Urinary Incontinence in Geriatric Patients

Dr. Edward MF Leung  FRCP
Consultant Geriatrician, United Christian Hospital

Introduction

Urinary incontinence is the one of the 4 ‘I’s in Geriatrics. Urinary incontinence is a common symptom amongst older people and is one of the main causes of institutionalisation for older people. Urinary incontinence also affects the quality of life of older people and sometimes hinders the social interaction of its sufferers. Many a time the causes of urinary incontinence are not well understood and it has been attributed by many as part of an ageing phenomenon. However, for most sufferers of urinary incontinence in older people it is due to various conditions that could be tackled through proper assessment, investigation and management.

Epidemiology

The prevalence of urinary incontinence in older people has been the subject of research in many western countries. Studies have shown that prevalence of urinary incontinence increases with age. Studies have shown varying prevalence in different population especially investigators have used different defining criteria for inclusion in the study. With these limitations, the prevalence of urinary incontinence in older people living in the community varies from 6.9% to 42%.

However, for those suffering from severe incontinence which usually means incontinence every day the prevalence merge at around 3-5% in the older population. Another study conducted in Hong Kong in 1987 also showed that urinary incontinence was around 3% at that time. The Hong Kong Continence Society and Hong Kong College of Family Physicians conducted a large-scale community study in 1995. The study also showed rising prevalence of urinary incontinence and bladder symptoms in older people (Table 1).

| Table 1. Urinary incontinence in different age groups and sex in Hong Kong |
|------------------|----------------|----------------|----------------|----------------|----------------|
| Symptom          | Present (%)    | M | F | M & G | Absent (%)    | M | F | M & G | Total (%)      | M | F | M & G |
| 18-39 years      | 25 (2.5)       | 10 (1.1) | 15 (1.6) | 208 (8.6) | 106 (7.5)     | 213 (6.7) | 219 (9.4) | 1011 | 1394 | 2494 |
| 40-59 years      | 27 (5.2)       | 10 (1.4) | 17 (2.4) | 208 (19.9) | 96 (14.8)     | 154 (16.5) | 841 (81.5) | 533 | 127 | 1050 |
| 60-74 years      | 25 (18.1)      | 7 (36.6) | 18 (9.9) | 193 (19.9) | 46 (8.5)      | 145 (85.3) | 332 (73.6) | 249 | 202 | 451 |
| ≥ 75 years       | 18 (29.5)      | 30 (39.5) | 48 (35)  | 43 (70.5) | 4 (65)        | 9 (65)     | 61 (76) | 76 | 137 |
| All age          | 115 (6.2)      | 46 (21.2) | 69 (14.1) | 729 (6.5) | 372 (73.6)    | 361 (85.6) | 1644 | 2199 | 4042 |

The prevalence of urinary incontinence of older people living in institution is in general higher than those in the community. Again, the prevalence varies with different studies, but in general those from Nursing Home, Long Stay Hospitals have much higher prevalence than those from acute hospitals. Another study in Hong Kong showed the same prevalence pattern and over 11% of older people in institutions were suffering from urinary incontinence.

Physiological changes associated with ageing

Normal micturition involves the ability to store and to void urine at suitable place and at convenient time, and constitute a cycle of events. Continence is maintained so long as the pressure within the bladder is lower than the urethral resistance and urine will escape when this balance is reversed. The bladder normally accommodates about 600 ml of urine and is capable of emptying itself completely. As the bladder fills up, its muscular wall accommodates to the increase in volume without any significant rise in bladder pressure. As the normal bladder fills up an awareness of distension reaches consciousness at some point beyond 250 ml. With ageing, there are changes in the bladder which include reduced bladder capacity, reduced bladder and urethral compliance, reduced maximal urethral closure pressure, increased post-voiding residual volume and altered diurnal rhythm of urine production. However, these changes would not cause incontinence in older people but predispose them to becoming incontinent.

Causes of Urinary Incontinence

There are many causes of incontinence in older people. It is necessary to consider a classification of the causes of urinary incontinence. A useful clinical classification of urinary incontinence begins by dividing it into transient and established incontinence.

A. Transient causes

The transient causes are generally reversible causes and can be remembered by the mnemonic “DIAPPERS” which are listed as follows:

D — Delirium which is confusional state in older people usually caused by acute medical illnesses
I — Infection of the urinary tract which can cause acute inflammation of bladder causing increase in urgency
A — Atrophic vaginitis or urethritis which occurs in post-menopausal women and result in urgency, frequency
P — Pharmaceutical (diuretics, anticholinergic, antihistamine, Calcium channel blocker)
P — Psychological disorders like depression could affect the older person’s behaviour and results in passing urine inappropriately.
E — Excessive urine output.
R — Restricted mobility due to physical illnesses like stroke, parkinsonism and arthritis.
S — Stool impaction which can cause difficulty in passing urine or in some cases increase in urgency due to pressure on bladder trigone.

Transient incontinence is that which accompanies other underlying acute disease, and in which the incontinence clears up as the disease is successfully treated. Thus any condition causing acute confusional disorder (such as respiratory tract infection, myocardial infarction, septicaemia) may be associated with incontinence which is of short duration. An acute stroke may be associated with incontinence, which is transient because it is cerebral oedema which affects the bladder control pathways rather than the infarct itself. It will often clear up within a few days — a particular important reason for not inserting an indwelling catheter if it can be avoided. An acute urinary tract infection is simply because of environmental causes, for example, became bedfast and unable to go to toilet or commode by himself. Any environmental hindrance to toilet is an important cause for incontinence in older people. A third, and perhaps all-important cause of transient incontinence, is simply because of environmental causes, for example, became bedfast and unable to go to toilet or commode by himself. Any environmental hindrance to toilet is an important cause for incontinence in older people. This is especially likely to be the case when nurses or attendants are unaware of the elderly patient’s bladder function.

Retention of urine as a cause of incontinence is not at all uncommon. If it is secondary to constipation then the incontinence is likely to be of both urine and faeces. Among the many drugs which may cause retention are tricyclic antidepressants, some of the anti-Parkinsonism drugs and the spasmolytics used in the treatment of gastrointestinal disease.

B. Established causes

Urge Incontinence
Urge incontinence is the involuntary loss of urine associated with an abrupt and strong desire to void (urge). Urge incontinence is usually, but not always associated with the urodynamic findings of involuntary detrusor contractions referred to as detrusor overactivity. Although involuntary detrusor contractions can be associated with neurologic disorders, they can also occur in individuals who appear to be neurologically normal. Patients with urge incontinence typically present with irritative symptoms of an overactive bladder, including frequency (voiding more than every 2 hours), urgency, and nocturia (two or more voids during usual sleeping hours). Urge incontinence is most often but not always associated with detrusor motor instability or detrusor hyperreflexia.

Stress Incontinence
Stress incontinence is the involuntary loss of urine with increases in intra-abdominal pressure (e.g. cough, laugh, exercise). It is due to weakness of pelvic floor musculature and urethral hypermobility. It could be also caused by bladder outlet or urethral sphincter weakness. Stress incontinence is common in older women. It may be infrequent and involves very small amounts of urine and needs no specific treatment in women who are not bothered by it. It is most often associated with weakened supporting tissues and consequent hypermobility of the bladder outlet and urethral stricture caused by lack of oestrogen and/or previous vaginal deliveries or surgery. Obesity and chronic cough can exacerbate this condition.

Overflow Incontinence
Urinary retention with overflow incontinence can result from anatomic or neurogenic outflow obstruction, a hypotonic or acontractile bladder or both. The most common causes include prostatic enlargement, diabetic neuropathic bladder, and urethral stricture. Low spinal cord injury and anatomic obstruction in females (uterine prolapse) are less common causes of overflow incontinence. Some patients with suprasacral spinal cord lesions develop detrusor-sphincter dyssynergy and consequent urinary retention. The symptoms of overflow incontinence are non-specific and urinary retention is easily missed on physical examination. Thus a postvoid residual determination must be performed to exclude this condition.

Functional Incontinence
Functional incontinence refers to incontinence associated with the inability or lack of motivation to reach a toilet on time. Factors that contribute to functional incontinence can also exacerbate other types of persistent incontinence.

Evaluation and investigation of urinary incontinence
The proper assessment of older people with incontinence depends on a detailed history to evaluate the above causes and examination of the relevant systems. We should be aware of the various causes associated with urological, gynaecological, medical, neurological, psychological and environmental factors causing urinary incontinence in older people.

In patients with the sudden onset of incontinence, the reversible factors that can cause acute incontinence can be ruled out by a brief history, physical examination, postvoid residual urine and basic laboratory studies (urinalysis, culture). For evaluation of elderly patients with persistent incontinence should include a focused history, targeted physical examination, urinalysis, and postvoid residual urine. The history should focus on the characteristics of the incontinence, current medical problems and medications, the most bothersome symptoms, and the impact of the incontinence on the patient and caregivers. Key aspects of the history should include active medical problems, medications, fluid intake, past genitourinary history, symptoms of incontinence, neurologic symptoms, psychological symptoms, bowel habits and environmental factors. Bladder chart would help to assess symptoms and following up for response to treatment.

Physical examination should focus on abdominal, rectal, and genitourinary examinations and an evaluation of lumbar spine innervation. During the history and physical examination, special attention should be given to factors such as mobility, mental status, medications and...
Management of Urinary Incontinence

Management of urinary incontinence in older people would best be made with the proper assessment to obtain the specific cause for the urinary incontinence and management would be directed to treating the specific underlying condition causing urinary incontinence. Attention should be paid to factors that may be contributing to urinary incontinence in the patient. General measures including education on diet and fluid intake, regulation of bowel habit, environmental modifications, aids to toileting could all help to alleviate the symptoms of urinary incontinence in most patients. A course of rehabilitation will usually enhance the physical and functional ability of the patient and help in reducing the occurrence of incontinence in the patient. For patients suffering from stress incontinence pelvic floor exercise is highly effective in relieving the symptoms. Some patients with urge incontinence could also benefit from pelvic floor exercise. Behavioural modification with the use of bladder training regime like time voiding or prompt voiding type of bladder retraining programme could help to reduce frequency of incontinence in patients with urge incontinence.

References: