Urinary incontinence in older people: an overview

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Abstract

Lower urinary tracts symptoms (LUTS) and urinary incontinence (UI), defined as involuntary loss of urine, are very common in the general population and increase in prevalence in late life. All LUTS have a considerable impact on morbidity and quality of life. Urinary incontinence is seldom discussed by patients, many of whom delay seeking care. Despite increasing evidence for effective management, older people are frequently neither assessed nor treated. This article discusses the assessment and management of the main subtypes of incontinence likely to be encountered in generalist practice for both the physiologically fit and frail older person.

Keywords antimuscarinic; lower urinary tract symptoms; overactive bladder; polypharmacy; urinary incontinence; urinary urgency

Introduction

Lower urinary tracts symptoms (LUTS) are common in both men and women and can be classified as *storage*, *voiding* or *post-micturition* (Table 1). In the EPIC study, the prevalence of urinary incontinence (UI) increased from 2.4% in men under 39 years to 10.4% in those over 60 years and in women, from 7.3% to 19.3%,[1] respectively, and longitudinal studies illustrate accumulation of symptoms with age.[2,3] UI in older people is usually multifactorial. Physiological changes in lower urinary tract function (Table 2), combined with the effects of lower urinary tract disease, other common co-morbidities and the effects of medication, make many older people less likely to be able to successfully toilet. However, despite the high prevalence and significant functional impact of LUTS, including UI, older people in the UK do not receive assessment and treatment comparable to younger people.[4]

The predominant symptom complex leading to UI in later life – overactive bladder or urgency-frequency syndrome – is significantly influenced by cerebral pathology demonstrable in functional magnetic resonance (MR) scanning.[5,6] Recent research speculates an aetiological link between these MR changes, white matter hyperintensity lesions and several of the late life 'geriatric syndromes'.[7]

Assessment and management of incontinence in older people

The pathological condition causing UI can be diagnosed from the history alone in most older people. A full medication history is mandatory and the impact of the condition on the patient's quality of life, the expectations of the patient and carer(s), and the patient's likely life expectancy should all be taken into account. Physical examination can provide support for specific diagnoses, exclude other diseases that may mimic or confound the picture and allows the assessment of co-morbidities that may impair the ability of an older person to maintain continence and successfully toilet.[8]

Symptom classification in urinary incontinence (UI)

Storage	Voiding	Post-micturition
Frequency (>8)	Hesitancy	Terminal dribble
Nocturia (>2)	Straining	Incomplete emptying
Urgency	Poor stream	Post-micturition dribble
Urgency incontinence	Intermittent stream	
Exertional 'stress' UI	Splitting of stream	

Table 1

Co-morbidities

In a large population-based study, UI (defined as use of pads) was independently associated with one or more other co-morbidities (cognitive impairment, injurious falls, dizziness, vision impairment, hearing impairment) in 60% of patients, two or more in 29% and three or more in 13%.[9] Lower urinary tracts symptoms (LUTS) (e.g. nocturia, urinary urgency and urgency incontinence, mixed incontinence) are also significantly associated with an increased risk of falls. Hypertension, congestive heart failure, arthritis, depression and anxiety were all associated with a higher prevalence of UI and a strong linear correlation was found between the prevalence of UI and the number of co-morbidities.[10]

Co-morbidities can affect continence through multiple mechanisms. For example, diabetes mellitus, present in approximately 15–20% of the frail old, may cause UI by associated LUTS dysfunction (detrusor overactivity, overactive bladder, cystopathy and incomplete bladder emptying) or by poor diabetic control (hyperglycaemia causing osmotic diuresis and polyuria). Neurological conditions commonly associated with UI include stroke, either dementia of the Alzheimer's type (AD) or multi-infarct dementia (or a combination of the two), diffuse Lewy body disease (DLB) and Parkinson's disease. In AD, UI is often associated with severe cognitive decline, whereas in DLB it

Physiological changes in lower urinary tract function in association with age

Decreased	Increased
Bladder capacity	Urinary frequency
Sensation of filling	Prevalence of post-void residual volumes
Speed of contraction of detrusor	Outflow tract obstruction (♂)
Pelvic floor muscle bulk	
Sphincteric 'resistance'	
Urinary flow rate	

Table 2

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typically precedes severe cognitive impairment.[11] Normal pressure hydrocephalus should be considered in any elderly person who presents with the new onset of UI in association with gait disturbance and cognitive impairment. Depression in older persons with UI may be underdiagnosed and undertreated and may add to the burden of depression by decreasing life satisfaction and self-rated health.

Polypharmacy, medications and incontinence

Polypharmacy (see *Practical advice for prescribing in old age* on pages 9–12 of this issue) is common in the old and some medications may predispose an older person to UI. Many medications can theoretically affect continence (Table 3), but there is little published evidence to indicate the prevalence of such problems. Evidence does exist for diuretics, prostaglandin inhibitors, α_1-adrenoceptor blockers, selective serotonin reuptake inhibitors, cholinesterase inhibitors and systemic hormone replacement therapy.[12–19] Medication lists should always be reviewed and potentially implicated medications discontinued for a trial period. Prescribers should also be aware that many drugs have antimuscarinic effects, of the consequent total 'antimuscarinic burden' on the patient,[20] and of the potential interaction between antimuscarinic drugs and cholinesterase inhibitors, used in the treatment of cognitive impairment.

Examination and investigation

The clinician should look for evidence of urogenital atrophy, vaginal or rectal prolapse, prostatic enlargement, faecal loading or a palpable bladder. Dipstick urinalysis and an ultrasound scan should be undertaken in all men and women complaining of voiding symptoms. An assessment of mobility, dexterity, cognition and examination for relevant neurological conditions (e.g. Parkinson's disease, multi-system atrophy, stroke, spinal stenosis, cauda equina syndrome) should be performed. Simply asking the patient to go to the lavatory, empty their bladder, return, undress, and get onto the examination couch will provide much relevant functional and neurological information.

Initial management

Although evidence of the efficacy of many treatments of UI in older adults is limited, a supervised trial of treatment is preferable to withholding treatment. Interventions applicable to all subtypes of UI are fluid management – avoiding dehydration but not drinking excessively – avoiding alcohol and, if identified as a precipitant, caffeine restriction.

In **overactive bladder** (urgency-frequency syndrome; see Table 4 for main diagnostic subtypes and characteristics), bladder retraining is the mainstay of conservative management. Pelvic floor muscle therapy (PFMT) can be employed in older women for **stress and mixed UI** although benefit appears less than that seen in younger women. A 3-month, supervised course, tailored to each patient's ability is the minimum requirement. Pelvic floor contractions can also help urinary urgency. For those with voiding inefficiency (**significant post-void residual**), double voiding techniques can have some beneficial effect.

Conservative management in frail older people

Behavioural interventions, which all require active caregiver participation and are used predominantly in frail adults, including those with cognitive impairment, include:

Medications with potential to worsen urinary incontinence (UI)

Medication	Potential or actual effect
α-adrenoceptor antagonists	Decrease smooth muscle tone in the urethra and may precipitate stress UI in women
Angiotensin-converting enzyme (ACE) inhibitors	Cause cough that can exacerbate stress UI
Agents with antimuscarinic properties	May cause ineffective voiding and constipation that can contribute to incontinence. May cause cognitive impairment and reduce effective toileting ability (high dose, cognitively at risk)
Calcium channel blockers	May cause constipation (verapamil) that can contribute to incontinence. May cause dependent oedema (amlodipine, nifedipine) that can contribute to nocturnal polyuria
Cholinesterase inhibitors	Can precipitate urgency incontinence through cholinergic action
Diuretics	Cause diuresis and precipitate incontinence
Lithium	Polyuria due to diabetes insipidus-like state
Opioid analgesics	May cause constipation, confusion, and immobility – all of which can contribute to incontinence
Psychotropic drugs	May cause confusion and impaired mobility and precipitate incontinence
Sedatives, hypnotics, antipsychotics	Most have anticholinergic effects
H_1-receptor antagonists	
Selective serotonin reuptake inhibitors (sertraline identified)	Increase cholinergic transmission and may lead to urgency UI
Gabapentin	Can cause oedema, leading to polyuria while supine, and exacerbate nocturia and night-time incontinence
Glitazones	
Non-steroidal anti-inflammatory agents	

Table 3