



## RESEARCH ARTICLE

### URINARY INCONTINENCE IN THE ELDERLY

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#### ABSTRACT

Urinary incontinence is the involuntary leakage of urine. It is present in 35% of people over the age of 65 with half of the patients who are homebound or institutionalized being incontinent (Hannestad *et al.*, 2000). It is twice more likely to occur in women over the age of 60 than in men due to the weakening of pelvic floor muscles during labour. Even the Ebers Papyrus (an ancient Egyptian medical text from 1500 B.C.) has mentioned using pads for the treatment and management of urinary incontinence (Becker, Horst-Dieter, 2005). The cause of incontinence can be reversible or transient. Urinary incontinence can have various economic, psychosocial and medical implications. It can lead to significant morbidity, decrease in activities and depression. The four main types of incontinence seen in the geriatric population are stress incontinence, urge incontinence, over flow incontinence and functional incontinence. If a patient presents with a combination of symptoms of stress and urge incontinence it can be termed as mixed incontinence. It is important to be able to distinguish between the several types of incontinence so that appropriate treatment can be given to reduce or eliminate to leakage.

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#### INTRODUCTION

Urinary incontinence affects 13 million people in America, most of whom are elderly (<http://archive.ahrq.gov/clinic/uiovervw.htm>, 2016). Primary care physicians should make it a habit to ask about difficulties with urination to their geriatric patients at every visit as it can sometimes be difficult or embarrassing for the patient to talk about. The potential causes of reversible and treatable incontinence can be remembered by the mnemonic 'Delirium/Dementia/Diabetes, Infection (urinary), Atrophic vaginitis and urethritis, Pharmaceuticals including caffeine and alcohol, Psychological issues especially depression, Excessive urine output (from CHF or Diabetes), Restricted mobility and Stool impaction' (DIAPPERS) (<http://www.acsu.buffalo.edu/~drstall/diappers.html>). If positive symptoms are elicited, a detailed history of the complaint should be taken with the physical exam focusing on the medical causes of incontinence such as a tumour blocking the urine outflow or stool impaction. Some of the radiologic and laboratory tests that can aid in the diagnosis are urinalysis, ultrasound, cystoscopy and urodynamic testing. Once a diagnosis is reached, treatment can range from behavioral modification and bladder retraining in milder cases to surgical intervention in more serious cases.

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#### Types of urinary incontinence

##### A) Stress incontinence

Stress incontinence is a condition in which there is an involuntary emission of urine when there is a sudden increase in the intra-abdominal pressure, which can occur while laughing or coughing. It is the second most common cause of urinary incontinence in elderly women and is mainly found in women (Stress Urinary Incontinence, 2016). It is caused due to the weakening of the pelvic floor muscles and the urinary sphincter muscles. This commonly occurs in women due to childbirth and in males who have undergone prostatectomy. Other risk factors are age, postmenopausal women (lack of estrogen), obesity, previous pelvic surgeries (hysterectomy) and chronic cough. Patients will present with leakage of urine when they perform activities such as coughing, sneezing, laughing, intercourse, exercise and standing up, as these increase the abdominal pressure which in turn increases the pressure on the bladder. Diagnosis is usually made based on clinical history and physical exam. The urinalysis, cystometry, postvoid residual volumes and radiologic studies will be normal. A cough stress test, in which the physician observes the patients urethra while she coughs for urine leakage, can be done. The patient can be asked to keep a voiding diary if

symptoms are not clear. Treatment is based on behavioral modifications, insertable devices, surgery or a combination of the three. Behavioral treatment includes Kegel exercises which help to strengthen the pelvic floor and sphincter muscles and have been shown to be an effective form of intervention (Park *et al.*, 2014). This is the most common form of treatment for stress incontinence. Patients should be thought the exercises and instructed to perform them daily. Other behavioral therapies include weight loss, fluid consumption counselling, avoidance of alcohol, smoking and caffeinated drinks and scheduled toilet trips (bladder retraining). Insertable devices include vaginal pessaries which help support the bladder if it is prolapsed and urethral inserts which act like a tampon and prevent urine leakage to the outside. These can be used in patients who do not wish to undergo surgery. Surgery is done when all other treatments fail. Surgery aims to support the bladder and improve the urethral closure. The most common surgery done in stress urinary incontinence is the sling procedure. Some of the other treatment techniques are electrical stimulation of the pelvic muscles, biofeedback and adult diapers.

### **B) Urge Incontinence**

Urge incontinence is an involuntary loss of urine after a strong sudden need to urinate that cannot be postponed. It is also known as overactive bladder. The likelihood of developing urge incontinence increases with age. 40 to 70% of incontinence is due to urge incontinence (Habermann *et al.*, 2007). It is prevalent in 7-27% of all men and 9-43% of all women according to a recent study ([http://www.jurology.com/article/S0022-5347\(12\)04959-2/abstract](http://www.jurology.com/article/S0022-5347(12)04959-2/abstract)). The pathophysiology involves abnormal contractions of the bladder which cause urine leakage. It can be caused by bladder carcinoma, urolithiasis, bladder nerve damage due to diabetes, stroke or multiple sclerosis, infections and in men due to benign prostate hyperplasia. Urge incontinence is characterized by urgency (sudden desire to urinate which cannot be postponed), frequency, nocturia and incontinence. Patient will present with symptoms of not being able to control urination, sudden urgency to urinate and urinating throughout the day and night. Diagnosis is based on signs and symptoms but cystoscopy, bladder ultrasound and urodynamics can be done in certain cases. Urinary tract infections can present with similar symptoms but can be ruled out with a urinalysis and urine culture. Diabetes can present with frequency but there will be no urgency. Treatment can be achieved through lifestyle modifications which are similar to those for stress incontinence and include bladder retraining, limiting caffeine and alcohol intake and Kegel exercises. Medications to help relax the bladder, prevent spasms and reduce symptoms include anti-muscarinic drugs (oxybutynin, tolterodine), beta-agonist drugs (mirabegron), tricyclic antidepressants (doxepin, imipramine) and Botox injections given through a cystoscope. The surgery performed for this condition is called augmentation cystoplasty and involves increasing the bladder size by adding bowel to allow it to store more urine. This is usually the last resort when all other therapies have failed. Non-invasive electrical stimulation has been tried to reduce the contraction of the muscles around the bladder tissue. Urge incontinence usually subsides in a year but can persist for several years.

### **C) Overflow Incontinence**

Overflow incontinence is the involuntary passage of small amounts of urine from a bladder that is full. There is usually no urge to urinate preceding this and incomplete emptying of the bladder. This can be caused by weak bladder muscles, side effects from medications (anti-cholinergics, alpha-blockers, calcium channel blockers), epidural anaesthesia and blockage of the urethra. This is the only type of incontinence which is more common in men than in women and is primarily caused by enlargement of the prostate in males. Other causes are nerve damage from diabetes or Parkinson's disease and urethral obstruction by tumours or stones. Symptoms will include hesitancy and decreased stream in the earlier stages. Symptoms of BPH include hesitancy, nocturia, frequency, difficulty initiating urination, straining, feeling that the bladder has not been completely emptied and post-voidal dribbling. Physical exam should include a rectal exam in males to assess the prostate. Urinalysis and blood glucose should be included in the laboratory workup. A few specialised tests which can aid in diagnosis are catheterisation once the patient has been instructed to void his/her bladder to see if there is any residual urine in the bladder and urodynamic testing which checks bladder pressure, urine flow, bladder contractions, nerve signals and leakage. Treatment will depend on the cause. Those caused by obstruction should be treated with relieving or rectifying the obstructions. If it is due to an irreversible damage such as nerve damage, poor muscle tone or past surgery then a catheter can be used either intermittently or continuously. These patients will be at a higher risk for developing urinary tract infections and should be told to monitor for symptoms of their development. Mild forms of benign prostate hyperplasia are treated with medications such as alpha-blockers (doxazosin, tamsulosin) which can also help with controlling blood pressure, 5-alpha reductase inhibitors (finasteride) or a combination of both drug classes if symptoms are not relieved. For moderate to severe BPH non-responsive to medical therapy, minimally invasive surgery can be performed. Transurethral resection of the prostate (TURP) is one such minimally invasive surgery.

### **D) Functional Incontinence**

Functional incontinence is a type of urinary incontinence in which the person is aware of the need to urinate but is not able to reach the toilet on time due to some reason. It is not due to a bladder problem like the previous types of urinary incontinence but due to a physical inability to get to the toilet. Some of the common reasons for this include dementia, immobility, depression, poor mobility restricting the patient from moving fast enough to make it to the toilet on time, environmental factors such as poor lighting and fear of falling and severe pain due to arthritis. Physicians should suspect a diagnosis of functional incontinence when there are other medical conditions which could cause difficulty reaching to the toilet. A physical examination, laboratory, radiologic or urodynamic studies maybe required to rule out other forms of urinary incontinence also being present. Treatment includes identifying and correcting conditions that could cause or contribute to the incontinence (pain management, toilet assistance, improved lighting) and to formulate and individualised care plan for each patient.

## Conclusion

Urinary incontinence affects millions of people around the world. It is not associated with mortality but can severely affect the patient's psychological, emotional and social life. Patients can be reluctant to initiate the topic due to embarrassment, fear of surgery or lack of knowledge about treatment options. It is important for the physician to properly classify the type of incontinence and its severity for optimal treatment.

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