

Management of urinary incontinence in frail elderly women

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Abstract

Urinary incontinence (UI) is defined by the International Continence Society as any involuntary leakage of urine. It is a common clinical problem, and its incidence increases with age. It is a particular problem in the frail elderly, who can sometimes pose a diagnostic and therapeutic challenge by virtue of their complexity. UI is a major cause of disability and dependency and adversely affects the psychological and physical health of the older person. However, treatment can lead to significant improvements.

Keywords cognitive impairment; elderly; frail; urinary incontinence

Introduction

Urinary incontinence (UI) is defined by the International Continence Society as any involuntary leakage of urine. It is a common clinical problem, and incidence increases with age. Estimations of prevalence vary according to the definitions used, but is thought to be around 15–30% in the ambulant community dwelling elderly, rising to between 50 and 80% in those in long-term care.

Normal ageing is not a cause of urinary incontinence, although age related changes in lower urinary tract function can predispose older people to UI which is then exacerbated by comorbidities. UI is a major cause of disability and dependency, significantly increasing the risk of care home placement and adversely affecting the psychological, physical and social well being of older people. It also predisposes to carer negativity and stress, which itself is a major factor in placement for institutional care.

The frail elderly have traditionally been under treated due to fears over the side effects of the medications, under reporting of symptoms, and low expectations of treatment outcomes by both patients and doctors. However, significant improvements can be achieved with correct assessment and treatment. The following forms a framework to aid the management of this challenging group of patients.

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Prevalence

A 1993 MORI poll in the UK showed a lifetime prevalence of UI at all ages of 6.6% in men, and 14% in women with approximately 3.9 million sufferers in the UK alone. Prevalence continues to increase as a consequence of an ageing population with resource implications for the NHS and social care. The true prevalence of UI is difficult to accurately estimate as many sufferers never seek treatment due to embarrassment, lack of awareness of treatment options, and the myth that UI is a normal consequence of ageing.

Estimations also vary widely according to the definition used, but a review of the literature suggests a prevalence of 15–30% for community dwelling older people. All studies report a higher incidence of UI among care home residents in the range of 50–80% because UI is associated with older age, frailty, cognitive impairment and limited mobility leading to a greater level of dependency. All of these factors are more prevalent amongst those in long-term care.

The severity of UI has been defined in various ways, but mostly according to the frequency of urine loss. The general prevalence of severe urinary incontinence (weekly or more) in all age groups is thought to be between 3 and 7%. The Newcastle 85+ cohort study in 2009 reported an overall incidence of severe UI in 21%, commoner in women.

Associated factors

UI is associated with other co-morbidities and can contribute significantly towards declining functional status and poor quality of life. It is also associated with substantially increased risk of admission to 24 hour care. Incontinence in this context may be functional and treatment should be modified accordingly. A list of some of the major conditions contributing to UI can be found in [Table 1](#). Appropriate treatment of the conditions listed is a necessary part of continence management in this patient group.

The more common medications associated with exacerbations of UI are listed in [Box 1](#). In particular diuretics increase the volume of urine produced. Changing to a loop diuretic with a longer half-life such as torasemide can make some improvement in incontinence associated with diuretic timing.

Medication review is therefore essential with particular reference to drugs that contribute towards incomplete bladder emptying or cause constipation.

Conditions caused by urinary incontinence

UI is generally thought to be a predictor of adverse outcomes in older people. Those with UI have a greater mortality, but generally also have more significant comorbidities, which may partly explain this association. There is no universally agreed definition of frailty but it is thought of as a multi-system syndrome of impaired mobility, fatigue, muscle strength, and balance. Common conditions caused by UI are listed in [Table 2](#).

How is continence maintained?

Maintaining continence is a complex process, and depends on:

1. An intact bladder, sphincter, and pelvic floor function with normal innervation,
2. An ability to communicate the need to go to the toilet if immobile,

Conditions contributing to urinary incontinence

Condition	Type of Incontinence	Notes
Dementia	Urge incontinence Functional incontinence	Causes UI by variety of mechanisms: a) Decreased motivation and initiative to go to the toilet b) Social disinhibition c) Decreased executive function d) Immobility or gait disturbance e) Severe autonomic failure (Lewy Body Dementia)
Stroke	Urge incontinence Functional incontinence Occasionally urinary retention	Varying effects on bladder and bowel function, mobility and functional ability to toilet. UI post stroke often improves over time. Poor prognostic indicator for those in whom it persists
Parkinson's Disease	Functional incontinence Urge incontinence	Also autonomic failure in "Parkinson's Plus" syndromes
Delirium		Delirium can be associated with detrusor underactivity or bladder outflow obstruction causing urinary retention ("cystocerebral syndrome") as well as infection causing UI
Normal Pressure Hydrocephalus		Incontinence, gait and cognitive deficits Potentially reversible with VP shunt
Anxiety and Depression		Can result from incontinence Less motivation to stay continent Can also cause mildly impaired cognition
Arthritis	Functional incontinence Urge incontinence	
Diabetes	Functional incontinence	Polyuria in poorly controlled DM Peripheral neuropathy Autonomic neuropathy Increased susceptibility to UTI

Table 1 (continued)

Condition	Type of Incontinence	Notes
Peripheral oedema (Heart failure, venous insufficiency, medications)	Nocturia Nocturnal polyuria Nocturnal enuresis	Reabsorption of peripheral oedema causing increased circulating volume and increased nocturnal urine production. Increased ANP levels secondary to myocardial stretch from increased circulating volume may also contribute to increased nocturnal urine production
Constipation and faecal impaction	Combined faecal and urinary incontinence Urge incontinence Urinary retention	Outflow tract obstruction causing urge incontinence from detrusor overactivity Straining can result in weakened pelvic floor muscles
COPD	Stress incontinence	Cough can exacerbate stress incontinence

Table 1

3. Adequate cognition to know how to find the toilet and to keep continence until on the toilet
4. Sufficient mobility and manual dexterity to remove clothing,
5. Ability to voluntarily initiate micturition at the appropriate time.

The frontal cortex is responsible for voluntary control of micturition with the sensation of a full bladder as well as external sphincter contraction and relaxation. The motor cortex controls bladder motor function, as well as the ability to mobilize to the toilet, bypassing any environmental hazards en route. All of these processes can be affected by inter-current illness.

Drugs that cause or exacerbate urinary incontinence

- Alcohol
- Alpha adrenergic agonists e.g. midodrine, pseudoephedrine
- Alpha blockers e.g. doxazosin, tamsulosin
- ACE inhibitors e.g. ramipril, lisinopril
- Caffeine
- Cholinesterase inhibitors e.g. donepezil, rivastigmine
- Diuretics e.g. bendrofluazide, furosemide, bumetanide
- Anticholinergic drugs
- Oral oestrogen therapies e.g. HRT
- Opioids e.g. codeine, morphine, tramadol
- Sedatives and hypnotics e.g. benzodiazepines, zopiclone.

Box 1

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