



National Prescribing Service Limited



Case study 61 report: Achieving bladder control

February 2010

NPS is an independent, non-profit organisation for Quality Use of Medicines
funded by the Australian Government Department of Health and Ageing.

**ABN 61 082 034 393 | Level 7/418A Elizabeth Street Surry Hills 2010 | PO Box 1147 Strawberry Hills 2012
Phone: 02 8217 8700 | Fax: 02 9211 7578 | email: info@nps.org.au | web: www.nps.org.au**

Inside

Case study 61: Achieving bladder control

Scenario and questions page 3

Summary of results page 5

Results in detail

Diagnosing the type of urinary incontinence page 6

Causes of urinary incontinence page 7

Symptom control in urinary incontinence page 8

Management options for urinary incontinence page 9

Commentaries

Dr Colin Walsh and Professor Kate Moore page 11

Dr Glenda Peel page 15

References page 16

The information contained in this material is derived from a critical analysis of a wide range of authoritative evidence. Any treatment decision based on this information should be made in the context of the clinical circumstances of each patient. Declarations of interest have been sought from all commentators.

Copyright: © 2010 National Prescribing Service Limited. This work is copyright. You may download, display print and reproduce this work in unaltered form only (retaining this notice) for non-commercial use either personally or within your organisation. Apart from any such use or otherwise as permitted under the Copyright Act 1968, all rights are reserved. Queries concerning reproduction and rights should be sent to copyright@nps.org.au.

Case study 61 Achieving bladder control

Scenario

Grace is a 70-year-old housewife, who presents to you complaining of 'troubles with the bladder'. She has limited her involvement in social activities following several public incidents involving incontinence and has started to wear pads. She voids eight times a day and five times in the night. She complains of feeling tired and poor sleep quality because she has to get up at night to urinate. Sometimes Grace starts to leak urine on her way to the bathroom. On further questioning she also reveals urine loss when coughing or sneezing.

She has had three uncomplicated vaginal deliveries. She drinks 5 cups of coffee daily and enjoys brandy before bed. Her current medical conditions include hypertension (which is well controlled), osteoarthritis and obesity. Her current medications are amlodipine 5 mg daily, diclofenac 25 mg twice daily and temazepam 10 mg at bedtime. There is no history of surgery, or relevant family history.

On examination Grace is alert and interactive. Her Mini-Mental Status Examination score is 24/30. Her body mass index is 31 kg/m², blood pressure is 130/74 mmHg and pulse is 70 beats per min and regular. She is afebrile. Her gait is steady. Physical examination shows mild vaginal atrophy, positive urinary stress test and hard stools on rectal examination. The remaining physical examination is normal. Urinalysis, blood sugar and thyroid stimulating hormone levels are normal.

1. Based on the symptoms that Grace complains of, specify the type(s) of urinary incontinence she is currently experiencing?

2. List three possible causes of Grace's urinary incontinence?

(i) _____

(ii) _____

(iii) _____

3. a) What changes if any would you consider making to Grace's current medication regimen?

(i) _____

(ii) _____

- b) Identify any changes to Grace's current lifestyle that may improve her urinary incontinence.

(i) _____

(ii) _____

4. a) After following your advice in question 3 above, Grace visits your surgery with continuing symptoms of incontinence. What management plan would you recommend for Grace now?

- non-drug therapy
- drug therapy
- both non-drug and drug therapy

b) Please provide two reasons for your preferred management plan.

- (i) _____
- (ii) _____

c) If you recommend a non-drug therapy in question 4a, please specify the type:

d) If you recommend drug therapy in question 4a, please specify:

Medication	Dose	Frequency	Duration
_____	_____	_____	_____
_____	_____	_____	_____

Summary of results

This report summarises responses from 200 general practitioners.

Case synopsis

Grace, a 70-year-old housewife, complains of 'troubles with the bladder'. She voids 8 times a day and 5 times in the night. Sometimes Grace starts to leak urine on her way to the bathroom. On further questioning she also reveals urine loss when coughing or sneezing. Her medical conditions include hypertension (which is well controlled), osteoarthritis and obesity. Her medications are amlodipine 5 mg daily, diclofenac 25 mg twice daily and temazepam 10 mg at bedtime. On examination Grace is alert and interactive. Her Mini-Mental status examination is normal. Her blood pressure is 130/74 mmHg and pulse is 70 beats per min. (See page 3 for more details.)

Diagnosing the type of urinary incontinence

- Based on the case study, 70% of respondents diagnosed Grace as having mixed urinary incontinence.

Causes of urinary incontinence

- Respondents identified caffeine intake (18%), obesity (17%) and constipation (16%) as the most likely causes of Grace's urinary incontinence.

Symptom control in urinary incontinence

- All respondents indicated they would make changes to Grace's current medication regimen:
 - 22% of respondents would stop or substitute amlodipine
 - 22% of respondents would stop or substitute temazepam
 - 16% of respondents would stop or substitute diclofenac.
- One-third (33%) of respondents would advise Grace to decrease her caffeine intake and 30% of respondents would initiate a weight-loss program to improve her urinary incontinence.

Management plan for urinary incontinence

- When asked to choose a management plan for Grace, 30% would recommend only non-drug-therapy while most respondents (70%) recommended both non-drug and drug therapy:
 - more than half (60%) of respondents listed effective overall symptom reduction as their reason for choosing both drug and non-drug therapy.
 - 28% of respondents listed evidence-based medicine as their reason for choosing only non-drug therapy.
- In terms of non-drug therapy, 41% recommended pelvic floor exercises.
- Of respondents who recommended drug therapy, 46% would chose oxybutynin as an option for drug therapy.

Results in detail

Diagnosing the type of urinary incontinence

Respondents were asked to diagnose the type of urinary incontinence that Grace is experiencing. Table 1 summarises the responses.

Types	% of respondents (n = 50)
Mixed urinary incontinence	70
Stress incontinence	18
Mixed and overflow	4
Urgency incontinence	4
Mixed and overactive bladder	2
Stress and overactive bladder	2



Practice points

- Determine the type of incontinence, as this will influence treatment choice. (For example, anticholinergics can exacerbate incontinence associated with retention of urine).
- Use a bladder diary to assist in the initial assessment of urinary incontinence or overactive bladder and in monitoring effects of treatment.¹ The RACGP clinical practice guideline contains a simple bladder diary (www.racgp.org.au/guidelines/incontinence).
- Encourage women to complete a minimum of 3 days of the bladder diary, covering variations in their usual activities, both working and leisure days.¹
- Exclude neurological conditions, cognitive impairment, enlarged bladder, pelvic mass, prolapse, constipation, urinary tract infection and urinary glucose at patient examination.¹⁻³
- Use urine dipstick tests to detect blood, glucose, protein, leucocytes and nitrites.¹ Urinary frequency is commonly due to urinary tract infection; increased production of urine may occur with hyperglycaemia, hypercalcaemia and diabetes insipidus.⁴

Causes of urinary incontinence

Respondents were asked to list possible causes of Grace's urinary incontinence. Table 2 summarises the responses.

Causes	% of respondents (n = 50)*
Caffeine intake	18
Obesity	17
Constipation	16
Childbirth	10
Weak pelvic floor muscles	10
Bladder/detrusor muscles overactivity/instability	9
Alcohol intake	5
Atrophic vaginitis	5
Other [†]	6
Medication	4

*Respondents may have more than one response.

†Includes age, complications of diabetes, postmenopausal symptoms, urinary tract infections, prolapse.



Practice points

- Identify and address any factors that may exacerbate urinary incontinence or stimulate an overactive bladder.⁵
- Ask about medicine use to help identify incontinence caused or exacerbated by medicines. Go to www.nps.org.au/news_66 for more information on medicines that may cause or exacerbate incontinence.
- Consider the contribution of environmental factors, reduced mobility, impaired dexterity and cognitive impairment in preventing people from getting to or using the toilet.
- Be aware of oral hormone replacement therapy worsening symptoms of urinary incontinence in postmenopausal women.⁶

Symptom control in urinary incontinence

Tables 3 and 4 summarise respondents' recommendation for changes to Grace's medication regimen and lifestyle to improve her urinary incontinence.

Table 3: Changes to Grace's medication regimen	
Medication changes	% of respondents (n = 50)*
Cease/substitute amlodipine	22
Cease/ substitute temazepam	22
Cease/ substitute diclofenac	16
Other [†]	12
Initiate topical oestrogen	10
Reduce temazepam	7
Review medicines (i.e. timing, dosing and appropriateness)	6
Initiate laxatives	5

*Respondents may have more than one response

†Includes reduce amlodipine dose, reduce diclofenac dose and initiate drug therapy for incontinence.

Table 4: Modifying lifestyle to minimise symptoms	
Lifestyle changes	% of respondents (n = 50)*
Modify caffeine consumption	33
Initiate weight-loss programs	30
Modify alcohol consumption	16
Treat constipation	10
Train pelvic floor muscles	6
Other [†]	5

*Respondents may have more than one response.

†Includes modify diet, reduce fluid consumption, no changes required.



Practice points

- Direct treatment towards the predominant symptoms in mixed urinary incontinence.¹
- Encourage weight loss for overweight and obese women with incontinence.⁷
- Reduce caffeine intake to decrease urinary urgency and frequency.^{1,3}
- Advise patients to drink an adequate amount of fluid 6–8 glasses each day.⁵ There is no conclusive evidence that restricting fluid intake reduces urinary incontinence episodes.^{8–10}

Management options for urinary incontinence

While no respondent would recommend drug therapy only, 30% recommended non-drug-therapy only; 70% of respondents recommended the combination of both non-drug and drug therapy for Grace. Table 5 summarises the reasons for respondents' choice of management plan.

Table 5: Respondents' reasons for choice of management plan	
Reasons for choosing both drug and non-drug therapy	% of respondents (n = 35)*
Effective overall symptom reduction	60
Quicker rate of improvement	13
Evidence-based practice	5
Involvement of the patient in their own management	5
Respecting the patient's preference	4
Fewer compliance issues compared with non-drug therapy	3
Lower relapse rate / sustained benefit	2
Other [†]	8
Reasons for choosing non-drug therapy only	% of respondents (n = 15)*
Evidence-based practice	28
Effective overall symptom reduction	23
Safety profile	22
Involvement of the patient in their own management	11
Lower relapse rate / sustained benefit	7
Lower cost to patient	4
Other [‡]	5

[†]Includes respondent's preference, less time consuming, more flexibility.

[‡]Includes easier management for carer, better patient compliance.



Practice points

- Use physical and behavioural therapies first to promote self-management.
- Consider adding an anticholinergic for urge incontinence that does not respond to physical or behavioural therapies alone.

If anticholinergics are used for urge incontinence:

- Continue bladder training.
- Counsel patients about the potential adverse effects of anticholinergics⁵ (ie, dry mouth and constipation) and advice on management strategies.
- Use the lowest possible dose of the anticholinergic agent and monitor for cognitive adverse effects, especially in the frail elderly people.⁵
- Start with a 4–6-week trial of an anticholinergic.^{5,11}
- Reassess risk versus benefits at 6 months; evaluate whether there has been a response from the patient during the trial period and determine if continued treatment is required.⁵

Table 6 summarises the types of non-drug therapy recommended by respondents who chose non-drug therapy for managing Grace’s continuing symptoms of incontinence.

Table 6: Recommended non-drug therapy	
Types of non-drug therapy	% of respondents (n = 50)*
Pelvic floor exercises	41
Bladder training	16
Address exacerbating factors (i.e. alcohol consumption, caffeine intake, constipation, obesity)	16
Referral to physiotherapist	7
Referral to continence support clinic	6
Referral to surgical specialist	5
Referral to other medical specialist	4
Prompted voiding	2
Other [†]	2

* Respondents may have more than one response

[†] Includes biofeedback, continence pads, topical oestrogen.



Practice points

- Consider bladder training first for women with urge incontinence or mixed incontinence.¹⁻³
- Recommend pelvic floor exercises as initial treatment for stress incontinence or mixed incontinence.¹⁻³
- Consider pelvic floor exercises as part of the treatment plan for urge incontinence.^{2,3}

Of the 70% of respondents who chose drug therapy as part of the management plan, 25% recommended the use of their choice of drug therapy for more than 6 months; 32% would use for less than 1 month, and 10% of respondents did not specify the duration of therapy. Table 7 summarises the respondents’ choice of therapy.

Table 7: Recommended drug therapy	
Drug therapy	% of respondents (n = 35)*
Oxybutynin	46
Topical oestrogen	22
Solifenacin	16
Amitriptyline	8
Propantheline	3
Laxatives	3
Other [†]	2

* Respondents may have more than one response

[†] Includes complementary medicines and perindopril.



Practice points

- Avoid anticholinergic agents (i.e. amitriptyline, imipramine, oxybutynin) in people with dementia and minimise the risk of cognitive decline and delirium.
- Minimise adverse effects such as CNS toxicity and start on the lower doses (e.g. oxybutynin 2.5 mg twice daily may be better tolerated and as effective as the higher recommended dose)⁴.

Commentary 1

Key points

- With urinary incontinence, treatment can be successfully initiated in primary care without the need for complex investigations or specialist referral.
- All women presenting with urinary incontinence must have urinary tract infection (UTI) excluded, preferably by formal culture and sensitivity of a midstream urine sample.
- Lifestyle modification (weight loss, reduced caffeine intake) with supervised pelvic floor muscle training is the mainstay of treatment for stress incontinence, with surgery reserved for poor responders only.
- Bladder training, with anticholinergic medication added as necessary, is the cornerstone of treatment for women with overactive bladder.

Case scenario

Unfortunately the patient scenario described here is quite common. Grace's urinary incontinence is amenable to several treatment modalities yet, unmanaged, has evolved to a stage where it is limiting her social activities. Given her complaints of daytime frequency (×8) and nocturia (×5), she clearly suffers from the overactive bladder (OAB) syndrome.* She is also symptomatic of stress urinary incontinence (SUI), or simply stress incontinence,† supported by the positive cough stress test on examination. This gives her a diagnosis of mixed urinary incontinence, as per 70% of respondents.

However, there are other causes for nocturia and it would be helpful to know if she

experiences urgency ('a sudden compelling desire to void that is difficult to defer'¹) by day, which is the cardinal symptom of OAB. Women who have experienced embarrassing urinary 'accidents' often begin to void more often during the day, not because of a feeling of urgency, but 'just in case' — to keep their bladder empty. The symptom of urgency helps distinguish true OAB from this learned behavioural response.

Occasionally, nocturia secondary to fluid redistribution in the supine position is seen in women with peripheral oedema. This increased fluid load to the kidneys leads to nocturnal polyuria and such women pass more than one-third of their daily urine output at night.

Grace's treatment with amlodipine increases the risk of peripheral oedema. A 3-day frequency-volume chart (bladder diary), noting total fluid and caffeine intake, volumes voided and associated urgency or leakage would be helpful in investigating this further.

The possibility of obstructive sleep apnoea (OSA), which causes nocturia either from disordered sleep breathing or via release of atrial natriuretic peptide, should be considered, even in women with daytime OAB symptoms.² A history of snoring, fatigue, sudden waking with a sensation of choking and hypertension are established clinical features of OSA.

Finally, there is little to suggest that Grace has overflow incontinence. This is not common in women but is usually seen secondary to an atonic bladder (neurological disease, multiple sclerosis [MS], autonomic neuropathy) or outflow obstruction (previous continence surgery or severe pelvic organ prolapse). Recurrent UTI is a common presenting symptom in such cases. A simple bladder scan gives rapid assessment of post-void residual volume and can be ordered from any radiology department.

*Urinary urgency, usually accompanied by frequency and nocturia, with or without urinary incontinence, in the absence of UTI or other obvious pathology.¹

†The symptom of involuntary leakage during effort or exertion or during sneezing or coughing¹

Causes of urinary incontinence

Stress incontinence

The aetiology of stress incontinence is multifactorial. The strongest risk factors in younger women are pregnancy and childbirth, but several large studies have found that parity is no longer an independent risk factor for urinary incontinence in postmenopausal women.^{3,4} It is thought that age-related changes and comorbid conditions outweigh the impact of previous pregnancy in these women.

Obesity is a major risk factor for stress incontinence, and a dose–response-type relationship between body mass index (BMI) and risk of stress leakage has been shown.³ Compared with those with BMI < 25, women with BMI of 30–34 and > 40 have three times and five times the risk, respectively. Recently, weight loss has been shown to be effective in the treatment of stress incontinence.

Anecdotally, we believe that truncal obesity places women at particular risk and we regularly order a 2-hour glucose tolerance test with serum insulin levels for such women. Women found to have insulin resistance syndrome will often report difficulty in losing abdominal weight even with exercise, and insulin-sensitisation treatment with metformin may benefit such patients.

Constipation (correctly identified by 16% of respondents) is a common and potentially modifiable risk factor for stress incontinence. It is also a major factor in the pathogenesis of pelvic organ prolapse and should be addressed promptly with dietary advice, adequate fluid intake (2000–2500 mL/day) and, if necessary, medication.

Respiratory disease, though not relevant to the case outlined here, is another frequent cause for worsening stress incontinence, and treatment of chronic cough must be optimised, if necessary with referral to a respiratory physician.

Overactive bladder / detrusor overactivity

The aetiology of OAB remains uncertain. UTI must be excluded in all patients presenting with OAB symptoms, ideally with formal culture and sensitivity of a midstream specimen. There are subgroups of women with

detrusor overactivity secondary to neurological disease (Parkinson's disease, MS, cerebrovascular accident, etc) or after continence surgery, but most cases are idiopathic.

Excess caffeine and alcohol (as noted by 18% of respondents) lead to polyuria and exacerbates incontinence, and patients must be educated in this regard.

Only 5% noted atrophic vaginitis, which is commonly seen in postmenopausal women. Treatment with regular topical oestrogen cream (eg, ovestin thrice-weekly) improves irritative bladder symptoms and decreases the incidence of UTIs, although only 10% of respondents here suggested initiating topical oestrogen therapy. Conversely, Cochrane evidence tells us that systemic hormone replacement therapy (HRT) worsens urinary incontinence, and consideration should be given to stopping oral or transdermal HRT on an individualised basis.⁵

Management of stress incontinence

For most women with urinary incontinence, a reasonably accurate diagnosis can be made from the history and examination alone without the need for complex investigations. In most cases, treatment can be initiated immediately in a primary care setting without the need for specialist referral.

Lifestyle advice is an integral part of first-line management, and 30% of respondents correctly identified the need to modify caffeine intake and encourage weight loss.

Management of constipation is also important. We generally recommend use of a bulking agent (Metamucil, Movicol, psyllium husks) dissolved in a large glass of water, with increased fluid intake and dietary fruit and vegetables. Stool softeners (lactulose, Agarol) may be added as required. We prefer to avoid prolonged use of Senekot, which stimulates peristalsis, as it can induce a refractory state. If there is obvious stool trapping, glycine suppositories may be beneficial.

Only 6% included pelvic floor muscle training (PFMT) in their management plan. Supervised PFMT, ideally under the guidance of a pelvic floor physiotherapist or nurse continence advisor, is the cornerstone of first-line

management for women with stress and mixed incontinence.⁶ Women should be told that the pelvic floor requires 12 weeks of supervised daily exercises before efficacy can be assessed. For women with stress incontinence and for whom PFMT fails, surgery is generally the next step. The tension-free vaginal tape (TVT) procedure is currently the surgical gold standard, with an 80-85% cure rate. However, surgery for stress incontinence may worsen OAB symptoms so it is important that management of OAB is optimised in women with mixed incontinence before surgical intervention is contemplated.

Traditionally, stress incontinence is not amenable to medical therapy. Duloxetine, a serotonin–noradrenalin reuptake inhibitor, is approved in Europe in the treatment of stress incontinence but is not currently licensed in Australia for this indication. Finally, prazosin is an adrenergic antagonist that is not a treatment for stress incontinence — indeed this medicine can significantly worsen stress leakage or provoke it de novo.

Management of overactive bladder

A diagnosis of OAB can only be made if UTI has been excluded. For women with idiopathic OAB, we have no absolute ‘cure’; management is aimed at improving symptoms and quality of life.⁷ The quantity and quality of daily fluid intake should be assessed and appropriate advice offered.

Bladder training is the mainstay of treatment for OAB, although it was only mentioned by a minority of respondents here. It aims to address the behavioural habits that women with OAB develop whereby they rush to the toilet whenever they feel the urge. Additionally, women may pass water prophylactically when there is no urge, such as just before they go out. Although women feel they are helping the situation by keeping their bladder as empty as possible, with time the bladder capacity shrinks and their symptoms are compounded. A

frequency–volume chart is very helpful in identifying this pattern patient. We encourage women to void only if it has been more than 2 hours since their last toilet visit; if they get a strong urge before, they must contract their pelvic floor muscle, sit down and concentrate on holding on for 1–2 minutes. Certainly, these women should not be voiding on leaving the house to go shopping ‘just in case’.

For women who are significantly troubled, we have a low threshold for adding in anticholinergic medication. However, it must be emphasised that medicine is not a cure or substitute for bladder training; indeed the aim of medicine is to improve urgency so the patient can practice bladder training more effectively. Absolute contraindications to these medications are narrow-angle glaucoma, gastrointestinal tract obstruction and acute urinary retention, although they may be safely used in open-angle glaucoma. The most common side effect is dry mouth, followed by constipation and dry eyes. As such, therapy is usually started at a low dose, titrating up against symptoms as required.

We continue to use oral oxybutinin as our first-line agent, as it is effective and affordable. Newer agents, such as solifenacin (Vesicare) and darifenacin (Enablex) have improved specificity for the M₃ receptor and reduced incidence of troublesome side effects but are more expensive. The oxybutinin patch (Oxytrol) is a good alternative in women who experience severe dry mouth and is now available on the PBS.

Imipramine is a tricyclic antidepressant with some anticholinergic effect. It may be used in low dose (10–25 mg at night) specifically to improve nocturia, but caution should be exercised in older patients, in whom anticholinergic effects and orthostatic hypotension may be pronounced.

Propantheline is an older medicine with multiple side effects, which should not be used routinely in the treatment of OAB.

References

1. Haylen BT, de Ridder D, Freeman RM, et al. An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for female pelvic floor dysfunction. *Neurourol Urodyn* 2010;29:4–20.
2. Kemmer H. The relationship between sleep apnea and overactive bladder. *Curr Urol Rep* 2009;10:448–50.
3. Brown JS, Grady D, Ouslander JG, et al. Prevalence of urinary incontinence and associated risk factors in postmenopausal women. *Obstet Gynecol* 1999;94:66–70.
4. Rortveit G; Hannestad YS; Daltveit AK; Hunskaar S. Age- and type-dependent effects of parity on urinary incontinence: the Norwegian EPINCONT study. *Obstet Gynecol* 2001;98:1004–10.
5. Cody JD, Richardson K, Moehrer B, et al. Oestrogen therapy for urinary incontinence in postmenopausal women. *Cochrane Database Syst Rev* 2009(4):CD001405.
6. Dumoulin C, Hay-Smith J. Pelvic floor muscle training versus no treatment, or inactive control treatments, for urinary incontinence in women. *Cochrane Database Syst Rev* 2010(1):CD005654.
7. Morris AR, Westbrook JI, Moore KH. A longitudinal study over 5 to 10 years of clinical outcomes in women with idiopathic detrusor overactivity. *BJOG* 2008;115:239–46.

Key points

- Patients are often not forthcoming about bladder problems. Health checks are an ideal opportunity to check bladder control issues. Any woman or man over 40 and any woman who has had children should be routinely questioned as to bladder function.
- Patients should be reassured that urinary problems are common with ageing and that there are effective treatments. Medication and surgery may not be necessary.
- Lifestyle, exercise and diet are essential factors in the management.
- Patients benefit from a clear management plan and regular review of progress.

Issues to be considered with Grace

Grace presents with a picture of urge and stress urinary incontinence. She has several factors predisposing her to these conditions:

- she is postmenopausal and has had previous vaginal births, which may lead to pelvic floor weakness
- she may have had poor bladder training in childhood
- she is obese
- she drinks caffeine drinks during the day and an alcohol drink before bed
- she has constipation.

Urge incontinence, urgency, nocturia and urinary frequency are often due to detrusor overactivity and may respond well to bladder retraining. Information is available at www.continence.org.au.

This may involve keeping and completing a bladder diary for 3 days; increasing bladder capacity, ensuring 8-10 glasses fluid per day (excluding caffeine and alcohol) and pelvic floor exercises. The patient may benefit from referral to a physiotherapist specialising in this area.

It is worthwhile to trial a course of vaginal oestrogens to aid pelvic floor tone.

Although the urinalysis was negative, an initial midstream urine culture and sensitivity is indicated to exclude UTI.

If the above methods do not produce a satisfactory outcome, a trial of anticholinergic drugs can increase bladder tone. Oxybutynin is

such a drug. If Grace requires treatment for depression or insomnia, it may be worth considering use of a tricyclic antidepressant (eg, amitriptyline) instead of oxybutynin. These drugs can cause constipation so it is essential that Grace takes measures to soften her stool and to avoid straining. Increasing dietary fibre initially is useful.

It may be appropriate to refer the patient for urodynamics studies to more accurately assess the problem.

Grace also has some general health issues that need to be addressed. She is obese and therefore requires advice about weight loss. She may require referral to a dietitian. This will benefit not only her bladder but her cardiovascular and musculoskeletal systems.

Her blood pressure is well controlled on her current medication and, although calcium-channel blockers are known to sometimes cause constipation, it is better trying to increase dietary fibre as discussed above.

It is important to consider other causes of constipation and investigate as necessary. Investigations may include faecal occult blood test, colonoscopy and pelvic ultrasound.

Grace needs some additional blood tests:

- full blood count
- ferritin
- erythrocyte sedimentation rate to assess fatigue
- serum calcium to exclude hypercalcaemia as a cause of constipation
- electrolytes, urea and creatinine to check renal function and exclude diabetes insipidus.

Grace has limited her social activities, she is tired, has poor sleep quality and is anxious about the episodes of incontinence. She therefore requires regular review of her mental health status.

Involving Grace actively in the management will improve compliance.

After implementing these lifestyle, physical and behavioural changes, Grace should be reviewed. If there is no or insufficient improvement, it may be necessary to consider medicine changes. Stop or modify medicines one at a time to assess effect.

References

1. National Institute for Health and Clinical Excellence. Urinary incontinence: the management of urinary incontinence in women. 2006. <http://guidance.nice.org.uk/CG40> (accessed 10 August 2009).
2. Scottish Intercollegiate Guidelines Network. Management of urinary incontinence in primary care: A national clinical guideline. 2004. <http://www.sign.ac.uk> (accessed 6 August 2009).
3. The Royal Australian College of General Practitioners. Managing incontinence in general practice: Clinical practice guidelines. 2002. <http://www.racgp.org.au/guidelines> (accessed 6 August 2009).
4. Palliative care expert group. Therapeutic Guidelines: Palliative Care. Melbourne: Therapeutic Guidelines Ltd, 2005.
5. National Health Service Clinical Knowledge Summaries. Incontinence — urinary, in women. 2009. <http://www.cks.nhs.uk/home> (accessed 10 August 2009).
6. Cody JD, Richardson K, Moehrer B, et al. Oestrogen therapy for urinary incontinence in post-menopausal women. *Cochrane Database Syst Rev* 2009;CD001405.
7. Subak LL, Wing R, West DS, et al. Weight loss to treat urinary incontinence in overweight and obese women. *N Engl J Med* 2009;360:481–90.
8. Dowd TT, Campbell JM, Jones JA. Fluid intake and urinary incontinence in older community-dwelling women. *J Community Health Nurs* 1996;13:179–86.
9. Hashim H, Abrams P. How should patients with an overactive bladder manipulate their fluid intake? *BJU Int* 2008;102:62–6.
10. Swithinbank L, Hashim H, Abrams P. The effect of fluid intake on urinary symptoms in women. *J Urol* 2005;174:187–9.
11. Rossi S, ed. *Australian Medicines Handbook*. Adelaide: Australian Medicines Handbook Pty Ltd, 2009.
12. Yap P, Tan D. Urinary incontinence in dementia — a practical approach. *Aust Fam Physician* 2006;35:237–41.