

Urinary Incontinence in the Elderly Population

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Summary

Urinary incontinence is an important and common health care problem affecting the elderly population. Common types of incontinence affecting the elderly are: stress incontinence, urge incontinence, overflow incontinence and mixed type. The elderly patient suffering from urinary incontinence does not often seek treatment voluntarily due to a misconception that it is part of a normal ageing process. Without treatment, urinary incontinence may lead to serious psychological and social complications such as depression, anxiety, embarrassment, low self-esteem and social isolation. Overall it is associated with significant poor quality of life for the elderly. Life style modification and behavioural therapy with or without pharmacotherapy help in improving the symptoms. Pelvic floor muscles' training is beneficial for stress incontinence in up to fifty percent of the patients. Elderly patients with urinary incontinence should be encouraged to seek treatment early, as the problem can be treated and they will have a better quality of life.

Key Words: Urinary incontinence, Elderly, Treatment, Quality of life

Introduction

Urinary incontinence is one of the major problems affecting the elderly population but often little amount of attention is given to this problem. The International Continence Society defines incontinence as any involuntary leakage of urine¹. The prevalence of urinary incontinence in the elderly population varies from 30% to 50% according to age². It was reported that more than one third of women over the age of 65 years have some degree of incontinence and in men the prevalence ranges from 3-11%². This condition often goes untreated because of the misconception that the disease is part of the normal ageing process³.

Ageing process and urinary incontinence

Whilst urinary incontinence occurs gradually and progressively with ageing process, drug treatment and co-morbid medical disorders affecting the neurophysiological function of the urinary system may cause worsening. Majority of the elderly patients with

urinary incontinence may not seek treatment due to misconception, they may view that it is part of the normal ageing process. Others may not be forthcoming due to embarrassment, fear of surgery, fear of increase expenditure or the belief that no effective treatment is available². Among the major age related causes of urinary incontinence are decrease in bladder elasticity, reduced strength of the bladder detrusor muscles, detrusors overactivity and detrusors laxity. Factor related to estrogen deficiency in the female such as atrophic vaginitis, external urinary sphincter atrophies and prostatic enlargement in the male are known to contribute to urinary incontinence². (Table I)

Urinary incontinence and its impact

Urinary incontinence poses significant physical, psychological and social consequences. Common physical complications associated with urinary incontinence are urinary tract infections, local perineum infection and perineal skin irritation caused

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by ammonia in the urine. Psychological consequences from urinary incontinence can be profound including anger, shame, guilt, depression, embarrassment and low self-esteem. Very often a combination of these feelings will lead to social isolation, avoiding social gathering, decreased mobility, increased dependency and diminished interpersonal relationship⁴. For elderly who are dependent, there is an increased burden on the caregiver and carer burnout are recognised consequences. This may increase the likelihood of placement of the elderly in institutions^{2,4}. Increased health care cost to individual and society is another important consequence of urinary incontinence. Direct costs involved are expenditure on diagnostic investigations, medical or surgical interventions and rehabilitations. Indirect cost includes patient and carer expenses on laundering, cleaning, special absorbent products and skin treatment products^{3,4}.

Quality of life in patients with urinary incontinence

Urinary incontinence in the elderly presenting with symptoms which interfere with their daily function and activity leads to negative consequences on health related quality of life. Affected individuals clearly restrict social activities because of shame and embarrassment due to urine leakage, malodour or wetness. Relationships with friends and family may also be affected and interference with social activities occurs up to 50%⁴. Day to day activities such as travelling, shopping, recreation activities are affected especially when the availability of restrooms are not readily accessible. Consequent social isolation remains the most significant complication from all types of incontinence⁴. Various studies relate urinary incontinence to poor tolerance, anxiety and depression⁴. Patients with incontinence also report a decreased desire to be sexually active,² a factor compounded by age and physical disability.

Clinical evaluation

In view of a majority of the elderly patients suffering from urinary incontinence not reporting their symptoms voluntarily during consultation, physicians need to explore this problem directly. A review of the patient's past medical or surgical history to identify possible causes and underlying risk factors and co-morbid medical disorders is mandatory. There are some conditions which may present with transient or reversible urinary incontinence (Table II). Up to a third of the cases of urinary incontinence in the community are transient, which are readily treatable with good recovery. Details of urinary and bladder habits such as frequency, urgency, nocturia, difficulty in initiating

urination, postvoid dribbling, incomplete voiding, straining, poor urine stream and leakage with coughing, laughing or lifting, past history of urinary surgery, infection or catheterisation need to be documented using a urine diary. Scrutiny of this documentation kept over a week facilitates determining the type of incontinence. (Table III)

The patient's eating and drinking habit must also be reviewed. Drugs such as diuretics for the treatment of hypertension and other food substances (such as caffeine), which have diuretic effects, may aggravate the symptoms of incontinence³. Home environmental information such as location of bathroom, distance of bed to bath room, lighting, staircase and living arrangement are important to be obtained as it will constitute part of total holistic management of the patient.

Assessment of the general health of the patient is important. Sometimes urinary incontinence may be just one of the presentations of more serious underlying medical disorder such as stroke or systemic infection. The patient's nutritional, hydrational and anemic status need to be examined. Abdominal examination to exclude abdominal and pelvic masses, hernias, and distended bladder must be performed. Pelvic and perineum examination is done to exclude local problems such as infection, urethritis and urethra stricture. A stress testing is performed by asking the patient (with full bladder) to cough while visualising the urethral meatus to see if any leakage of urine occurs. This test has a sensitivity of greater than 90% in genuine stress incontinence². A complete gynaecological examination for women include checking for signs of vaginal atrophy, pelvic organ prolapse, vaginal stenosis, scarring will give a clue to cause for urinary incontinence. In men examination of the testes and glans penis for infection, mobility of the foreskin, and rectal palpation to look for prostatic enlargement are all-important aspects of physical examination. Neurological examination includes assessment of higher cognitive functions together with evidence of neurological dysfunction of pelvic floor muscles. Neurological disorders of the elderly such as stroke, Parkinson's disease, dementia or cord lesions must be excluded.

Simple urinalysis and mid stream urine culture to detect urinary tract infection (UTI) are preliminary investigations as bladder overactivity is related to lower urinary tract infection. Kidney function tests are done as needed to exclude renal impairment. Blood test for

sugar must be performed if diabetes mellitus is suspected. Ultrasonography of the urinary system (kidney, ureter and bladder) is a non-invasive test which may be utilized to assess any structural abnormality of the urinary system. Information on architectural changes in the kidney, urinary stones and post void residual volume can be determined. Postvoid residual volume is usually less than 50 mL. If it is 50-100mL, may indicate weakness or obstruction. A postvoid volume of greater than 100mL is considered abnormal and if the residual volume is more than 200mL, referral is recommended⁶. Intravenous pyelogram and cystourethroscopy are indicated when obstruction is suspected. Other tests include urodynamic evaluation of detrusor function through filling cystometry.

Intervention

After evaluation a tentative diagnosis should be made. Underlying medical disorders will dictate extensiveness of investigation and management principles. Non-invasive intervention should be the first line of management for urinary incontinence. In most instances, management can be initiated at the primary care level. Behavioural modification such as lifestyle changes, bladder re-training and prompted voiding can improve the quality of life and enhance self-esteem. Lifestyle modification should be started early in the course of treatment. These interventions are simple, inexpensive and do not cause significant adverse effects for the elderly person^{7,8}. Patient education is very crucial in managing urinary incontinence. Obesity, smoking and excessive alcohol intake must be addressed.

Pelvic floor muscle exercises (Kegel exercise) is a conservative measures which benefit up to 50% of the patients with stress urinary incontinence⁹. The pelvic floor muscles support the urethra and the bladder neck. Patients are taught to contract the muscles in a timely and coordinated way. This exercise should be performed in a series of 3-5 repetitions at least three times a day and done every day¹⁰. Improvement is not expected till after 2-6 months^{9,10}. Improvement in symptoms have been seen in 50-80% of cases.

Bladder drill is useful in urge incontinence and literally involves the patient voiding at predetermined but achievable intervals during the day. The voiding interval is increased after achieving initial targets set. With successful implementation, patient can be continent for periods of 3-4 hours. Pharmacotherapy using anticholinergic drugs has been the mainstay of treatment for urge incontinence but is not effective for

stress incontinence. Anticholinergic side effects such as dry mouth, constipation, sedation and impaired cognitive function and blurred vision are prominent and must be caution when prescribing for the elderly patients. These medications are also contraindicated in patients with glaucoma, constipation and gastroesophageal reflux⁸. Pharmacotherapy may help the patient to achieve some symptom control besides behavioural and lifestyle modification. Behavioural therapy and pharmacological therapy may benefit up to 60-75% of the patients¹¹. The therapy is usually long term and aim is for symptom control and better quality of life rather than curing the disease. Common drugs used include tolterodine, oxybutynin and imipramine.

Surgical intervention is useful and effective in 80% of cases for genuine stress incontinence. Thorough evaluation of the patient for surgical and anesthetic risks is mandatory and crucial¹². The patient must be provided with complete information regarding the surgical procedure, possible complications and potential outcomes. Bladder neck suspension through either suprapubic or vaginal approach for stress incontinence in the female are usually utilised. Augmentation procedures to increase bladder compliance for urge incontinence, sacral root neuromodulation for refractory urge incontinence and transurethral removal of prostate, laser or thermotherapy for overflow incontinence due to prostate enlargement in the male are options to consider¹².

In cases where most of the options mentioned are not indicated, protection measures (incontinence pads, protective devices) and clean intermittent self catheterization may be warranted.

Referral to tertiary care

Most elderly patients with urinary incontinence visiting the primary care physicians can be managed effectively by non-invasive interventions described above. However, if conservative measures fail then referral to tertiary centres is warranted. Important indications for referral are to exclude possible more serious underlying diseases, unsure of diagnosis, complexity of the presenting symptoms or the incontinence deteriorate rapidly. (Table IV)

Conclusion

Urinary incontinence is an important and common problem of the elderly population. This problem

should not be viewed as a normal process of ageing. Elderly patients with urinary incontinence must be treated to prevent significant psychosocial morbidity. Behavioural modification, lifestyle changes and non-invasive interventions such as pelvic floor exercise and

bladder retraining are effective in controlling the symptoms of incontinence. Without appropriate and timely management, urinary incontinence can lead to poor quality of life for the elderly population.

Table I: Risk factors for urinary incontinence^{2,3,13}

| | |
|---|---|
| Increasing age | |
| Post-menopause | |
| Obesity | |
| Medical disorders | : Diabetes Mellitus, hypertension, stroke, Parkinson's disease, acute and chronic pain |
| Psychological conditions | : Depression, delirium, impaired cognition |
| Obstetric and gynaecological conditions | : History of difficult childbirth, pelvic surgery, hysterectomy. Pelvic floor dysfunction and pelvic organ prolapse |
| Drugs | : Diuretics, psychotropics, narcotics |
| Substance | : Alcohol, smoking, caffeine |

Table II: Transient urinary incontinence²

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| Excessive fluid intake |
| Chronic constipation, stool impaction |
| Acute infection of urinary tract |
| Acute confusional state |
| Hyperglycemia, hypercalcemia |
| Side effects of drugs: diuretics, anticholinergic, antipsychotic, antidepressant, narcotics. |
| Immobility |

Table III: Major types of urinary incontinence, pathology and its presentations

| Type | Pathology | Presentation |
|--------------------------------------|---|---|
| Stress incontinence | Pelvic floor muscle dysfunction and poor urinary sphincter function | Leakage of urine spurts occurs when abdominal pressure increases during cough, sneezing, laughing, lifting, walking or bending. |
| Urge incontinence | Detrusor hyperactivity or instability | Overwhelming need to pass urine, inability to control initiation of urine. |
| Overflow incontinence with retention | Poor force in urine stream and incomplete voiding, or secondary to a flaccid bladder due to underlying obstruction or neuropathy. | Repeated involuntary leakage of small amounts of urine, frequent dribbling, incomplete bladder emptying is common. |
| Mixed in continence | | Combination of the above (frequently involving stress and urge incontinence) |

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Multiple Choice Questions

Urinary Incontinence of the Elderly Population

T=True F= False

1. The following statements are true concerning urinary incontinence of the elderly population:
 - A. Many elderly patients in the community suffer from urinary incontinence without getting proper medical care.
 - B. Elderly patients may view urinary incontinence as a normal ageing process.
 - C. Majority of the elderly patients voluntarily telling their family doctors about the problems of incontinence.
 - D. All cases of urinary incontinence must be referred to tertiary care centre.
 - E. Proper management of urinary incontinence improves the quality of life of the elderly population.

2. The following are recognised psychological complications of urinary incontinence in the elderly population:
 - A. Depression
 - B. Anxiety
 - C. Low self esteem
 - D. Helplessness
 - E. Anger

3. Consequences following untreated urinary incontinence of an elderly patient include:
 - A. Social isolation
 - B. Increase incidence of admission for institutional care
 - C. Impaired daily activity
 - D. Poor interpersonal relationship
 - E. Reduced in health care cost

4. Evaluations of an elderly patient with urinary incontinence include:
 - A. Obtain a complete past medical and surgical history
 - B. Interview the carer for social environmental history
 - C. Examine the abdomen for organomegaly
 - D. Pelvic examination
 - E. Urine culture for all patients.

5. Bladder neck suspension procedure are is useful in:
 - A. Genuine stress incontinence
 - B. Urge incontinence
 - C. Overflow incontinence
 - D. Urinary fistula
 - E. Utero-vaginal prolapse