The impact of commonly used medicines on urinary incontinence

Approximately 25,000 veterans are affected by urinary incontinence (UI); of these, nearly two thirds are female and 93% are aged over 75 years.¹

Urinary incontinence adversely affects quality of life and it has been reported that men with urinary incontinence have poorer self-perceived general health than men who are continent.² In frail older persons it is associated with increased burdens on their carers which can precipitate admission to an aged care facility. Urge incontinence is associated with an increased risk of falls.

Both the prevalence and severity of UI are known to increase with age.

The impact of medicines in precipitating or worsening UI may be underestimated. Many commonly used medicines can adversely impact on continence; approximately 90% of veterans with UI are dispensed at least one of these medicines and 36% are dispensed three or more.¹ The risk of incontinence increases as the veteran is dispensed more of these medicines (increasing the ‘drug burden’ or ‘load’). They include verapamil, diltiazem, temazepam and ACE inhibitors.

Any medicine which acts on adrenergic or cholinergic receptors, or which affects cognition may impact on urinary continence.

This Veterans’ MATES therapeutic brief aims to increase awareness of commonly used medicines which can precipitate or worsen urinary incontinence. Whilst it may not be possible to cease these medicines, for those veterans where the ‘load’ of these medicines is significant, GPs may be able to improve incontinence symptoms by reducing dosages.

This brief also covers assessment of urinary incontinence and strategies for treatment.

Aetiology of urinary incontinence³,⁴,⁵

Normal bladder function results from a complicated series of central and peripheral nerve signals.

Several physiological changes occur in the lower urinary tract with increasing age. These can predispose to urinary incontinence and include: increased prevalence of involuntary detrusor contractions, a decrease in urethral closure pressures in women and the development of benign prostatic hypertrophy (BPH) in more than half of older men.

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Key points

- Many commonly used medicines may cause or worsen urinary incontinence.
- Review the medicines of your veteran patients with urinary incontinence.
- Consider dose reduction of medicines which cause or worsen urinary incontinence or, if possible, prescribe a different medicine.
- Consider non pharmacological management options.

In addition, continence status may be affected by,

- Medicines (see table 1)
- Cognitive impairment
- Mobility (inability to get to the toilet in time)
- Manual dexterity (inability to undress in time)
- Bladder and sphincter function
- Urinary tract infection
Thorough assessment of urinary incontinence is important. The National Audit of Continence Care (UK, 2010) found that for one in three people with urinary incontinence in the community, there was no documented evidence of the type or cause, suggesting assessment had been suboptimal. In the absence of a diagnosis, treatment options are limited. People can be reluctant to talk about incontinence because they wrongly believe that it is a normal part of ageing, are embarrassed or lack awareness of treatment options. Sensitive questioning about urinary incontinence at routine consultations can encourage disclosure.

Assessment of urinary incontinence

If a patient discloses that they have urinary incontinence,

- Identify the characteristics of presenting incontinence - duration, frequency, amount, precipitants.
- Identify impact on quality of life.
- Identify other related symptoms - nocturia, dysuria, hesitancy, pain, constipation.
- Assess patient’s mobility and environment. Ask about falls.
- Systematically assess current medication use.
- Review general medical, neurological, genitourinary and gastroenterological health and perform a full physical examination.
- Consider the contribution of co-morbid conditions to the urinary incontinence and exclude a urinary tract infection.
- Quantify fluid intake including alcohol and caffeine.
- Elicit details of any previous treatments and expectations of treatment.

Keeping a bladder diary for 3 days - where voiding times, the number of incontinent episodes, amount of loss and the circumstances are recorded - can help in initial assessment, in deciding treatment and in monitoring the response to interventions (see further information).

Diagnosing the type of incontinence on the basis of clinical history alone can be misleading. If no improvement is found after an initial review, consider referral to a specialised service. Urodynamic studies may be required.
Medicines and urinary incontinence

Medicines may affect urinary continence by: acting directly on the lower urinary tract, increasing urine production, impairing cognition or mobility, or causing constipation.

Some of the medicines implicated in exacerbating or causing urinary incontinence are listed in Table 1. Whilst it may not be possible to cease these medicines, dosages may be able to be reduced. There may also be some individual variation in the extent to which a veteran is affected by these medicines.

It is good practice to enquire if urinary incontinence has developed after initiation of a new medicine or after a dosage increase. Where possible aim to reduce the dose or number of medicines that may be contributing to urinary incontinence. Failing to recognise medicines as a contributing factor to urinary incontinence may lead to a ‘prescribing cascade’ as treatment with an anticholinergic may then be initiated and cause further side effects.

**Table 1: Medicines that can cause or exacerbate urinary incontinence**

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Potential effects on continence</th>
<th>Type of incontinence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anticholinergic agents</strong> e.g. oxybutynin, solifenacin*, antihistamines, benztrapine</td>
<td>Reduce bladder contractions, urinary retention, cognitive impairment, constipation</td>
<td>Retention of urine</td>
</tr>
<tr>
<td><strong>Cholinesterase inhibitors</strong> e.g. donepezil</td>
<td>Increase bladder contractions</td>
<td>Urge</td>
</tr>
<tr>
<td><strong>Calcium channel blockers</strong> e.g. verapamil, diltiazem</td>
<td>Reduce bladder contractions, constipation</td>
<td>Retention of urine</td>
</tr>
<tr>
<td><strong>ACE inhibitors</strong></td>
<td>Drug-induced cough</td>
<td>Stress</td>
</tr>
<tr>
<td><strong>Diuretics</strong> e.g. frusemide, indapamide, hydrochlorothiazide</td>
<td>Increase urine volume</td>
<td>Urge, Retention of urine</td>
</tr>
<tr>
<td><strong>Antipsychotics</strong> e.g. risperidone, haloperidol, olanzapine</td>
<td>Reduce bladder contractions, constipation, confusion</td>
<td>Retention of urine, Functional</td>
</tr>
<tr>
<td><strong>Benzodiazepines</strong> e.g. diazepam, temazepam</td>
<td>Sedation</td>
<td>Functional</td>
</tr>
<tr>
<td><strong>Tricyclic antidepressants</strong> e.g. dothiepin, amitriptyline</td>
<td>Reduce bladder contractions, sedation</td>
<td>Retention of urine, Functional</td>
</tr>
<tr>
<td><strong>SSRIs</strong> e.g. sertraline</td>
<td>Increase bladder contractions, sedation</td>
<td>Urge, Functional</td>
</tr>
<tr>
<td><strong>Opioids</strong> e.g. codeine, morphine</td>
<td>Reduce bladder contractions, constipation, confusion</td>
<td>Retention of urine, Functional</td>
</tr>
<tr>
<td><strong>Selective alpha blockers</strong> e.g. prazosin, tamsulosin</td>
<td>Relax bladder outlet</td>
<td>Stress incontinence in women**</td>
</tr>
<tr>
<td><strong>Hormone replacement therapy</strong>*</td>
<td>Ineffective urethral closure</td>
<td>Urge, Stress</td>
</tr>
</tbody>
</table>

*Oxybutynin/darifenacin/solifenacin/propantheline/tolterodine may be appropriate to use in some people with urge incontinence but can cause urinary retention.

**Selective alpha blockers are used in men with bladder outlet obstruction.

***Applies to systemic hormone replacement therapy and not topical oestrogen treatment.
Treatment of urinary incontinence

Conservative treatments are first line in the management of urinary incontinence and assessment by a continence nurse/service can be helpful.

Weight loss can improve stress incontinence in obese or overweight women. Pelvic floor exercises can also benefit those with stress or mixed incontinence. Women who do pelvic floor muscle training experience fewer incontinence episodes per day and report better quality of life than those who do not.14 Continued support from continence exercise specialists will help maintain benefits.

Bladder training, which encourages patients to gradually increase the interval between voiding, should be considered for women with urge or mixed incontinence. Reducing caffeine intake may also help those with urge incontinence. In people with cognitive impairment, prompted or timed voiding may be helpful and has been shown to reduce urinary incontinence by one episode per day in aged care residents.15 Ensure the bathroom is clearly identified.

Those with functional incontinence related to mobility may benefit from assessment by an occupational therapist or physiotherapist who may recommend simple measures to improve toilet access. These may include: removal of clutter, good lighting, non-slip flooring, hand rails and raised toilet seat height and appropriate clothing.

For those patients with urge incontinence who are not responding to non-pharmacological treatment, anticholinergic medicines can be trialled. They increase bladder capacity by relaxing detrusor muscle however, they can precipitate urinary retention in people with co-incident detrusor underactivity and in men with bladder outlet obstruction.

Anticholinergic medicines have significant side effects to which the elderly and those with cognitive impairment are more susceptible. These include: delirium, confusion, constipation, dry mouth, urinary retention and tachycardia. Any improvement in symptoms of urge incontinence is usually modest with approximately 5 fewer trips to the toilet and 4 fewer leakage episodes per week.16 If an anticholinergic is to be trialled, advise patients of possible side effects and be wary of medicines already being taken by the patient which may have anticholinergic effects e.g. antidepressants or antipsychotics. These will add to the anticholinergic load and increase the likelihood of side effects. Consider ceasing or reducing these medicines if an anticholinergic must be trialled. Start with a low dose of an anticholinergic e.g. oxybutynin 2.5mg orally once daily, increasing slowly if necessary to a maximum of 2.5mg two or three times daily.17

Cease after 4 weeks if there is no benefit.

References

1. DVA Health Claims Database, University of South Australia, QUIMPRC. Accessed September 2010.
19. Further information
   - Continence Foundation of Australia www.continence.org.au
   - For ceasing antipsychotics see: Therapeutic Brief 12, Antipsychotics in Dementia www.veteransmates.net.au/VeteransMATES/documents/module_materials/M12_TherBrief.pdf
   - For ceasing benzodiazepines see: Therapeutic Brief 18, Insomnia Management: Effective approaches for a common problem www.veteransmates.net.au/VeteransMATES/documents/module_materials/M18_TherBrief.pdf
   - For reducing the anticholinergic load see: Therapeutic Brief 25, Reducing the load: Medicines best avoided in patients with dementia www.veteransmates.net.au/VeteransMATES/documents/module_materials/M25_TherBrief.pdf

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