’s
- Hysterectomy
- Neurological disease including multiple sclerosis
- Reduced mobility
Types of Incontinence

- Stress Urinary incontinence
- Urge urinary incontinence
- Mixed urinary incontinence
- Overflow incontinence
## Impact on quality of life

<table>
<thead>
<tr>
<th>Psychological</th>
<th>Embarrassment can lead to a loss of self-respect and dignity and depression may also occur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social</td>
<td>Social activity outside the home is often restricted for fear of leaking urine or because of the frequent need to use a toilet</td>
</tr>
<tr>
<td>Financial</td>
<td>Items such as pads can be costly and are not always covered by medical insurance</td>
</tr>
<tr>
<td>Sexual</td>
<td>Women have reported avoiding sexual intimacy because of overactive bladder symptoms and fear of leaking urine</td>
</tr>
<tr>
<td>Physical</td>
<td>Some physical activities like exercising might be limited because of the frequent need to urinate or fear of leaking urine.</td>
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Overactive bladder – a syndrome of lower urinary tract symptoms

International Continence Society (ICS) definition of overactive bladder
Urgency with or without urge incontinence, generally usually with increased frequency and nocturia

Urgency
The complaint of a sudden compelling desire to pass urine that is difficult to defer

Urgency Urinary Incontinence
The complaint of involuntary loss of urine that is accompanied by or immediately preceded by urgency

Urinary Frequency
The need to void more than 8 times in a 24-hour period

Nocturia
The complaint of having to void more than once per night
Overactive bladder is highly prevalent\textsuperscript{1-3}

- Reported prevalence of OAB varies from 12\% to 17\%\textsuperscript{1-3*^†}
  - Prevalence is similar in men & women, but generally develops later in life in men\textsuperscript{1,2*^}
  - Up to \textasciitilde55\% of women and \textasciitilde16\% of men with OAB have urge urinary incontinence\textsuperscript{1*}

- Overactive bladder symptoms are reported in:\textsuperscript{3†}
  - 22\% of men and women aged 70–74 years
  - 31\% of females and 42\% of males aged \textasciitilde75 years

Although prevalence increases with age, overactive bladder is treatable and should not be considered a normal part of ageing\textsuperscript{4}

\*Data from the US National Overactive Bladder Evaluation (NOBLE) Program involving 5204 adults aged \textasciitilde18\ years and representative of the US population by sex, age and geographical region.\textsuperscript{1}
\^Data from a cross-sectional survey of 19,165 individuals in Canada, Germany, Italy, Sweden and UK.\textsuperscript{2}
†Data from a random sample of 16,776 subjects aged \textasciitilde40\ years from six European countries.\textsuperscript{3}

In 2010, the total financial cost of incontinence in Australia was an estimated $42.9 billion

Overactive bladder remains undertreated\(^1,2\)

- One study showed that only 38% of women with urinary incontinence symptoms seeks clinical help\(^1\)*

- Another study showed that only 27% of all patients with symptoms of overactive bladder receive treatment\(^2\)†

Patients want their primary care provider to discuss the issue, yet there appears to be a communication gap\(^3\)

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*Data from a US national, cross-sectional mailed survey identifying 1,970 women with urinary incontinence symptoms.\(^1\)
†Data from a random sample of 16,776 subjects aged >40 years from six European countries.\(^2\)

Recognition of overactive bladder requires vigilance for symptoms\textsuperscript{1}

- Patients often delay seeking medical care for several reasons, including:\textsuperscript{1,2}
  - Embarrassment/anxiety
  - A belief the symptoms are part of normal ageing
  - The perception it is not a valid medical condition

- Physicians may not raise the issue for lack of time, concern that the evaluation is difficult, or concern that the treatment options are minimal\textsuperscript{2}

Women tend to present when urge urinary incontinence develops and their quality of life is affected\textsuperscript{2,3}

Encouraging open discussion with your patients

- Given the prevalence of overactive bladder, annual physical examinations or medical check-ups may be a good opportunity to discuss urinary problems with patients.

- A simple question may be sufficient to initiate discussion:
  - Are you bothered or worried by your urine control?
  - Do you have strong urinary urges you cannot control?
  - How often do you pass urine every day?
  - How often do you get up in the night to pass urine?
  - Do you often find yourself rushing to the toilet to urinate?
  - Do you always need to know where the nearest toilet is?
Recognising the symptom complex of overactive bladder\textsuperscript{1-3}

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Description</th>
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</table>
| Urgency (primary driver)         | • A sudden, intense, difficult-to-defer desire to pass urine  
• Must be differentiated from normal urge or desire to void that can be deferred                                                                 |
| Frequency                        | • Defined as urinating $>8$ times in a 24-hour period                                                                                                                                                        |
| Nocturia                         | • Defined as awakening to urinate more than once per night (or twice per night in older patients)  
• Enuresis (bedwetting) may also occur                                                                                                                                                                      |
| Urgency incontinence (with or without) | • Involuntary loss of urine accompanied or preceded by urgency  
• Up to $\sim$55\% of women and $\sim$16\% of men with OAB have urge urinary incontinence\textsuperscript{3}                                                                 |
Diagnosing overactive bladder

- The evaluation of patients with suspected overactive bladder should focus on:
  - Clinical history
  - Physical examination
  - Neurological assessment
  - Mid stream urine
  - Further investigations (where necessary)
Differential diagnosis of symptoms suggestive of overactive bladder in women

- Urinary tract infection
- Prolapse
- Urethral obstruction
- Atrophic vaginitis
- Bladder cancer
- Interstitial cystitis
- Postsurgical incontinence
- Diabetes
- Congestive heart failure
- Multiple sclerosis
- Medications/diuretics
- Neurogenic bladder
- Recent pelvic surgery
- Stress urinary incontinence
Effect of drugs on bladder function

- Antihistamines and decongestants
- Benzodiazepines
- Anticholinergics
- Ace inhibitors
- Alpha agonist and blockers
- Antidepressants (SSRI and tricyclic antidepressants)
Effect of selected medicines and other agents on bladder function

<table>
<thead>
<tr>
<th>Medicines and other agents</th>
<th>Effect on bladder function</th>
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</thead>
<tbody>
<tr>
<td><strong>Allergies</strong></td>
<td></td>
</tr>
<tr>
<td>Antihistamines</td>
<td>First generation H₁ receptor antagonists (e.g., brompheniramine, chlorpheniramine, dimaprin, cyproheptadine, desloratadine, diphenhydramine, hydroxyzine, others)</td>
</tr>
<tr>
<td>Decongestants</td>
<td>Phenylephrine, phenylpropanolamines</td>
</tr>
<tr>
<td><strong>Antimicrobial and anti-inflammatory agents</strong></td>
<td></td>
</tr>
<tr>
<td>Oxicams</td>
<td>Oxicams, cephalosporins, trimethoprim, others</td>
</tr>
<tr>
<td>Cephalosporins</td>
<td>Cephalosporins, others</td>
</tr>
<tr>
<td><strong>Anticholinergics</strong></td>
<td>Anticholinergic (nonselective muscarinic antagonists)</td>
</tr>
<tr>
<td>Dicyclomine</td>
<td>Decreased contractility via anticholinergic effect</td>
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<tr>
<td>Oxybutynin</td>
<td>Decreased contractility via anticholinergic effect</td>
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<tr>
<td>Phenoxybenzamine</td>
<td>Decreased contractility via anticholinergic effect</td>
</tr>
<tr>
<td><strong>Antidepressants</strong></td>
<td>Antidepressants (TCA, MAO inhibitors)</td>
</tr>
<tr>
<td>Amoxapine, maprotiline</td>
<td>Decreased contractility via anticholinergic effect</td>
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<tr>
<td>Nortriptyline</td>
<td>Decreased contractility via anticholinergic effect</td>
</tr>
<tr>
<td><strong>Antitussives</strong></td>
<td>Antitussives (e.g., dextromethorphan, codeine, others)</td>
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<tr>
<td>Cough suppressants</td>
<td>Decreased contractility via anticholinergic effect</td>
</tr>
<tr>
<td><strong>Antiulcer medications</strong></td>
<td>Antiulcer medications (e.g., cimetidine, ranitidine, omeprazole, others)</td>
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<tr>
<td>Omeprazole</td>
<td>Decreased contractility via anticholinergic effect</td>
</tr>
<tr>
<td><strong>Corticosteroids</strong></td>
<td>Corticosteroids (e.g., prednisone, methylprednisolone)</td>
</tr>
<tr>
<td><strong>Diuretics</strong></td>
<td>Diuretics (e.g., furosemide, hydrochlorothiazide, others)</td>
</tr>
<tr>
<td><strong>Pain medications</strong></td>
<td>Pain medications (e.g., tramadol, morphine, others)</td>
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<tr>
<td><strong>Hormone medications</strong></td>
<td>Hormone medications (e.g., estrogen, progesterone, others)</td>
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<tr>
<td><strong>Trimetazidine</strong></td>
<td>Trimetazidine</td>
</tr>
<tr>
<td><strong>Hypoglycemic agents</strong></td>
<td>Hypoglycemic agents (e.g., metformin, sulfonylureas, others)</td>
</tr>
<tr>
<td><strong>Antioxidants</strong></td>
<td>Antioxidants (e.g., vitamin C, vitamin E)</td>
</tr>
<tr>
<td><strong>Antiviral agents</strong></td>
<td>Antiviral agents (e.g., acyclovir, valacyclovir)</td>
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<tr>
<td><strong>Antipsychotics</strong></td>
<td>Antipsychotics (e.g., clozapine, olanzapine, risperidone, others)</td>
</tr>
<tr>
<td><strong>Anticonvulsants</strong></td>
<td>Anticonvulsants (e.g., lamotrigine, levetiracetam, topiramate)</td>
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<tr>
<td><strong>Antiarrhythmics</strong></td>
<td>Antiarrhythmics (e.g., amiodarone, flecaïnn)</td>
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<tr>
<td><strong>Anxiolytics</strong></td>
<td>Anxiolytics (e.g., diazepam, lorazepam, others)</td>
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<tr>
<td><strong>Muscle relaxants</strong></td>
<td>Muscle relaxants (e.g., diazepam, lorazepam, others)</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td>Others (e.g., influenza vaccines, vaccinations, others)</td>
</tr>
<tr>
<td><strong>Allergies</strong></td>
<td>Allergies (e.g., aspirin, penicillin, others)</td>
</tr>
</tbody>
</table>

**ACG**: angiotensin-converting enzyme.

* Intranasal anticholinergic preparations (e.g., ipratropium, oxitropium) and sympathomimetic sprays (e.g., phenylephrine, xylometazoline) can be absorbed systemically once their local effects have worn off, and their use may be associated with systemic effects, particularly among older adults, even with benign prostate hyperplasia (BPH) and administration of a beta-blocker for clinical conditions. Mixed effects have been described.

1. From the UptoDate website. Copyrights apply. 

References:
Patient presents with symptoms suggestive of overactive bladder (i.e. urgency +/- urge incontinence, usually with frequency and nocturia)

Obtain patient history (including past genitourinary disorders)

Perform physical examination to exclude obvious pathologies (e.g., inflammation, prolapse, masses)

Obtain urinalysis to exclude conditions sometimes associated with overactive bladder (e.g., urinary tract infections)

In the absence of proven infection or other pathology, the symptoms of urgency with or without urge incontinence, usually with frequency and nocturia, should be treated as overactive bladder

Red flags that should prompt further studies or referral to a specialist

- Uncertain diagnosis and inability to develop a reasonable management plan
- Lack of response to an adequate trial of conservative therapies (e.g., bladder training, pelvic muscle exercises and drug therapy)
- Haematuria without infection
- Severe (beyond the introitus) pelvic organ prolapse
- Abnormal postvoid residual urine volume
- Neurologic condition (e.g., multiple sclerosis, spinal cord lesions) in which a component of neurogenic bladder is suspected
- History of pelvic surgery
Treatment of overactive bladder

- **Non-pharmacological**
  - Life style modification
  - Behavioural therapy
  - Patient education on fluid intake
  - Bladder training, pelvic floor exercises
  - Neuromodulation

- **Pharmacological**
  - Antimuscarinic agents
  - Local vaginal oestrogen application
  - Tricyclic antidepressants
  - B3 Adrenergic agonist
  - Botulinum toxin injections
Behavioural therapy for overactive bladder

- Education reinforcement
- Fluid & diet management
- Pelvic floor exercises & biofeedback
- Timed voiding
- Delayed voiding
- Charts & diaries

Reviewing lifestyle changes as part of a bladder training program

- Reduce or cease intake of caffeine, alcohol and sweet drinks
- Manage constipation
- Only go to the toilet when needed (i.e. don’t go “just-in-case”)
- Drink ~1.5 L of fluid per day (mostly water)
- Exercise pelvic floor muscles
- Maintain a healthy weight
Selecting an antimuscarinic agent

Agents differ at the structural and molecular level, resulting in different metabolism, absorption, potency and selectivity profiles.

Antimuscarinic agents can be divided into two main groups:
- Non-selective – have affinity for all muscarinic receptors
- Selective – have relatively more affinity for M2 and M3 receptors

Understanding how these differences impact efficacy and safety allows clinicians to make informed decisions about the most suitable treatment option for their patients.
Available anticholinergic agents and their predominant receptor affinity

<table>
<thead>
<tr>
<th>Medication</th>
<th>Predominant receptor affinity*</th>
<th>Metabolism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxybutynin</td>
<td>M1, M2, M3, M4</td>
<td>Hepatic</td>
</tr>
<tr>
<td>Ditropan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tolterodine</td>
<td>M1, M2, M3, M4, M5</td>
<td>Hepatic</td>
</tr>
<tr>
<td>Detrusitol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solifenacin</td>
<td>M3</td>
<td>Hepatic</td>
</tr>
<tr>
<td>Vesicare</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Darifenacin</td>
<td>M3</td>
<td>Hepatic</td>
</tr>
<tr>
<td>Enablex</td>
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</tbody>
</table>
B3 Adrenergic agonist

- Mirabegron (Betmiga)
- Avoid with hypertension
Managing patient expectations

- A USA survey (n=5392) showed 45.4% of patients treated with antimuscarinics for overactive bladder reported unmet treatment expectations as the reason for discontinuation.

- Treatment success is more likely if the patient is:
  - Given realistic expectations of symptom response
  - Forewarned about adverse effects and advised on coping strategies
  - Given sufficient duration of treatment
  - Provided with the option of dose adjustment

Thus, GPs have an important role to play in promoting realistic expectations among their patients treated with antimuscarinics.
Summary

- Overactive bladder is highly prevalent occurring in 12% to 17% of people

- Untreated overactive bladder can have a negative impact on psychological well-being, quality of life and physical health
  - Despite this, patients often delay seeking medical care and only 27% receive treatment

- By recognising the symptoms of overactive bladder, it is usually possible for GPs to diagnose and treat the condition within the primary care setting
  - Antimuscarinic agents represent the main pharmacological option for controlling the symptoms of overactive bladder in primary care

Proactively ask your patients about bladder symptoms and check for urgency, the defining symptom of overactive bladder