

Treatment of urinary incontinence in elderly patients

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Urinary incontinence (UI) is a clinical situation highly prevalent in patients above 65 years of age and is often associated with other diseases. It causes deterioration in quality of life and can cause institutionalisation of patients. Primary care doctors should actively look out for incontinence, given that the elderly tend to make only few complaints regarding this condition. An active and personal intervention by the health care provider can correct and reduce the level of incontinence.

Treatable factors that can produce transitory incontinence should be identified. In acute cases of incontinence, reversible causes must be ruled out first. In primary care, first line treatment should be conservative and related to lifestyle measures.

In stress urinary incontinence, elective treatment consists of pelvic floor exercises and surgery is indi-

cated in only a few selected cases. No pharmacological treatment has proved effective in this type of UI.

In urge incontinence, recommended treatment consists of bladder training and pelvis floor exercises, and can be complemented with anticholinergic drugs.

The treatment of overflow incontinence is primarily surgical. However, medical treatment can be employed up to the moment of intervention. Treatment with alpha-blockers can be used either solely or associated with anticholinergic agents up to the time for intervention, as in the case of urge incontinence.

In the management of functional incontinence, the main goal is to improve the patient's quality of life. This includes an assessment of social and family conditions at home through an educational programme for carers.

Introduction

In Spain the prevalence of urinary incontinence (UI) in patients over 65 years of age at community care level is approximately 15%, and UI is more frequent among women. In patients receiving home based care, the prevalence can reach up to 30% and in residences and institutions up to 70%¹.

Surprisingly, given the prevalence, this pathology is not largely cared for at primary care level. The condition is hardly explored in our interviews with patients and in general, an etiological diagnosis is rarely reached, while in most cases palliative measures are offered with important repercussions in the quality of life and conditions of the patient. More so, UI may be cause for institutionalisation of the elderly patient.

Physicians frequently do not inquire about UI and neither do patients complain about it. In one report², only 30% of elderly patients consulted about this problem, only 10% of the physicians had asked patients for symptoms of UI and 1 in 5 physicians did not carry out any diagnostic or therapeutic measure.

Absorbent pads are the most frequent palliative treatment used^{3,4} (between 10 and 50% of the elderly use them in studies published in Spain) and 1-3% used permanent urinary catheters. In Navarre (nearly 600,000 inhabitants), 15% of the population over 75 years of age are using absorbent pads, which accounted for a public expenditure of some 4 million euros in 2006. Between 50-70% of patients could benefit from curative treatment or a reduction in UI intensity if this condition was adequately managed at the primary care level.

Definition and characteristics in elderly patients

Urinary incontinence (UI) was redefined by the *International Continence Society* in 2002 as an involuntary loss of urine. It can be present in elderly patients as a symptom of a pluri-pathological condition (especially neurological and endocrine related diseases), as a urinary disease or as one of the main geriatric syndromes.

Aging generates a series of changes in the lower urinary tract, prostate, vagina, pelvic floor and nervous system that predispose and make patients vulnerable to incontinence. Women are more prone to suffering UI due to their peculiar anatomical characteristics and physical conditions resulting from pregnancy and childbirth (Table 1).

Continence Structures

The lower urinary tract functionally consists of the bladder (detrusor muscle with the functions of storage and contraction), urethra, (with the internal sphincter of smooth fibres and external sphincter of striated fibres) and the pelvic floor (muscular structure that supports the abdomen and pelvis and contributes to the closure of the urethra during exertion). Bladder loss occurs due to three mechanisms: involuntary contraction of the bladder or overactive bladder; reduction of pressure in the urethra or stress incontinence and increase in residual urine and overflow incontinence. This residual urine may be due to impairment of bladder contraction or to an increase in urethral resistance (obstruction).

Classification of urinary incontinence

Normal micturition should occur approximately every 3 hours during the day, and not exceed a total of 8 times a day, one of which could be during the night. A simple and practical classification to orient treatment is based on the apparition and duration of symptoms, temporary or permanent.

Temporary incontinence

It is that which lasts for less than 4 weeks and is caused by an acute medical or iatrogenic problem. In many occasions, if action is not taken promptly to treat the cause, UI becomes permanent. Each cause has its specific treatment and follow-up of treatment is important to evaluate improvements achieved.

Permanent incontinence

It is that caused by an organic abnormality in the micturition process and can be subject to physical, medical or surgical curative treatment according to the cause. Permanent UI is usually differentiated in four types of structural impairment and one type of functional disorder. In the latter case, the cause is initially temporary and the evolution is permanent.

Stress urinary incontinence (SUI)

It occurs when pressure is exerted on the bladder by increase in abdominal pressure, by coughing, laughing, sneezing, exercising, etc. It is the most common form in women at all ages due to weakening of the pelvic floor, due to either injury, childbirth or previous pelvic surgery. In men it can oc-

Table 1. Causes of temporary incontinence.

Neurological disorders	Delirium, neurological injury
Repeated urinary tract infections	
Habits and lifestyle	Over hydration and stimulating drinks like coffee, tea, carbonated drinks and tonics. Tobacco, alcohol, diuretic infusions.
Medications	By increase in frequency and volume: diuretics. By urethral relaxation: muscular relaxants, sympaticolytics, alpha-blockers. Sedation and urinary retention: sedatives and hypnotic agents. Retention and overflow incontinence: anticholinergic agents, NSAIDs, calcium-antagonists, antidepressants, antipsychotic agents, anti-histamine agents, alpha and beta blockers, anti-spasmodic agents. Increase in stress incontinence: cough producers (ACE inhibitors), alpha-blockers.
Psychological motives	Anxiety, depression
Endocrine and metabolic disorders	Diabetes, hypercalcemia, hyperpotasemia, situations of liquid retention, (heart failure and oedema) and vaginal atrophy.
Fecal impaction	Fecalomas.
Restriction of mobility	

cur due to injury of the external sphincter after prostate surgery. The loss is predictable and generally of little quantity.

Urge urinary incontinence (UUI)

It occurs as a sudden, urgent need to urinate. It is a manifestation of a clinical situation of an overactive bladder or hyperactivity of the detrusor. In these patients, urgency and frequency go together, as the patient goes to the bathroom every short while to avoid the urgency. Urine loss is usually a large quantity and frequency increases with age due to structural changes that accompany aging. It can be triggered by neurological disease or medication that irritates the bladder.

Mixed urinary incontinence (MUI)

It is produced by a double mechanism: over-activity of the detrusor and sphincter incompetence. It manifests with combined symptoms of urge UI and stress UI. It affects both men and women and is the most frequent form of UI in elderly patients.

Overflow urinary incontinence (OUI)

This type of UI is associated with a distended bladder with retention and permanent residue due to hypoactivity of the detrusor muscle. It is characterised by dribble urine and patients constantly leaking urine. It is more common in men. There are two causes of this type of UI, one is obstructive (increase in prostate size or great organ prolapse), and the other of neurological origin (patients with loss of bladder reflex as a result of spinal cord or pelvic injury or, diabetes related neuropathy).

Functional urinary incontinence (FUI)

This is frequent in older patients who are unable to get to the bathroom due to one or a combination of physical or mental impairment or mobility restriction. The cause is mainly temporary, but if it persists it may become permanent. In these ca-

ses, treatment is palliative, with a primary role played by the carer.

Primary care treatment of UI^{5,6}

Treatment should be based on an escalating and multi-factorial approach:

- It should be made on an individual basis, taking into consideration the mental, neurological and functional status of the patient. The aims of treatment should be realistic and adapted to the particular situation. It is fundamental to try to attain continence and if not possible, to reduce the level of incontinence.
- It is obligatory to carry out a complete physical examination (Table 2) and identify risk factors.
- Identify the type of UI. To do so, a simple validated questionnaire can be used like the UI-4 (Table 3). The intensity of UI can be evaluated by a bladder diary.
- Evaluate the situations where specialist referral could be indicated, either for surgery (prolapse, previous surgery, obstruction) or for specific investigations (uncertain diagnosis or no improvement with treatment, haematuria, repeated urinary tract infections, possible neurological cause or need for specific tests).

Treatable factors that produce temporary UI should be identified.

Table 2. Diagnostic protocol for Urinary Incontinence.

History	Gynaecological and obstetric history in women, previous abdominal or pelvis surgery, prostate disease un men.
Habits and life style	Stimulants, tobacco, alcohol.
Chronic disease and medication	
Questionnaires and urine register or bladder diary	
Physical examination	Abdomen-pelvis, genital, provoked incontinence with cough, standing. Digital rectal examination.
Blood test and urinalysis.	
Abdominal and pelvic ultrasound, if available.	
Referral to specialist if indicated.	

Table 3. Clinical classification of UI (UI-4 questionnaire).

1	Does your urine leak during some form of physical exercise? (when you go up or down a staircase, when you cough, laugh, or sneeze, etc)
2	Do you have sudden urges to urinate
3	Has urine ever leaked because you could not get to the bathroom?
4	Have you ever needed to use some protection due to leaks after sudden urges to go to the bathroom?

The first question identifies SUI. The second and third identify UUI. If question 4 is affirmative and 1,2 and 3 too, then IU is mixed.

In men, questions 2 and 3 could indicate urge UI due to instability of the detrusor. To diagnose UI due to prostate obstruction, further questioning for obstructive symptoms should be made.

- Initiate treatment for UI from primary care, which in case of elderly patients, should have four levels:
 - General common measures of all types of UI.
 - Indicate as first line treatment conservative measures with specific behavioral techniques for each type of UI.
 - Associate the former, if indicated, with pharmacological treatment according to the type of UI.
 - Palliative measures if no other therapy is possible, due to the clinical situation of the patient or social and family restraints.

General measures

These are indicated in all types of UI and improve the lifestyle of the patients. They include hygienic and dietary measures, changes in environment with an improvement in the function and the identification of risk factors for UI (see section on Prevention).

Behavioral techniques

These are considered as the first line treatment of UI in the elderly. The aims of these techniques are the establishment of a normal pattern of evacuation of the bladder and promotion of continence. In 30-40% of the cases it is possible to recuperate continence and in 50% there is a reduction in frequency and intensity of incontinence⁸. The elderly patient should retain sufficient physical and mental capacity and be motivated to learn. The techniques employed depend on the type of incontinence.

Techniques to strengthen the pelvis floor

Pelvis floor muscle exercises

These are known as the Kegel exercises. They aim at re-education of the pelvic floor muscles by learning how to contract them voluntarily without using abdominal or gluteus muscles. To be effective it is necessary to carry out several times a day, 40-80 contractions a day, with 5 second rests between contractions. To obtain good results, it is necessary that the exercises are carried out regularly, and correctly and should be learnt progressively with increasing difficulty. A reference for instructions can be found at this website: www.fisterra.com/material/consejos/incont_urinaria.asp. They have demonstrated cure or improvement rates after 3-6 months.

A revision from *Cochrane* in 2005⁹ concluded that there was sufficient evidence to support the general recommendation for pelvic floor exercises and the factor best related to results was regularity in the exercises. The level of recommendation is "A" in SUI, "B" in UI after prostatectomy and "D" for UUI. (Tables 9 and 10).

As a complement to the Kegel exercises, biofeedback techniques can also be employed in women to identify their perineal muscles and be conscious of the intensity of the contraction. For this a perineometer (contains an electrode which on contact with vaginal walls can detect the intensity of contractions and permit luminous, sonoric or graphic representation of the contractions). Experienced personnel in physiotherapy are required for this technique.

Another possibility is the use of vaginal cones¹⁰. These are cone-shaped weights (20-100 grams) that are introduced in the vagina by the patient and can only be retained by contractions of the pelvic muscles. It is advised that patients use the cones and carry out the contractions while they carry out normal activities in the home and adopt different positions like standing, climbing stairs or squatting, but always avoiding a sitting position. (Recommendation level B).

Electrical stimulation

This is not widely used in our context and mixed results with this procedure have been reported.

The procedure aims to achieve contractions of the pelvic floor in patients unable to do so by electrical stimulation of the pudendal nerve or nerves of the sacral plexus.

Micturition re-training

Like during infancy, this consists of learning a new way of urinating (recommendation B). In the Cochrane review of 2003, it was concluded that this programme could be useful in the treatment of SUI. In a sub-study of 36 reviewed trials, it was noted that bladder training + pelvis exercises + bio-feedback improved the perception of incontinence by patients and improved quality of life.

Bladder training

This is a first line treatment of urge urinary incontinence (recommendation A) and can be used in patients who have a temporary urinary catheter placed due to an acute problem. The procedure consists of teaching the patient to urinate at fixed periods. It requires a bladder diary for 3 days in order to know the frequency of urination, the episodes of incontinence and the amount of liquid the patient drinks. From this information, urination times are scheduled based on the minimum time before urge incontinence appears, and progressively the patient increases the intervals between urination up to 3-4 hours between one time and the next. It requires active collaboration and at the same time, can be accompanied by pelvic floor exercises and distraction techniques and relaxation (count 100 to zero when an urge occurs to urinate, breathe deeply, cross one's legs, etc.). This learning process can take as long as 3-6 months.

Carer dependent techniques

These are indicated in patients with functional and/or mental deterioration. It is essential to count on an active and motivated carer. The aims are to reduce the number of leaks and the effects of humidity on the skin to a minimum possible. This is indicated in functional UI.

Prompted voiding¹²

This is a form of behavioral therapy to improve bladder control using verbal motivation and positive feedback for urination. Help is required to take the patient to the bathroom and the carer must be motivated. Patients with better cognitive capacity benefit the most from this technique.

Habit retraining¹³

A variable plan is established for the patient to empty the bladder to ensure that he/she is dry and that progressively has more voluntary urinations up to a period of optimum bladder emptying (every 3-4 hours). At the same time positive feedback techniques are employed.

Timed voiding¹⁴

This is similar to the previous technique, only that the plan for emptying of the bladder is fixed: every 2 hours. This is indicated in patients with important functional and cognitive deterioration.

Carer dependent techniques referred to have been revised by the *Cochrane* library and have been assigned a level of recommendation of "insufficient evidence." However, it should be taken into consideration that studies with these patients present difficulties to achieve a level of "sufficient evidence".

Pharmacotherapy

Drug therapy in UI is based on experience with alpha and beta-cholinergic receptors that produce bladder and urethral contraction or relaxation depending on the drug employed.

Stress urinary incontinence (SUI)

There is no pharmacological treatment that has clearly demonstrated its efficacy in SUI. Some of the agents that have been used up to now and others still in the research process are listed below:

- **Alpha-adrenergic drugs.** In Spain, these are not available commercially as single pharmaceutical drugs. They are found in general medications for colds and/or combined with antihistaminic agents. The results of a systematic review of these drugs did not support the use of them in SUI¹⁵ and outlined their potential side effects like arrhythms and high blood pressure, etc.
- **Estrogens.** The information about the effects of estrogens in UI was controversial until a publication of a review of the WHI (*Women Health Initiative*) and HERS (*Heart Estrogen/progestin Replacement Study*) studies that showed that oral treatment with estrogens alone or combined increased the risk of UI in continent postmenopausal women. Consequently it is not recommended in UI¹⁶.

However, in elderly women with mild symptoms of UI, vaginal estrogens could be beneficial (recommendation B). A single daily dose of 0.5 mg vaginal estriol does not increase the risk of endometrial hyperplasia¹⁷.

In stress UI elective treatment consists of pelvic floor exercises. No drug has proven efficient.

In urge UI recommended treatment is bladder training and pelvic floor exercises. Anticholinergic drugs are poorly effective.

- **Antidepressants.** Tricyclic antidepressant agents have been used given their anticholinergic effects, but there are no randomised clinical trials that show evidence to use them. They also have important side effects (hypotension, among others) which limit their use in elderly people.
- **Duloxetine.** This is a selective serotonin-norepinephrine reuptake inhibitor (SSNRI) used in treating major depressive disorder and diabetic peripheral neuropathy in adults¹⁸. Currently, studies are underway to test its efficacy in urinary incontinence, and even though in other countries it is possible to use it for UI, in Spain its use for UI is not yet authorised.

The SSNRI increase the tone of the striate sphincter by augmenting the pudendal nerve efference and consequently promoting a better urethral closure. All the references consulted^{19,20,21,22,23} have been carried with placebo, with a maximum duration of 3 months at 40mg/12 hours. There is very little clinical relevance of the results in reduction of episodes of UI. With regards to adverse effects (mainly nausea), one-fourth of the patients included in the trials abandoned treatment in the first 3 months¹⁶.

A *Cochrane* revision in 2006²⁴ concluded that duloxetine could improve the quality of life of patients, but there were still doubts as to whether its benefits could be sustained or not. Adverse effects were frequent but not severe.

In summary, more studies of longer duration are required to establish its efficacy and the safety of its use in UI.

Urge Incontinence (UUI)

The most active agents for bladder instability are anticholinergic drugs. These drugs act by blocking muscarinic receptors and reducing involuntary contractions of the detrusor muscle, thus decreasing intravesical pressure and reducing the frequency of contractions with an increase in bladder capacity to retain urine (recommendation A).

The use of the drugs in UUI is well established though their efficacy is very limited. At therapeutic

doses all these agents produce side effects (dry mouth, blurred vision, reduction in intestinal motility, tachycardia and light-headedness). They are contraindicated in glaucoma and urinary tract obstruction, as they can cause urinary retention. It seems that they improve symptoms when combined with behavioral techniques (pelvic floor rehabilitation and bladder training) instead of only one of these options alone²⁵.

- **Oxybutynin.** Up to now, this drug presents the most studies and experience. It is very effective, but it is not selective to the urinary tract, and is often accompanied by undesirable side effects, that are a frequent motive for abandoning treatment. The maximum recommended dose is 2-5 mg/8h. It appears to be better tolerated in extended release or skin patch form, although these forms are not available in Spain.
- **Trospium Chloride.** This agent has less side effects than oxybutynin, but its biological activity is low (5-10%) and it should be administered an hour before eating. It is poorly metabolised. The maximum recommended dose is 20 mg/12 h.
- **Tolterodine**²⁶. It is better tolerated than the previous drugs, and therefore there is better adherence to treatment. Recommended dose is 20 mg/12 h. An extended release form is available with the daily recommended dose of 4 mg. One clinical trial that compared normal release tolterodine to the extended release form showed lower risk of dry mouth with the latter²⁷.

Oxybutynin and tolterodine have been compared between themselves and with placebo in various studies and reviews^{28,29,30}. Both presented similar efficacy, though the rate of abandoning treatment and dry mouth was lower with tolterodine in single dose. Where side effects occur an option could be the use of tolterodine at 1mg/12 hours. The results of two systematic reviews that compared oxybutynin, tolterodine and trospium chloride amongst themselves and against placebo showed similar and very modest efficacy¹⁶.

- **Solifenacin**³¹. This is the most recent anticholinergic agent promoted as the most selective and with the best profile with regards to side effects. Studies published up to now compared to placebo or to tolterodine and placebo have shown a similar effect to tolterodine and only a limited effect against placebo (out of a total of 11 micturitions a day, the reduction in micturitions versus placebo was 0.42 and 0.68 with solifenacin and tolterodine respectively)³². There are no studies comparing solifenacin versus oxybutynin.

The recommended oral dose is 5 mg once a day. If necessary the dose can be increased to 10 mg. The pill should be taken completely with fluids, with or without food. Comparative studies of doses have shown an improvement in efficacy with 10 mg solifenacin rather than 5 mg. However, the findings are of little clinical relevance.

To establish its relevance in treatment, information on aspects such as long term adherence to treatment need to be known, especially when compared to oxybutynin, which is still the elective antimuscarinic agent in overactive bladder and which has the most evidence available up to now. To conclude, the use of solifenacin is recommended in patients who have not tolerated or not responded to the other mentioned anticholinergic agents.

The efficacy of UUI pharmacotherapy depends on long term adherence to treatment, as in general, treatment is often abandoned due to side effects.

Other treatments mentioned in guidelines for UUI:

- **Flavoxate, estrogens and antidepressants.** They are not currently indicated for UUI due to lack of proven efficacy and side effects especially in elderly patients.
- **Tramadol.** A clinical trial evaluated³⁶ the efficacy of tramadol at 100 mg/12 h versus placebo in overactive bladder for 12 weeks in 76 patients. Favourable results were obtained for this type of UI, with improvement in symptoms and urodynamic parameters and in general the drug was well tolerated. However, we should wait for the results expected from trials with more patients and which compare its activity with that of other anticholinergic agents before a definite indication can be made.

Mixed Urinary Incontinence (MUI)

Symptoms indicate whether there is a predominance of stress or urge incontinence, and treatment is initiated according to the dominant type (recommendation A).

Overflow urinary incontinence (OUI)

The most effective treatment of bladder obstruction is surgery. Pharmacotherapy is indicated during the waiting period for surgery or if the latter is contraindicated.

Alpha-blockers. Irritable symptoms like pollakiuria are treated with alpha-blockers, whose action breaks the increase in urodynamics. These agents block the alpha-1 receptors of the smooth prostate musculature, but do not reduce prostate size. In general these agents are well tolerated (recommendation B).

There is no evidence that one alpha blocker is superior to any other one. Their action begins after 2 weeks. Maximum doses of the main substances are as follows:

Alfuzosin	5 mg twice daily
Doxazosin	4-8 mg once daily
Terazosin	5-10 mg once daily
Tamsulosin	0,4 mg once daily

This last alpha-blocker has been recently commercialised and has demonstrated its efficacy in the improvement of the maximum urinary peak flow and a global improvement in symptoms associated with benign prostate hyperplasia (BPH). The effectiveness and side effects (rhinitis, dizziness and abnormal ejaculation) are dose dependent and maximum effect is obtained with 8 mg daily. Normal doses are between 0.2-0.4 mg daily³⁷.

5-alpha-reductase inhibitors. When there is a predominance of obstructive symptoms or in cases of very enlarged prostate glands the elective therapeutic agents are 5-alpha-reductase inhibitors like finasteride or the most recently commercialised, dutasteride. Their action is reversible and involves the inhibition of the change from testosterone to dehydrotestosterone, which is responsible for prostate hormone dependent growth. Thus action of these agents directly affect the size of the prostate gland. Maximum doses recommended are 5 mg/d in a single dose of finasteride and 0.5 mg of dutasteride.

Anticholinergic agents. In a clinical trial of combined tamsulosin and tolterodine³⁸ and in a meta-analysis of tolterodine, on its own or combined with alpha-blockers (doxazosin)³⁹, the safety of anticholinergic agents was corroborated when associated with alpha-blockers in the treatment of the

Table 4. Drugs used in UUI.

Active substance	Medication	Price	DDD*	Cost/DDD
Oxybutynin	Ditropan 5mg 60 comp.	5.51	15 mg	0.28
Solifenacin	Vesicare 5mg 30 comp.	50.03	5 mg	1.67
Tolterodine	Detrusitol 2mg 56 comp.	42.29	4 mg	1.51
	Urotrol 2mg 56 comp.	42.29		1.51
	Detrusitol Neo 2mg 28 caps extended release	29.79		2.13
	Urotrol Neo 2mg 28 caps extended release	29.79		2.13
	Detrusitol Neo 4mg 28 caps extended release	47.64		1.70
	Urotrol Neo 4mg 28 caps extended release	47.64		1.70
Trospium chloride	Uraplex 20mg 30 pills	7.66	40 mg	0.51
	Uraplex 20mg 60 pills	13.92		0.46

* DDD = defined daily dose

In overflow UI, surgery is indicated. Meanwhile, alpha-blockers can be employed solely or associated with anticholinergic drugs.

urge to urinate in enlarged prostate patients with mild or moderate symptoms. However, in case of doubt of the severity of prostate hyperplasia, it would be prudent to carry out a postvoid residual measurement to avoid acute urinary retention.

Palliative treatment of UI

Bladder catheters

A careful examination of the patient is essential before deciding on the use of bladder catheters due to the associated high risk of infection. They are useful in the following situations:

- Urinary retention or the existence of neurogenic bladder
- Severe pressure ulcers
- Unoperable obstruction that impedes bladder emptying
- Terminal patients
- Home based patients without sufficient carer support.

In functional UI, improvement of quality of life is essential and a home-based social evaluation should be made through the educational program for carers.

Interventions like Kegel exercises and the rational use of absorbent pads and diapers can reduce the number of inappropriate catheterisations.

Accessories

In studies carried out in Spain⁴, 63% of the elderly patients used some type of accessory.

- **Collectors in men.** These are useful for short periods (nights) in men without obstruction of the urinary tract.
- **Penis caps.** In case of men with urge incontinence.
- **Mechanical devices for women.** These are indicated in stress incontinence where surgical options have been excluded. They are low cost items. In a *Cochrane* revision in 2006⁴² these devices were recommended when no other therapeutical option was possible, even though the devices had shown little evidence. There are various devices available: anticonceptive diaphragm, vaginal pessary, vaginal caps, urethral inserts and plugs.

Absorbent products for urinary incontinence

These should be the last resource of treatment of UI. They should not substitute an early medical examination that could identify patients who could benefit from other interventions like Kegel exercises. These can reduce dependence on absorbent pads and increase patient confidence. An indirect form of evaluating efficacy of the interventions is by monitoring the number of absorbent garments used. There appears to be an important variability in the use of absorbent garments in the elderly in the community, with a prevalence of between 8 and 20%⁴ (Tables 5,7 and Figure 1).

Special circumstances in urinary incontinence

Patients with prostatectomy

There is a prevalence of between 5 and 60% of detrusor muscle and sphincter alterations in these patients. A *Cochrane* revision of 2004⁴⁰ reviewed the efficacy of different interventions in these patients finding that treatment of this type of UI is unclear (studies were of moderate quality). It was noted that some benefit was obtained from pelvic floor exercises with biofeedback in the post-surgical period and in some UI, the penis cap resulted useful.

Urinary incontinence after stroke

In a *Cochrane* review in 2005⁴¹ it was observed that 40-60% of patients who suffered from a stro-

ke presented UI after the acute phase, and of these, 15% were still incontinent after a year. The most frequent type is urge UI, due to bladder overactivity, but also other forms of urinary retention or total UI are observed (factors associated with the deteriorated functional status and concomitant depression). Treatment depends on the cause: bladder training and anticholinergic agents in UUI, intermittent catheterisation in cases of neurogenic bladder, or habit training in cases of functional incontinence. In the acute phase after stroke intense rehabilitation is indicated.

Prevention of urinary incontinence⁴³

As for prevention of urinary incontinence, some key points should be taken into account:

- Early detection and preventive measures of risk factors are essential for a correct prevention.
- An active attitude should be held in this pathology: inquire, diagnose, and treat the majority of patients with UI.
- Prevention of UI means to always improve quality of life.

A good number of studies place an emphasis on the deterioration in the quality of life that accompanies patients with UI including a reduction of self esteem, the avoidance of social activities and relations, and limited autonomy, etc. To evaluate the quality of life, specific questionnaires have been designed to study the impact of UI. The most employed and validated tests in Spain are the *Incontinence Quality of Life (IQoL)* and the *King's Health Questionnaire*. The former is recommended by the WHO and consist of 22 items that evaluate the limitations or avoidance behaviour and its social impact. The latter is a self administered questionnaire that consists of 21 items, where different areas are explored like general health, the impact of UI, limitations in daily activities, the presence and impact of physical, personal and emotional limitations, and lastly symptoms⁷.

Following are some practical recommendations to prevent UI.

Table 5. Absorbent products for UI.

Type of pad	Form	Absorption (in mL)
Day	Rectangular Anatomic Anatomic and elastic	600-900
Night	Anatomic Anatomic and elastic	900-1,200
Supernight	Anatomic Anatomic and elastic	1,200

Improve habits and life style directly related to urination

Avoid constipation and obesity.

Reduce consumption of stimulants: alcohol, caffeine, citric derivatives, tomato, and spicy food, chocolate, etc. (Recommendation B for prevention of UUI).

Restriction of liquids during the afternoon-night and fruit with high liquid content (but also avoiding forming concentrated urine).

Avoid polimedication in general (recommendation C). They represent a risk factor themselves due to additive effects. Avoid nocturnal sedatives.

Avoid the consumption of medicinal plants with unknown effects (diuretic for example)

Maintain good urinating habits, avoid intervals of more than 3 hours without urinating during the day (recommendation B).

Home based preventive measures

Facilitate transfer to the bathroom, evaluate the situation at home and remove obstacles. Use various means for transfer, support bars, elevate the toilet seat, etc.

If transfer to the bathroom is impossible, use seats with sufficient height, a urinal, wedges, etc.

Use adequate clothing, loose, comfortable, and easy to remove. Avoid tight clothing especially at the waist.

Table 6. Specific treatment of different types of Urinary Incontinence.

Stress UI	Urge UI	Mixed UI	Overflow UI	Functional UI
Behavioral therapy Pelvis floor exercises Micturition re-education	Behavioral therapy Bladder training Pelvis floor exercises	Behavioral therapy Pelvis floor exercises Retraining of habits Electrical stimulation	Obstructive Surgery Drugs Palliative	Integral evaluation Individual and home based
Surgery	Medication Anticholinergic agents	Medication Anticholinergic agents	Neurogenic Intermittent catheters Palliative: caps, absorbents, etc.	Behavioral techniques With carers
Palliative Mechanical devices Absorbent products	Palliative Penis caps Absorbents, etc.			Palliative Night collectors Absorbents

Avoid the risk of perineal injury (recommendation B)

Avoid abrupt increases in abdominal pressure (chronic cough, nausea) in patients with injuries of the pelvis floor, due to alterations and loss of muscle tone, which also cause stress incontinence.

Carry out regular physical activity avoiding violent exercise and aggressive workouts that may injure the pelvis floor.

Avoid abrupt and loud cries and exaggerated singing.

Avoid lifting heavy weights.

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Table 7. Consumption of absorbent pads (AP) in Navarre.

Age	Total persons	% with AP
<60	446,964	0.1%
60-64	29,301	0.5%
65-69	22,367	1.1%
70-74	24,927	2.1%
75-79	21,984	5.6%
80-84	16,826	12.5%
85-89	9,228	26.0%
90-94	3,715	44.0%
95-99	962	58.0%
>100	146	54.1%
Total	576,274	1.6%

Table 8. PAPPS*⁴⁴ Recommendations

Interrogate systematically on the existence of UI.

Identify the type of UI, risk factors and reversible causes.

Basic investigations in UI.

In stress or mixed incontinence, propose follow up with structured sessions of pelvis floor training exercises in active elderly women.

*Organism dependent on the Spanish Society of Family and Community Medicine, Commission for the elderly in the programme for prevention and promotion of health.

Table 9. Levels of scientific evidence (CE).

I++	Evidence obtained from meta-analysis of randomised controlled clinical trials.
I+	Evidence obtained from at least one well designed randomised controlled clinical trial.
II++	Evidence from at least one prospective well designed non-randomised controlled trial.
II+	Evidence from at least one well designed quasi-experimental trial.
III	Evidence from descriptive well designed non-experimental studies, like comparative, correlation or case-control studies
IV	Opinions of selected authorities, based on clinical experience, descriptive studies or reports from expert committees.

Table 10. Levels of recommendation.

A	Includes levels of evidence I++ y I+
B	Includes levels of evidence II++ and/or previous (I++; I+)
C	Includes levels of evidence II+ and II++
D	Includes levels of evidence III or IV

Table 11. Recommended websites.

www.uroportal.net

Web site on general issues in Urology from which other links to guidelines from different societies and organisations are available.

www.fisterra.com/recursos_web/castellano/c_guias_clinicas.asp

www.SIGN.AC.UK

Guidelines on the management of UI at primary care level. (Spanish)(December 2004) Practical guideline with evidence based recommendations on evaluation of UI and quality of life.

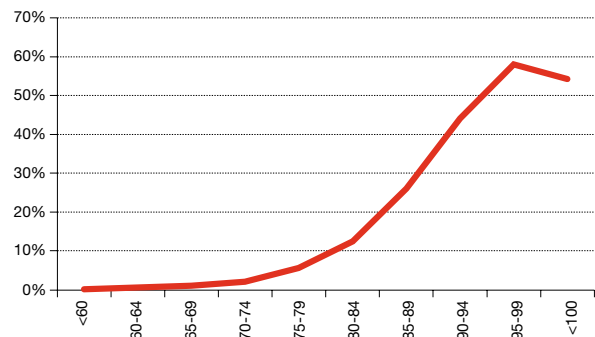
www.guideline.gov

Two guidelines: UI in women (2005) and diagnosis of UI in women (2004).

www.gencat.net/salut

Website of the Catalanian Institute of Health on prevention in the elderly.

Figure 1. Proportion of people using AP according to age range.



Conclusions

Urinary incontinence is a clinical situation with a high prevalence in the elderly and is often associated with disease. It deteriorates the quality of life and can cause institutionalisation.

The primary care physician should carry out an active search for UI, taking into account the few consultations and complaints on the part of the elderly patient. An active and individual intervention can correct or reduce the level of incontinence.

All treatable factors that may cause temporary incontinence should be ruled out. In cases of acute urinary retention a reversible cause should be ruled out.

The majority of patients with UI require a complete evaluation, complementary tests, and treatments available to the primary care physician.

Primary care services should offer conservative treatment as first line management associated with lifestyle interventions.

In SUI the elective treatment is pelvic floor exercises and surgery is applied in selected cases. No current pharmacological treatment has shown efficacy in treating this form of UI.

In UUI recommended treatment is bladder training and pelvic floor exercises, and can be complemented by anticholinergic agents.

In overflow incontinence surgery is indicated. Up to the moment for surgical intervention, alpha-blockers can be employed solely or associated with anticholinergic agents, as in the case of UUI.

In functional UI a goal must be set to improve the quality of life of the patients and a home based social and family evaluation should be made through the educational program for carers.

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