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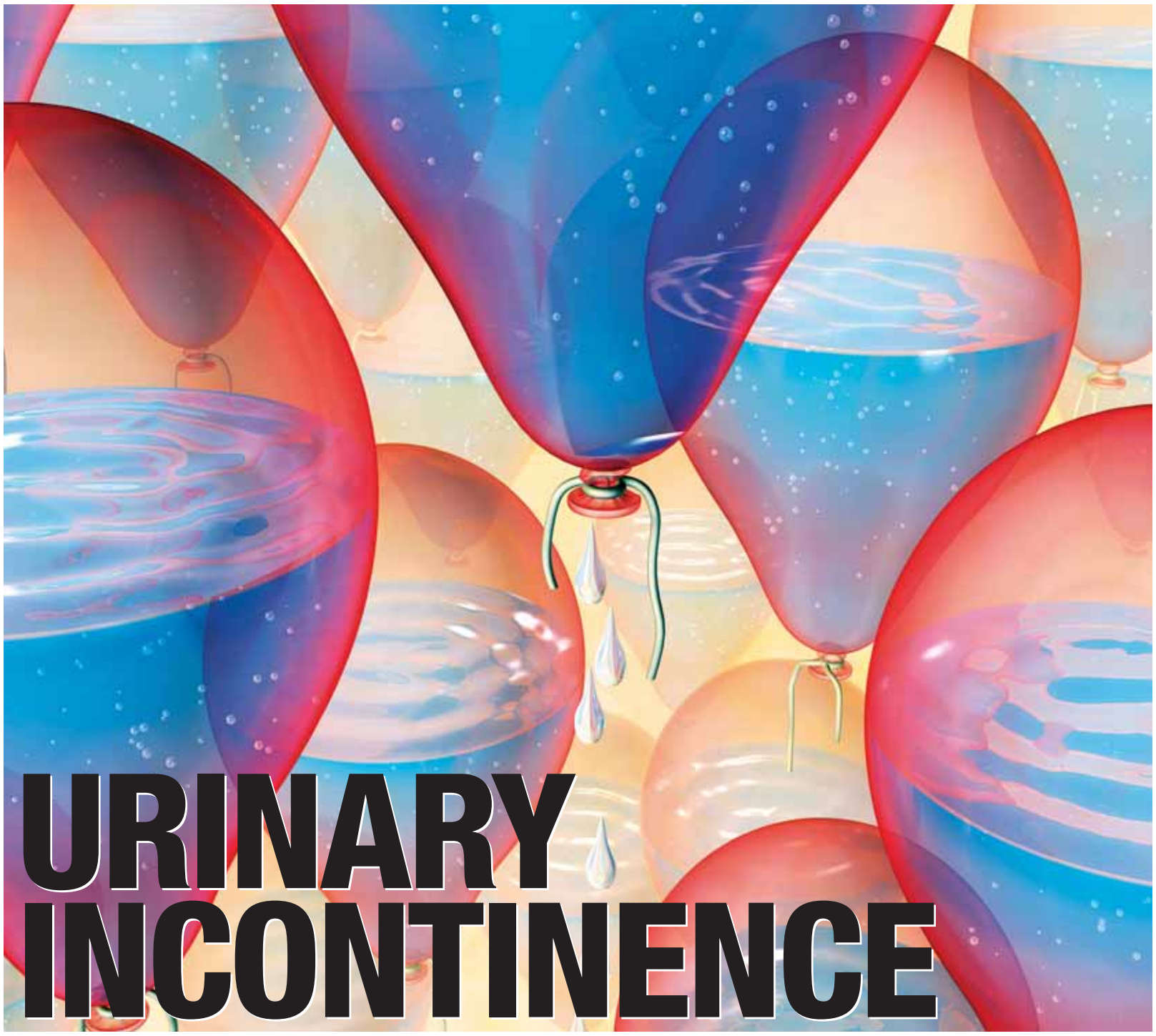

URINARY INCONTINENCE in the FRAIL ELDERLY

inside

The author

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Background

URINARY incontinence (UI) is defined by the International Continence Society as the complaint of any involuntary leakage of urine.[1]

In women there is a progressive rise in incidence with age until a levelling off at age 50-65, before a further rise thereafter.[2] The rise in men is slower, but escalates after about age 70 to approach a similar incidence to that of women over 85. In all groups incontinence is increasingly severe and bothersome as people age.[2] The Australian Institute of Health and Welfare (AIHW) estimates that UI affects up to 13% of men and 37% of women in Australia and that 1.4% have "severe" incontinence.[3]

In quality of life, health and socioeconomic terms, consequences of under-treatment are high. The AIHW estimates that in Australia in 2003, 117,700 healthy life years were lost because of incontinence, with the burden particularly apparent for people aged 75 years and older.[1] The Dubbo Study of the Health of the Elderly 1988-2003 also confirmed that incontinence was clearly a risk factor for early admission to a high-level care facility.[4] At least 77% of nursing home residents in Australia have incontinence.[5]

Table 1: Types of incontinence

- Urge — small capacity, overactive/sensitive bladder
- Stress — weak sphincter mechanism
- Overflow — poor emptying
- Continuous — fistula
- Functional
  - problems with toilet access
  - cognitive failure

Despite these figures, incontinence remains very poorly reported. Sixty-five per cent of women and 30% of men sitting in an Australian GP waiting room report some type of UI, yet only 31% of these people report having sought help from any health care professional.[6] Only a minority of primary care physicians routinely ask about incontinence.

In the *Bettering the Evaluation and Care of Health* (BEACH) program it was shown that at any age, UI is managed infrequently in general practice in Australia. In those aged 75 and over it is at a rate of only two per 1000 patient encounters in men, and four per 1000 in women.[7]

Australian Bureau of Statistics projections are that the number of older Australians will rise dramatically over the next few decades, with the greatest percentage rise being in those over 85 (217% rise from 2002 to 2021, 600% rise from 2002 to 2051) — the group most troubled by incontinence.[8] Thus the impact, already considerable, can be expected to increase markedly in the near future.

Mechanisms of incontinence

UI is not a diagnosis but rather a symptom or sign, with many possible aetiologies, but usually associated with a disturbance of lower urinary tract function, classified as in table 1.

cont'd page 31

from page 29

Why is incontinence so common in older people?

The multiple pathologies common in the elderly often have a direct and indirect impact on lower urinary tract function, as do many of the medications used to treat these conditions. This is reflected in the known risk factors for UI (table 2). While advancing age in itself does not cause incontinence, there are many age-related changes in the lower urinary tract that predispose (table 3).

Differences in the elderly

Older people are more likely to have detrusor overactivity, detrusor underactivity with impaired emptying, and also coexisting mixed dysfunctions. Thus there is more urge incontinence (often severe in degree) and voiding dysfunction. Functional incontinence is also common in older people.

While the increased comorbidities increase the likelihood of UI, they also make assessment more complicated and potentially reduce management options. However, this 'frail elderly' group deserves special attention, not only because it bears the greatest burden of illness, but also because in many cases significant benefits can be gained with attention to the many factors that might be contributing to this group's lower urinary tract symptoms.

Table 2: Risk factors for incontinence

■ Advancing age
■ Cerebrovascular disease
■ Chronic cough/smoking
■ Cognitive impairment
■ Constipation
■ Diabetes mellitus
■ Impaired mobility
■ Lower urinary tract symptoms
■ Medicines (hypnosedatives, diuretics)
■ Obesity
■ Dependency for personal activities of daily living
■ Previous genitourinary surgery
■ UTIs
■ Obstetric factors, parity and pregnancy in younger women

Source: Hunskaar, et al (2005)[9]

Table 3: Age-related changes affecting continence

Structural
■ ↓Bladder collagen — reduced elasticity
■ Benign prostatic hypertrophy
■ ↓Oestrogen — urothelial atrophy
Physiological
■ ↑Nocturnal urine production
■ Altered neurotransmitter function
■ ↓Immune function
Functional
■ ↓Bladder capacity
■ ↓Bladder sensation
■ ↑Post-void residual urine volume
■ ↓Urine flow rate
■ ↓Urethral pressure
■ ↑Risk of urinary infection

Transient incontinence

'DIAPERS' (table 4) is a useful mnemonic for the many possible reversible factors that are especially likely to unmask incontinence, or make pre-existing incontinence worse in the frail elderly.

Table 4: Precipitants of transient incontinence

D — Delirium
I — Infection
A — Atrophic vaginitis or urethritis
P — Pharmaceuticals
E — Endocrine disorders
R — Restricted mobility
S — Stool impaction

Adapted from Resnick (1984)[10] (reproduced with permission).

Delirium

Voluntary control of normal voiding is threatened in delirium caused by infections, some medications, electrolyte and metabolic disturbance and 'displacement confusion' in the cognitively impaired.

Infection

A symptomatic UTI is more likely to cause urge incontinence, particularly in people with pre-existing incontinence and impaired mobility.

Atrophic vaginitis

Atrophic vaginitis may cause urgency, frequency and dysuria.

Pharmaceuticals

Medicines may impact on the ability to maintain continence (table 5). Many will suppress alertness and cognitive functioning; for example, hypnotics make it difficult to wake and get to the toilet safely.

Agents with anticholinergic or calcium-blocking action may promote retention in people with any detrusor muscle failure or outflow obstruction. In contrast, caffeine (in coffee, tea, cola drinks and chocolate) is a direct bladder stimulant and will promote urge incontinence.

Alpha blockers such as prazosin and some older psychotropics with alpha-blocking action such as thioridazine will unmask or aggravate genuine stress incontinence by reducing outflow resistance.

Constipation can aggravate urge incontinence but may especially promote retention in those otherwise predisposed. Inadequate fluid intake with bulking agents used to treat constipation will worsen constipation, so their use in many frail elderly needs to be with care.

Drugs causing postural hypotension, and major tranquillisers causing parkinsonism, may slow mobility.

ACE inhibitors may cause dry cough and so may aggravate genuine stress incontinence.

Table 5: Main drug causes of incontinence

Disturbed cerebral control	**Indirect causes**
■ Hypnosedatives	Polyuria:
■ Major tranquillisers	■ Frusemide
■ Antiparkinsonian agents	■ Lithium
■ Antidepressants	■ Alcohol
■ Anticholinergic agents	Constipating agents:
■ Anticonvulsants	■ Diuretics
■ Digoxin	■ Opiates
■ NSAIDs	■ Verapamil
Influence on lower urinary tract	Cough:
■ Anticholinergic agents	■ ACE inhibitors
■ Calcium-channel blockers	Poor mobility:
■ Tricyclic antidepressants	■ Major tranquillisers
■ Alpha blockers	■ Drugs that promote hypotension

Endocrine disorders

Polyuric states cause urinary frequency and may aggravate urge incontinence. These include poorly controlled diabetes, hypercalcaemia, and some types of chronic renal failure.

The importance of addressing all reversible factors is exemplified in the Author's case study on page 35.

Established incontinence

URINARY incontinence due to underlying lower urinary tract dysfunction is a consequence of urological, gynaecological or neurological disorders (tables 6-8).

Urge incontinence

Detrusor overactivity is the most common cause of incontinence in the elderly, with unstable bladder contractions occurring with limited voluntary control. In most cases the bladder has a low capacity, so symptoms will include frequency (including nocturia) as well as urgency. Most with detrusor overactivity empty well, but coexistent impaired emptying is more likely in older people.

Overflow incontinence

Overflow incontinence may arise in people with subacute urinary retention. It may occur without awareness, and is provoked by even a very mild increase in intra-abdominal pressure. Associated symptoms of voiding difficulty (hesitancy, poor stream) are not always present.

While overflow incontinence is more common in older people, a much more prevalent problem is impaired emptying without actual overflow incontinence. Indeed, urge incontinence, due to coexisting detrusor overactivity in those with impaired emptying, is more prevalent than actual overflow incontinence.

Impaired emptying is due to outflow obstruction, detrusor muscle failure (detrusor underactivity), or both. Prostatic obstruction is the most common cause in men, although many will have coexistent secondary detrusor underactivity.

Most other cases with impaired emptying are due to detrusor underactivity. Initially many will be asymptomatic, and present during an acute illness or after surgery, precipitated by the effects of medications, constipation and immobilisation. However, patients may do well with bladder 'retraining' after correction of these contributory factors.

Table 6: Causes of urge incontinence

- Idiopathic
- Bladder stone/tumour
- Cystitis-radiation/painful bladder syndrome
- Bladder outflow obstruction (table 7)
- Neurogenic — stroke, Parkinson's disease, multiple sclerosis, suprasacral spinal lesions, etc

Table 7: Causes of overflow incontinence

Obstruction

- Prostatomegaly
- Previous continence surgery in women
- Urethral stricture
- Cystocoele
- Spinal cord disease (detrusor-sphincter dyssynergia)

Detrusor underactivity

- Idiopathic
- Diabetes mellitus
- Severe chronic outflow obstruction
- Spinal anaesthesia
- Anticholinergic and calcium-channel-blocking drugs
- Pelvic trauma, surgery, infiltration

Genuine stress incontinence

Genuine stress incontinence (GSI) results from sphincter mechanism weakness. The biggest individual risk factor in women is the first vaginal delivery, although the condition may occur even in nulliparous women. Chronic coughing, due to smoking and COPD, and obesity are established risk factors. Chronic straining at stool is often poorly documented in individual cases. The role of oestrogen loss after menopause is less clear.

Most cases of GSI in men follow radical prostatectomy for carcinoma. It occasionally arises after surgery for benign prostatic disease.

GSI occurs synchronously with a rise in intra-abdominal pressure. During a stand-up transfer, especially when getting out of bed in the morning, the degree of leakage may be considerable. It may also occur while just walking, and may be associated with frequency and urgency, symptoms that usually suggest detrusor overactivity.

Continuous incontinence

This is quite uncommon and is due to a fistula from the bladder or proximal urethra. Causes include pelvic sepsis, malignancy, radiotherapy, surgery or trauma. Incontinence might appear 'continuous' in someone with overflow incontinence, and occasionally in very severe GSI.

Functional incontinence

This type of incontinence is almost only seen in disabled people and older people with cognitive impairment. Functional factors of poor mobility, dexterity and vision make it harder to access a toilet in a timely manner, but incontinence should not occur if lower urinary tract function is normal. Cognitive impairment may result in voiding in inappropriate places due to a lack of understanding of what constitutes a socially appropriate toilet.

Mixed dysfunction incontinence

As people age, there may be more than one dysfunction in any individual. A combination of detrusor overactivity and GSI is common in older women. In men with prostatic obstruction, detrusor overactivity combined with detrusor underactivity is well recognised. Many of these men may also have coexistent cerebrovascular disease causing neurogenic detrusor overactivity.

Commonly recognised now in the frail elderly is the combination of detrusor overactivity and detrusor underactivity in the absence of outflow obstruction. This was originally referred to as detrusor hyperactivity and impaired contractility.[11] In some women the combination of detrusor overactivity and underactivity together with GSI, and often additional functional factors, will present significant challenges in assessment and management.

Another complex picture less common in the elderly is the combination of detrusor overactivity and detrusor-sphincter dyssynergia due to suprasacral spinal cord pathology. Hydronephrotic renal failure is an avoidable complication. This complication may occasionally be seen in older people with sacral spinal disorders, including lumbar canal stenosis.

Table 8: Causes of genuine stress incontinence

- Risk factors — chronic cough, chronic straining, obesity
- Vaginal delivery
- Menopause
- Pelvic trauma, surgery, infiltration
- Sacral spinal disease

Assessment

BECAUSE of the commonly associated comorbidities and the greater likelihood of combinations of lower urinary tract dysfunctions, a careful and comprehensive assessment is essential for optimal outcomes. The underlying intent is to understand the specific lower urinary tract dysfunction(s), and the relevant reversible or modifiable factors. The GP is well placed to successfully achieve this in most cases, and then to initiate a management plan.

Lower urinary tract dysfunction gives rise to a number of lower urinary tract symptoms (LUTS); incontinence is usually the most distressing. However, symptoms are often not indicative of the underlying mechanism of incontinence. Nevertheless, a good history is paramount. It should include knowledge of all medications, as well as alcohol and caffeine intake.

Physical examination should include abdominal, rectal and pelvic examinations, neurological and cardio-respiratory examination and mobility and cognition assessment. A pelvic examination should assess for masses, atrophic vaginitis and pelvic organ prolapse. Faecal impaction is underdiagnosed and may be present even if stool is soft or the rectum is empty. On digital rectal examination a large ballooned rectum can be a clue to chronic constipation.

With the frail elderly, a home assessment is often useful to look at environmental issues of toilet access, etc.

A frequency-volume chart (urinary diary), ideally completed over a 2-3-day period, will clarify the extent of the problem and often give clues to diagnosis. An accurate diary is commonly attainable in older people, with or without the assistance of a carer. Documenting intake provides additional information.

Diaries range markedly in complexity. The example shown in figure 1 is relatively simple and relates to a 72-year-old man with heart failure and previous stroke. It shows small individual voids due to detrusor overactivity as well as nocturnal polyuria (68% of the total 24-hour output overnight).

Figure 1: A sample urinary diary.

BLADDER CHART

PATIENT NAME:
Date of birth:
UR No:

Please complete this chart over 48 hours, documenting the following:
- the time and volume of each drink
- the time on each occasion urine is passed in the toilet, urinal, etc.
- whether you are wet or dry at the time
- the volume passed on each occasion

DATE: 27/11/07

Time	Type of drink	Amount of drink	Time	Amount of urine passed	Degree of leakage				Comments
					Dry	Damp	Wet	Soaked	
			1.30am	275mL			X		Woke wet
			3.10am	290mL	X				Urinal
			4.20am	260mL	X				Urinal
			5.45am	270mL		X			Woke wet
			6.50am	240mL		X			At toilet
7.30am	Milk	300mL							
8.15am	Coffee	250mL							
			9.00am	130mL		X			At toilet
11.00am	Water	300mL							
			11.45am	125mL	X				
1.20pm	Tea	500mL							
			2.20pm	170mL	X				
3.00pm	Tea	250mL							
			6.10pm	110mL		X			At toilet
7.15pm	Wine	300mL							
10.30pm	Water	150mL							
			10.35pm	90mL	X				
Total		2050mL	Total	1960mL					

Investigations

URINARY infection should be excluded; any microscopic haematuria is an indication for investigation of localised bladder pathology. Renal function and electrolytes, glucose and calcium levels may need to be tested, depending on the clinical picture.

Post-void residual volume should be measured in all patients. This is best done with ultrasound and may

be easiest with portable 'bladder scanners' with the assistance of community and continence nurses. If the residual volume is elevated, a formal urinary tract ultrasound is recommended to rule out upper tract distension. Ultrasound will sometimes also identify renal and bladder pathology. In men, ultrasound determination of prostate size may aid urological decision making for surgery.

Haematuria, bladder pain and the sudden onset of, or change in, LUTS not otherwise explained suggests pathology requiring further investigation by cystourethroscopy.

Uroflowmetry is a screen for voiding dysfunction, without reliably defining the cause.

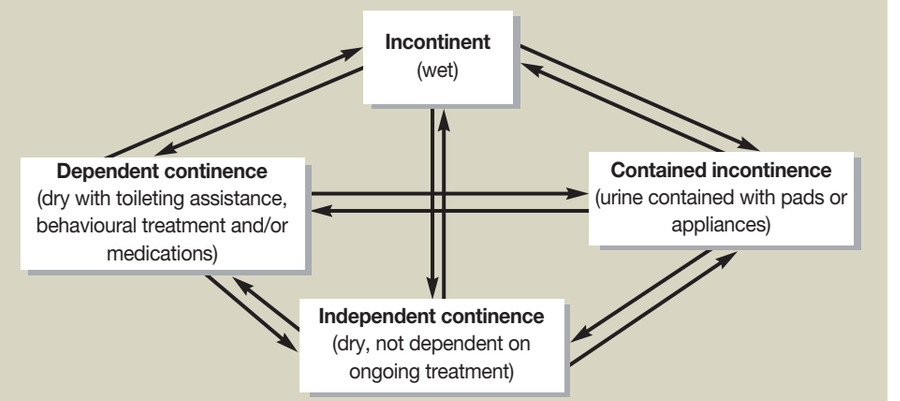
Urodynamics provides the most definitive assessment of lower urinary tract function and is generally well tolerated by the elderly. Indications include:

- When a conservative management regimen has been unsuccessful.
- When the clinical picture is unclear.
- Before considering continence surgery.
- In some patients with a neurogenic cause of incontinence.

Management

AN estimated 60-70% of people with incontinence can be cured or better managed, regardless of age.[12] However, cure will be less attainable in many frail elderly patients, especially those with severe cognitive impairment and disability. It is appropriate to consider an approach embraced by the paradigm in figure 2.

Figure 2: A paradigm for continence.



Source: Fonda D, et al. Managing incontinence in frail older patients. In: Abrams P, et al., editors. Incontinence — 3rd International Consultation on Incontinence. Health Publication Ltd, 2005.[13] Reproduced with permission of the publishers.

Reversible factors

The initial medical focus in managing the incontinent elderly patient should address all possible reversible factors.

A symptomatic UTI should be treated according to antimicrobial sensitivities. The frequency of recurrent symptomatic UTIs in women may be reduced with twice-weekly vaginal oestrogen. There is some limited evidence for the use of cranberry (more existing for juice than capsules).

Diabetic control should be optimised, constipation treated and good bowel clearance maintained. To this end, physical activity should be encouraged, as should an adequate fluid and fibre intake (dietary±supplementary). A regular laxative may be required in some.

Atrophic vaginitis will be helped with twice-weekly vaginal oestrogen. If oestrogen is contraindicated or not tolerated, a vaginal moistening agent such as Replens may be useful for vaginal dryness, soreness or dyspareunia.

Urge incontinence may be minimised by improving toilet access with clothing modification, optimising mobility and bathroom/toilet modifications. Otherwise the provision of a urinal or bedside commode may help.

Review of the medication regimen is essential. Hypnotics should be stopped if possible. Peripheral oedema due to heart failure may be satisfactorily controlled with some combination of ACE inhibitor, beta blocker and vasodilator, to minimise the dose of frusemide required. Frusemide may also be avoided with below-knee 15-20mmHg compression stockings of the Jobst-type for control of oedema due to poor venous return.

If the residual volume is elevated, agents with anticholinergic or calcium-channel-blocking action should be stopped whenever possible. Women with GSI should avoid alpha blockers, and also ACE inhibitors if they cause dry cough. Limitation of caffeine and alcohol may be very effective in those with urge incontinence.

Urge incontinence

Bladder training can be effective in older people, especially in those with idiopathic detrusor overactivity. Because this is a behavioural approach, motivation and reasonable cognition are required. It uses deferment techniques to extend inter-voiding intervals and increase bladder capacity.

A fluid intake of at least 1500mL is usually recommended, and monitoring with bladder diaries may be helpful. Referral to a continence therapist such as a continence nurse advisor may be helpful. Pelvic floor muscle exercises may help with urge control to assist a bladder training program.

Table 9: Anticholinergic side effects

■ Dry mouth
■ Constipation
■ Blurred vision
■ Postural hypotension
■ Lethargy, drowsiness
■ Confusion
■ Urinary retention
■ Glaucoma
■ Oesophageal reflux
■ Headache
■ Tachycardia
■ Impaired sweating

In the cognitively impaired, 'dependent continence' may be achieved with a prompted toileting regimen timed to prevent incontinence.

There is now Cochrane evidence of potential efficacy of pharmacotherapy to treat detrusor overactivity in the frail elderly.[14] However, as side effects can be serious (table 9), this approach should be with caution. Medications should only be used if the other approaches discussed above are inadequate. The initial dose should be small, increasing slowly, depending on response and tolerance of side effects. Treatment should be stopped after several weeks if ineffective.

The available medications are anticholinergics, with the gold standard in Australia being oral oxybutynin. The initial dose should only be 2.5mg/day. The maximum dose of 5mg tds is rarely tolerated. Propantheline is generally less efficacious, and unreliably absorbed. Tricyclic antidepressants are now rarely recommended in the frail elderly because of limited efficacy and a higher risk of seri-

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ous side effects such as falls.

Dry mouth is commonly the most troublesome side effect of the anticholinergics. When these agents are problematic, newer agents are usually better tolerated with respect to dry mouth and are similarly efficacious. Solifenacin (Vesicare) 5-10mg daily is a once-daily treatment, but tolterodine (Detrusitol) is more dose-adjustable (up to 2mg bd). Darifenacin (Enablex) 7.5-15mg daily may possibly be less likely to cause confusion in the cognitively impaired. Transdermal oxybutynin (Oxytrol) 3.9 mg/day patches twice a week is another new alternative, although 10-15% may have a skin reaction.

Unfortunately all these newer agents are not available on the PBS, although they may be available on special application to the Veterans Affairs Pharmaceutical Advisory Centre to gold-card-carrying veterans.

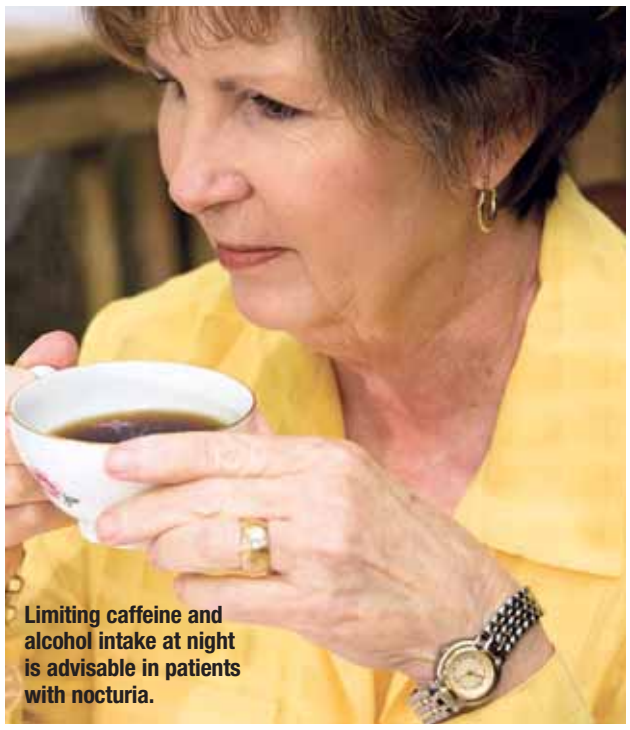
Surgical treatments are rarely appropriate in the frail elderly unless detrusor overactivity is due to safely reversible outflow obstruction.

Genuine stress incontinence

Attention to the risk factors may be critical for good outcomes. Pelvic floor exercises may also substantially reduce symptoms. Teaching of technique has historically been poor, and significant advances have occurred over the last 10-15 years. Brochures on pelvic floor exercises are available from the Continence Foundation of Australia (CFA), but much better outcomes are achieved with professional instruction.

The exercises are best taught by continence/pelvic-floor physiotherapists. Access is now widely available in both the private and public sector, and referral is recommended whenever appropriate. Pelvic floor exercises are also encouraged in men with GSI after radical prostatectomy.

Surprisingly, there is currently no good evidence that oestrogen plays a useful role in reducing GSI. Imipramine has some alpha-agonist action to promote proximal urethral closure; however, it is not usually effective, and side effects may be serious.


Limiting caffeine and alcohol intake at night is advisable in patients with nocturia.

Regardless of age, surgery should be considered when conservative therapies are inadequate. Even frail older women may do well with newer approaches to treatment, including less invasive procedures to insert mid-urethral slings and transurethral injections of bulking agents such as collagen.

Voiding dysfunction

Definitive treatment for outflow obstruction is usually with surgery, although men with benign prostatic obstruction are increasingly being treated initially with pharmacotherapy. This is ideally with tamsulosin (Flomaxtra) 400µg daily, although this is not on the PBS except for veterans. By its alpha-blocking action, outflow resistance is reduced, thereby improving flow. A secondary effect may be to alleviate symptoms of secondary detrusor overactivity.

Prazosin is an affordable alternative to tamsulosin, but the dose needs to be very carefully increased from 0.5mg bd to 2mg bd if possible, watching for postural hypotension.

Treatment of detrusor overactivity symptoms with anticholinergics may be effective, although care is required because of the risk of acute retention. Many men with symptomatic prostatic obstruction empty quite well however, and are at low risk. A 5-alpha-reductase inhibitor such as finasteride (Proscar) is very occasionally used to reduce obstruction in the short term, but is also not on the PBS.

Women with an obstructing cystocoele may benefit from a vaginal ring pessary, although sometimes this will unmask or aggravate pre-existing GSI. Surgical repair is the definitive treatment.

In patients with detrusor failure, anticholinergics and calcium-channel blockers should be avoided if possible, and constipation treated and prevented. When mechanical drainage is necessary, intermittent catheterisation by self or carer is the preferred method; many older people will happily manage this well with referral for tuition from a continence, urology or community nurse.

If indwelling catheterisation is required, a 16Fr hydrogel-coated or silicone catheter with a 10mL balloon should be used, and changed at least every three months, or more often if there are catheter-related problems. Leg bags should be used, with night bags being attached distal to the leg bag at night rather than disconnecting the leg bag (to minimise the risk of infection). A spigot valve for those with a reasonable bladder capacity is an alternative to leg bags.

A good fluid intake may reduce the chance of catheter blockage. Catheter-bypassing in the absence of luminal blockage is due to bladder spasm, and may respond to an anticholinergic. The catheter or balloon size should *not* be increased.

Nocturia

Nocturia is increasingly prevalent and commonly distressing as people age. A frequency–volume chart will clarify the factors involved. Detrusor overactivity is a common cause, when smaller than normal voided volumes are recorded.

Sleep disturbance is also a common reason people get up at night, with voided volumes at night that are smaller than daytime voids. However, more significantly, there is often an increase in urine production at night relative to the daytime. Nocturnal polyuria is defined as urine production at night, while in bed for the purposes of sleeping, of at least 33% of the 24-hour output.

For some, physiological hormone changes with ageing may contribute. Peripheral oedema is also an extremely common factor, with a return of the fluid from the legs when recumbent. Postural hypotension, the fluid drinking pattern, night-time alcohol and caffeine intake, and even obstructive sleep apnoea are other reversible factors.

Limiting night-time fluid intake, especially caffeine and alcohol, is appropriate although not always effective. Treatment of peripheral oedema, including with below-knee compression if possible, often helps. Other potentially helpful strategies to reduce oedema at the time of retiring include putting the feet up in the late afternoon/evening, and taking any usual once-daily dose (or the lunchtime dose in those on bd dosing) of frusemide in the late afternoon. Use of anticholinergics specifically for treating nocturnal polyuria is inappropriate.

Oestrogen deficiency

Oestrogen promotes urethral closure by optimising urethral tissue turgor and enhancing adrenergic-receptor responsiveness in the urethra and trigone. Symptoms of oestrogen deficiency may include frequency, urgency and dysuria (in the absence of infection). Treatment with twice-weekly vaginal oestrogen in cream, tablet or pessary preparations may alleviate these symptoms, as well as reduce the frequency of recurrent UTIs.

Continence products

An extensive range of products is now available to promote 'social continence' (ie, contained incontinence), especially appropriate for those whose incontinence cannot be cured (table 10). Continence nurse advisors, working with local continence services, and many community nursing services, can advise the most appropriate products and their supply.

These aids are often also very beneficial for the frail elderly as they begin their assessment and management plan. Optimal containment improves skin integrity, reduces carer stress, reduces falls risk and provides reassurance to help maintain social and community contact.

Financial support for provision of many products is available through different funding schemes, both federal (Continence Aids Assistance Scheme and Rehabilitation Appliances Program) and state based. Continence nurse advisors can assess for program eligibility. Information is also available from the National Continence Helpline, continence clinics, community nursing services and a comprehensive CFA fact sheet (see Referral services and resources, below).

Table 10: Continence aids and appliances

Absorbent pads:
■ Disposable and reusable pads and pants
Bed, chair and floor protection:
■ Mattress protectors, bed pads, waterproof doonas
■ Chair covers, floor mats
Aids to toileting:
■ Urinals, bedpans, commodes
■ Bathroom and toilet modifications
■ Long-handled wipers
Catheter drainage systems:
■ Intermittent catheters
■ Indwelling catheters
■ Drainage bag systems, spigot valves
■ Condoms
Intravaginal devices

Carer support

Behavioural approaches with carer-managed programs aim to achieve or maximise 'dependent continence', assisting both the patient and their often-elderly carer. Timed-toileting programs, carer education, looking for behavioural clues, and fluid modulation can minimise incontinence. A continence chart can guide advice, aiming to pre-empt incontinent episodes.

Carer education should include topics such as prompting or assisting the patient to the toilet, skin care, bowel management and dietary and fluid advice. Carers may also require advice on matters relating to minimisation of personal sleep disturbance, reducing laundry, odour control and management of incontinence outside the home.

Community partnerships

Assessing and managing the elderly person with incontinence can be complex and time consuming. Close partnerships with local continence services and nurse advisors can assist the busy GP in providing the time and care required. Home assessment, carer education, aids and funding advice can be addressed by the continence advisor.

There is also a role in contributing to the initial assessment. Local council, community health centres and the local Aged Care Assessment Service can also assist in assessing the home, providing continence and mobility appliances, and linking to other services as required.

Referral services and resources

Referral resources

- CONTINENCE nurse advisors and multidisciplinary continence services.
- Community nursing services.
- Continence/pelvic-floor physiotherapists.
- Specialists — geriatricians, urologists, urogynaecologists/gynaecologists.

When to refer

- For assistance by continence nurse advisors for carer support/education, product advice, etc.
- If conservative therapy is unsatisfactory.
- When the clinical picture is unclear.
- Complex cases, especially with voiding dysfunction.
- Many with neurological disorders.
- When surgery is likely to be appropriate.

Other resources

- Continence Foundation of Australia (CFA): www.continence.org.au
- Fact sheets from CFA: www.continence.org.au
- National Continence Helpline (run by CFA): 1800 330 066. Operates 8am-8pm (AEST), Monday to Friday.

Evidence-based practice*

Level 1
- Prompted voiding is effective for short-term treatment of daytime UI in nursing homes, and at home if carers comply with protocol.

Level 2
- Interventions to maintain patient-focused behavioural interventions in residential care facilities promote continence care.
- Drug treatment has a role in UI in the frail elderly.
- Oestrogen reduces vaginal atrophy but has little or no effect on UI.

Level 2-3
- Age-related changes contribute to UI.
- Many treatable conditions outside the lower urinary tract and bowel can cause or contribute to onset, maintenance or worsening of incontinence.

Level 3-4
- Comprehensive assessment to identify potentially treatable conditions is appropriate.

Level 4
- Carefully selected frail elderly patients may benefit from specialised assessment, including urodynamics.

The lack of good evidence relates specifically to a continuing lack of good clinical trials, and does NOT suggest that current recommended clinical practice is not appropriate.
*Fonda et al (2005)[13]

Conclusion

INCREASINGLY prevalent with age, urinary incontinence in older people is distressing and socially isolating. It remains poorly reported and under-treated, but with careful assessment can often be cured, or markedly improved. Most can have successful outcomes with management in the general practice setting.

Referral to specialist services should be considered where conservative treatments are suboptimal. Information regarding accessible services is available by phoning the National Continence Helpline on 1800 330 066.

Summary points

- Urinary incontinence is increasingly prevalent with ageing, and is distressing, socially isolating and socioeconomically costly.
- Aetiology is commonly multifactorial, and lower urinary tract dysfunction complex, but with many reversible precipitants.
- Even in the frail elderly, careful assessment can occasionally lead to cure, and substantial improvement in most.
- Bladder diaries are a useful aid to assessment, and guide to management.
- The GP is ideally placed to case-find and co-ordinate assessment. If emptying is satisfactory, initiating management for detrusor overactivity or genuine stress incontinence will often be beneficial.
- Attention to lifestyle factors, reversible precipitants, toilet access issues and review of the medication regimen may result in resolution of incontinence.
- Anticholinergic agents may be useful to treat detrusor overactivity but should be used with care.
- Surgery should be considered for genuine stress incontinence if conservative measures prove unsatisfactory.
- Nocturnal polyuria is a common cause of nocturia, with contributory peripheral oedema often treatable.
- Referral to specialist multidisciplinary services is appropriate when conservative treatment is unsatisfactory.
- Information regarding accessible services is available by ringing the National Continence Helpline on 1800 330 066.

Author's case study

MRS T, 83, lives with her well, carer husband. She has increasingly troublesome urge urinary incontinence and frequency, voiding about six times a day and six times a night. She denies any stress incontinence or voiding difficulty. There is also a history of recurrent UTIs, and persisting dysuria. Hard bowel actions are passed every three days.

She walks slowly with a two-wheeled frame, and her toilet is 15m from her bed. Comorbidities include type 2 diabetes, hypertension and osteoarthritis. Medications include gliclazide, amlodipine, diclofenac, Senokot and temazepam. She enjoys a brandy before bed, and drinks three coffees a day.

She scores 20/30 on the Mini Mental State Examination, has hard stool on rectal examination, has no signs of heart failure, but does have moderate ankle oedema. She also has atrophic vaginitis, urinalysis is positive for glucose, nitrites and leucocytes, and portable ultrasound detects a residual volume of 180mL.

The formulated problem list includes incontinence, probably due to detrusor overactivity, probable nocturnal polyuria, UTI, impaired emptying, atrophic vaginitis, poor diabetic control, constipation, cognitive impairment and ankle oedema. Several medications are also of concern.

Her UTI was treated, constipation resolved and diabetic control improved. Amlodipine was changed to ramipril, diclofenac to paracetamol, and temazepam was stopped. Coffee was changed to decaffeinated and her brandy was diluted. She was provided with a bedside commode, absorbent continence products, and given advice to limit her night-time fluid intake.

Frequency and severity of incontinence improved, but her dysuria persisted and she was voiding five times a day and three times a night. Ankle oedema reduced and the residual volume reduced to 120mL.

She was given below-knee compression stockings for daytime use and was taught how to insert vaginal oestrogen cream twice a week. Implementing these measures resulted in resolution of dysuria, a restoration of daytime continence, and she was voiding 1-2 times a night, with wet beds about once a week. Both she and her husband were very happy with this outcome.

While a complicated case, this patient had a number of reversible problems that older women may experience. Many of these problems interacted to result in significant clinical issues. Attention to all these problems resulted in a very positive clinical outcome, even without thinking about using an anticholinergic agent, which would pose some significant side-effect risks in this particular patient.

References

Available on request from julian.mcallan@reedbusiness.com.au

Online resources

- Continence Foundation of Australia: www.continence.org.au
- *In*contact.org: www.incontact.org
- The Continence Foundation: www.continence-foundation.org.uk
- Continent.org: www.contintent.org/publications
- Association for Continence Advice: www.aca.uk.com

GP's contribution

DR FIONA ROBINSON
Balmain, NSW

Case study

JOAN, 88, lives in a self-care unit in a retirement village. She is frail but still active and plays bridge several times a week. Her history includes four vaginal deliveries, uterine prolapse, chronic constipation and, in recent years, mild chronic heart failure treated with an ACE inhibitor. Her history also reveals she has had UTIs intermittently throughout her adult life, but significantly more in the last few years.

Asking Joan about any incontinence, she admits to wearing pads for the last 10 years, day and night, and further questioning reveals both stress and urge incontinence issues. What most troubles her is she can't sit through a session of bridge without going to the toilet several times.

Lately she has been restricting fluids, in the hope of limiting her urine output, resulting in worse constipation with straining. Her main fluids are tea (six cups a day) and a sherry every evening. She dislikes drinking water.

My suggestions were:

- Keep a urinary diary for a few days to clarify the problems.
- Treat any UTI and discuss managing her atrophic vaginitis (and perhaps her uterine prolapse).
- Discuss her fluid intake and try to find another fluid she enjoys that will not make her incontinence worse, such as cranberry juice, which may also help her UTIs.
- Look at her diet and make sure it includes lots of high-fibre sources to help her constipation, perhaps adding some bulking agents.
- Consider referral to a physiotherapist to help with pelvic floor muscle exercises.

Questions for the author

Is there any evidence that wearing pads day and night increases the risk of UTIs?

Not to my knowledge. Obviously, timely changing of wet pads is appropriate to avoid local skin reactions, including fungal infection.

Should medication be considered for Joan even though she has a mixed picture?

All suggestions are very appropriate. I presume diabetes has been excluded. Joan obviously has good cognition and her comorbidities should not exclude the consideration of any relevant treatment.

Mixed incontinence in younger women is most commonly due to sphincter weakness. In Joan's case, incontinence could be due to sphincter weakness, detrusor overactivity or both. Small daytime voids on the diary could occur with either dysfunction, although good voided volumes at night or first thing in the morning support sphincter weakness as the cause.

It is important to assess the post-void residual volume. If high it could result in a small functional bladder capacity and promote frequency, as well as increasing the risk of recurrent UTIs. If present, it could be due to the cystocoele, when initially a trial of a vaginal ring pessary would be appropriate (these pessaries can unmask or aggravate genuine stress incontinence).

I would also recommend twice-weekly vaginal oestrogen, as this may well reduce the frequency of recurrent UTIs, and may also reduce urgency and frequency in those with atrophic vaginitis. A herbal or low-caffeine tea is also appropriate.

If she empties well and these strategies are insufficient, I would start oxybutynin, initially just 2.5mg one-half to one hour before bridge. Referral to a continence physiotherapist is very reasonable, although the benefits may not be seen early.

General questions for the author

How do you correct or improve detrusor overactivity and underactivity (often a combined problem) with bladder retraining?

With very careful discussion and explanation, those with reasonable cognition and motivation may do well with bladder training to at least reduce the severity of detrusor overactivity symptoms. The principle is to increase bladder capacity by progressively delaying voiding.

As this constitutes a behavioural change it may take time, and certainly requires consistent effort by the patient. However, if the residual volume is moderately elevated because of coexistent detrusor underactivity, this should be done with caution. If the bladder becomes overstretched, detrusor contractility could be further compromised. In this situation, filling to more than 500-700mL is best avoided. Any constipation should be treated or prevented.

How to Treat Quiz

Urinary incontinence in the frail elderly — 25 July 2008

INSTRUCTIONS

Complete this quiz online and fill in the GP evaluation form to earn 2 CPD or PDP points. We no longer accept quizzes by post or fax.

The mark required to obtain points is 80%. Please note that some questions have more than one correct answer.

ONLINE ONLY

www.australiandoctor.com.au/cpd/ for immediate feedback

1. Which TWO statements regarding the epidemiology of urinary incontinence (UI) are correct?

a) Urinary incontinence (UI) is estimated to affect up to 13% of men and 37% of women in Australia
b) Incontinence is a risk factor for early admission to a high-level care facility
c) Incontinence is well reported, with about 65% of people with UI seeking help from a health care professional
d) Incontinence is well screened for in general practice

2. Which TWO statements regarding UI in the elderly are correct?

a) Incontinence is increasingly common and severe as people age
b) Genuine stress incontinence (GSI) is the most common cause of UI in the elderly
c) Older people are more likely to have detrusor overactivity, detrusor underactivity with impaired emptying, and also coexisting mixed dysfunctions
d) Only about 25-30% of elderly people with incontinence can be cured or better managed

3. Which THREE statements regarding precipitants of transient incontinence in the elderly are correct?

a) Constipation can aggravate urge incontinence but may promote retention in those otherwise predisposed
b) Hypercalcaemia may promote urinary retention and lead to overflow incontinence
c) Alpha blockers such as prazosin may unmask or aggravate GSI
d) Agents with calcium-blocking action may promote urinary retention

4. Which TWO statements regarding clinical assessment of an elderly patient with incontinence are correct?

a) Careful questioning about UI symptoms always allows the underlying mechanism of incontinence to be established
b) In addition to UI symptoms, history taking should include inquiry about all medications, as well as alcohol and caffeine intake
c) Physical examination should include abdominal, rectal, pelvic, neurological and cardio-respiratory examination and mobility and cognition assessment
d) Urinary diaries are rarely helpful in the elderly, as they are almost always inaccurate

5. Which TWO statements regarding investigation of elderly patients with UI are correct?

a) Urinary infection should be excluded
b) Measurement of post-void residual volume is only required if overflow incontinence is suspected
c) Haematuria, bladder pain and the sudden onset of, or change in, LUTS not otherwise explained suggests pathology requiring further investigation by cystourethroscopy
d) Uroflowmetry provides the most definitive assessment of lower urinary tract function

6. Which TWO statements regarding management of reversible factors in incontinent elderly patients are correct?

a) No benefit from limiting caffeine and alcohol has been shown in those with urge incontinence
b) There is no evidence for use of cranberry juice in reducing recurrent UTIs
c) If residual volume is elevated, agents with anticholinergic action should be stopped whenever possible
d) Women with GSI should avoid ACE inhibitors if they cause dry cough

7. Which THREE statements regarding management of urge incontinence in the elderly are correct?

a) Bladder training is not effective in older patients with urge incontinence
b) There is evidence of potential efficacy of pharmacotherapy to treat detrusor overactivity in the frail elderly
c) Medications to treat detrusor overactivity should only be used in the elderly if other conservative approaches are inadequate
d) Surgical treatments are rarely appropriate for urge incontinence in the frail elderly unless detrusor overactivity is due to safely reversible outflow obstruction

8. Pat, 72, has had stress incontinence for some years. Which TWO statements regarding the management of GSI in the elderly are correct?

a) Pelvic floor exercises may substantially reduce symptoms
b) Outcomes for those who are self-taught in pelvic floor exercises are as good as for those who receive professional instruction
c) Oestrogen is very effective in reducing GSI
d) Regardless of age, surgical approaches for GSI may be considered when conservative therapies are inadequate

9. Which THREE statements regarding the management of voiding dysfunction are correct?

a) Definitive treatment for outflow obstruction is usually with surgery, although men with benign prostatic obstruction are increasingly being treated initially with pharmacotherapy using alpha-blockade
b) Women with an obstructing cystocoele may benefit from a vaginal ring pessary, although sometimes this will unmask or aggravate pre-existing GSI
c) In patients with detrusor failure, anticholinergics should be avoided if possible
d) When mechanical drainage is necessary, an indwelling catheter is the preferred method

10. Elsie, 80, complains that for years she has been getting up 2-3 times a night to pass urine. Which TWO statements regarding the management of nocturia in the elderly are correct?

a) Nocturnal polyuria is defined as urine production at night of at least 45% of the 24-hour output
b) Treatment of peripheral oedema often helps with nocturia
c) Potentially reversible factors contributing to nocturia include postural hypotension and the fluid drinking pattern
d) Use of anticholinergics specifically for nocturnal polyuria is appropriate if other measures have failed

CPD QUIZ UPDATE

The RACGP now requires that a brief GP evaluation form be completed with every quiz to obtain category 2 CPD or PDP points for the 2008-10 triennium. You can complete this online along with the quiz at **www.australiandoctor.com.au.** Because this is a requirement, we are no longer able to accept the quiz by post or fax. However, we have included the quiz questions here for those who like to prepare the answers before completing the quiz online.

Australian Doctor Education.

HOW TO TREAT Editor: **Dr Wendy Morgan**
Co-ordinator: **Julian McAllan**
Quiz: **Dr Wendy Morgan**

NEXT WEEK Leg oedema is common and often presents a difficult diagnostic dilemma because of the diverse nature of its possible causes. Next week's How To Treat discusses the diagnosis and management of common local causes of this condition. The authors are **Dr Peter R Vale**, interventional cardiovascular physician, department of vascular medicine, St Vincent's Clinic, Darlinghurst, and department of cardiology, Mater Misericordiae Hospital, Crows Nest, NSW; **Dr R Ward-Harvey**, vascular surgery registrar, Royal Prince Alfred Hospital, Camperdown, NSW; and **Dr SR Dubenec**, vascular surgeon, Sydney Endovascular Specialists, Crows Nest, Camperdown Vascular Associates and Royal Prince Alfred Hospital, Camperdown, and Mater Misericordiae Hospital, Crows Nest, NSW.