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Urinary incontinence in men

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Abstract:

Background: Urinary incontinence is one of the most common problems among older people. The number of men struggling with incontinence is also gradually increasing. The lifestyle of the urinary incontinence, including low physical activity, poor eating habits, and nicotinic have a big influence on the occurrence of urinary incontinence. Urinary incontinence is associated with poor quality of life, social isolation and depression.

Material and methods: Analysis of articles in the Google Scholar and PubMed database using keywords: urinary incontinence, risk factors of urinary incontinence, symptoms of urinary incontinence, men, treatment.

Results: The incidence of urinary incontinence increases more than five times in men over 65 years of age. The problem may be exacerbated by respiratory, circulatory, muscular and neurological diseases. Men are often ashamed of problems with incontinence and rarely report to the doctor, which causes the problem to get worse and often requires the use of invasive methods of treatment.

Conclusions: The incidence of urinary incontinence among men increases with age. Currently, methods that effectively cure urinary incontinence among men are poorly understood, therefore it is necessary to conduct further research among people with this problem. Broader education of the elderly will allow to some extent eliminate risk factors and reduce the number of people struggling with the problem of urinary incontinence.

Key words: urinary incontinence, risk factors of urinary incontinence, symptoms of urinary incontinence, men, treatment.

Introduction

It is well known that the process of urination is regulated by the nervous system, both at the central and peripheral level. Of particular importance here is the frontal lobe of the brain, whose changes can cause incontinence, as a part of a frontal lobe syndrome of indifference, disinhibition, and self-neglect. The first researchers who received such applications were Andrew and Nathan (1964), who reported cases occurring with frontal lobe lesions, collected over a period of 24 years [1]. Among the described cases, nine can be mentioned with a confirmed brain tumor. The number was increased by seventeen (Gautier-Smith) and then by seven (Maurice-Williams), which is a sign that incontinence may be the symptom of frontal lobe tumors [2].

In communication between the frontal lobe of the brain and the urinary bladder a large role plays Barrington's nucleus, which is the pontine micturition center. As a link between parasympathetic preganglionic neurons and forebrain-projecting nuclei, its dysfunction is manifested by both bladder symptoms, such as urinary incontinence, as well as psychiatric symptoms (for example functional bowel disorders). Nucleus is also important in pharmacological treatment. The dominant form of treatment of incontinence, in which the target is the nervous system, largely affects the peripheral nerves. However, research also indicates the mentioned nucleus as an alternative target [3].

The role of the nervous system in the process of urination is evident when the disorders of the mentioned system occurs in an abrupt way. In a study carried out in Belgium, on 92 patients with spinal cord injury, a correlation was found between the time of return to the proper functioning (after the injury) of the nervous system and the time of return to normal urination. The same study also showed a relationship between the size of the spinal cord injury and the intensity of the urinary dysfunction (for example, incontinence) [4]. In turn, studies conducted in England showed a correlation between urinary incontinence and the passing of a stroke. According to them, of the 135 subjects who survived the stroke, 51% had incontinence within a year of the incident. Interestingly, 75% of cases of urinary incontinence appeared within two weeks of the onset of stroke [5], which indicates how much the functioning of the nervous system affects the process of urination.

Urinary incontinence

Urinary incontinence (UI) is the involuntary loss of urine of any genesis, severity, duration. It is one of the most common diseases of modern society. So far, it has been identified only with elderly women [6], but the number of men complaining of incontinence and problems related to it increases. UI (urinary incontinence) is closely related to the occurrence of reduced quality of life, partnering problems, social isolation and depression[7]. According to many patients, incontinence is a natural effect of aging; they do not realize that it is a pathological condition and requires interdisciplinary intervention of physicians.

Epidemiology

The incidence of UI in men is 50% lower than in women. Appears in 11-34% of older men, with a daily UI of 2-11%. Surgical treatment of prostate disease is associated with an increased risk of incontinence and related dysfunctions[8].

Older men suffer more often than young by as much as 80%. In addition, 10% complain of stress incontinence and 10-30% of men suffer from mixed incontinence[9].

The National Health and Nutrition Examination Survey (NHANES) from 2005 to 2008, including 5,297 men aged 20 years or older, found a relationship between military exposure and urinary incontinence in American men. Men with military exposure reported incontinence more frequently (18.6% compared to 10.4%) and moderate / severe incontinence

(9.0% versus 3.1%, each p <0.001) than men without military exposure . After multi-aspect corrections in men aged 55 years and younger, people with a military exposition had a 3 times higher chance of incontinence (OR 3.28, 95% CI 1.38-7.77). Military exposition did not increase the probability of incontinence in men aged 56 to 69 (OR 0.97, 95% CI: 0.44-2.18) or 70 years or older (OR 0.91, 95% CI 0,55-1,50)[10].

Classification of urinary incontinence

Urinary incontinence can be divided by the duration into transient and persistent. Due to the mechanism of formation of chronic incontinence, we further divide into 5 types: stress, urgency, mixed, overflow and functional [11].

According to the International Continence Society (ICS), the following types of UI are distinguished:
stress urinary incontinence (SUI) - the flow of urine during physical exertion, coughing and sneezing. Urgency urinary incontinence (UUI), - urine flow preceded by a feeling of urgency (sudden, unmanageable urge to urinate). Mixed urinary incontinence (MUI) (UUI + SUI), - urine flow associated with exercise and urgency[9, 12]. UI from overflow - weak contractility of the detrusor muscle or an obstruction in the bladder outlet, resulting in bladder overflow, especially seen in men with benign prostatic hyperplasia, but not found in women.
Functional UI - accompanied by cognitive impairment or reduced mobility, which reduces the patient's ability to reach the toilet, in this type of UI is not accompanied by disturbances in the function of the neurological or urinary system[11].

Other, less frequent types of UI according to ICS are:
Enuresis - for example during sleep, so-called: "bedwetting"; Continuous urinary incontinence - constant leakage of urine; Extra-uterineurinary incontinence - leakage through a different route than the urethral external outlet (eg through a vesicovaginal fistula); Other UI (OI), - occurring in specific situations, e.g. during sexual intercourse[12].

Risk factors

The factors that increase the risk of UI in men include: old age, high BMI and obesity, dietary factors (excess fluid intake, caffeine), nicotinism, low physical activity, frequent constipation[13]. In addition, genetic, anatomical, racial factors, muscle and / or nerve damage, surgical operations (especially in the pelvic area, abdominal cavity, spine), radiotherapy, frequent lower urinary tract infections, certain medications, mental, collagen and environmental diseases, dementia[14].

Etiopatology

The incidence of urinary incontinence increases more than five times in men over 65 years of age[15]. In patients with suspected transient UI, it is first necessary to exclude the reversible causes that includes DIAPPERS schema (Differential Diagnosis of Transient Causes of Urinary Incontinence). It contains: delirium, infections (especially acute urinary tract infections), atrophic urethritis, drugs (including hypotensive, analgesic, psychiatric), alcohol, psychiatric disorders (including depression), endocrine diseases (m diabetes), limited mobility, constipation[16]. Further, the patient should be sought for comorbidities, whose treatment may significantly reduce the severity or even completely eliminate UI, such as:

COPD (cough may increase UI), cardiac diseases (hypertension or diuretic therapy may lead to UI), diseases of the muscular system (functional UI)[11].

The causes of chronic urinary incontinence in men can generally be divided into neurological and non - neurological. Neurological causes can be further divided into: occuring above the sacral spinal cord, the sacral and the peripheral nervous system. Damage above the cross-section (including as a result of a stroke) results in the overactive bladder (OAB) and urinary bladder dyspsia. Degenerative diseases of the nervous system - such as Parkinson's disease, multiple sclerosis, reduce the mobility of patients and cause a reduced tension of the external sphincter of the urethra, resulting in urinary incontinence. Spinal cord injuries can cause UI, but it depends on their extent and location. Complete disruption of the spinal cord first leads to atonic bladder and inability to empty (spinal shock, 2-6 weeks), and then in the spastic phase of paralysis to the overactive bladder reacting to overfilling with automatic but incomplete emptying. Incomplete disruption of the spinal cord's continuity may cause limiting patient mobility, reduced bladder feel, bladder dyssynergy. Depending on the location of the core lesion - supryminal lesions lead to hyperreflexia of the urinary bladder, and arise in the sacral region and below to areflexia. Diabetic neuropathy affecting people with advanced and long-term diabetes can lead to hyporeactiveor hypocontractile bladder, which may result in the need for sudden and frequent urination and a lack of feeling of bladder filling. Other neurological diseases leading to UI are - dementia, cerebral palsy, multiple atrophy, brain tumors, extensive brain damage, normotensive hydrocephalus[17].

The non-neurological causes of UI in men include:
Damage to the bladder sphincter muscle - surgery in the pelvic area, especially radical prostatectomy; radiotherapy in the pelvic area. Narrowing of the bladder outlet - benign prostatic hyperplasia, contracture of the bladder neck after prostate surgery, narrowing of the urethra. Overactive bladder (OAB) - can coexist with bladder outlet obstruction, benign prostatic hyperplasia or neurological causes Urinary tract infections - cause temporary incontinence. Polifarmacotherapy - anticholinergics, bronchodylatics, antihistamines, diuretics. Negative activity of the detrusor muscle - results in a disturbed feeling of bladder fullness, delayed bladder contraction, slow urinary excretion and high urine retention in the bladder; this is a dysfunction particularly associated with older age[19]. Other previous operations (intestines, back, bladder) - may affect the anatomy and innervation of the lower urinary tract[11].

Symptoms of UI

Symptoms of the lower urinary tract (LUTS) are a common and expensive problem for society. To this end, a questionnaire was developed to examine men aged 40-80 living in Surahammar, Sweden. The questionnaire concerned three specific urinary symptoms: urgency, stress urinary incontinence, post-micturition dribbling and an attitude related to the search for healthcare.
It was found that LUTS occurred in 24% of study participants. The number increased from 20% in the group aged 40-49 to 28% in the group aged 70-80 ($P < 0.01$).
The most numerous symptom was Post-micturition dribbling (21%), and the rarest stress incontinence (2.4%).
Only 4% of participants looked for health care, this number increased with age ($P < 0.001$). The low popularity of consulting these symptoms is associated with limited knowledge about their illness[18].

Another study on the symptoms of the lower urinary tract (LUTS). The study group included 5,284 men without history of prostate cancer, older Americans from six clinical centers in the US having at least 65 years of age.

Incidence of LUTS among participants completing surveys: absent in 2.3%, mild in 51.6%, moderate in 39.6%, severe in 6.6%.

With increasing severity of LUTS symptoms (P <0.001); dissatisfaction increased (in 19.8% moderate and 58.1% men with severe LUTS), the respondents stated that they were generally dissatisfied with their current state of the urinary tract. With increasing age, the incidence, dissatisfaction and severity of LUTS also increased. Intensity of lower urinary tract symptoms contributes to a reduced quality of life as well as to difficulties in performing everyday activities [19].

Post-micturition dribble (PMD) occurs when the subject develops involuntary loss of urine immediately after urinating and leaving the toilet [20]. This symptom is not dependent on stress or bladder dysfunction [21].

Post-micturition (PM) symptoms is the feeling of incomplete emptying after urinating and dribble after a meal [22].

Treatment

Treatment of UI in men can be divided into conservative non-invasive treatment, pharmacotherapy, instrumental methods and surgical treatment. The implementation of UI treatment depends on the severity of symptoms. One should start therapy with conservative methods, going to more advanced methods when failure to use previous ones [14].Conservative treatment includes - changing lifestyle, increasing physical activity, treatment of obesity and weight loss, modification of current pharmacotherapy (elimination or substitution of medication whose possible side effect is UI), effective treatment of constipation, limitation of fluid and caffeine supply, electrical and magnetic stimulation , pelvic floor muscle training (PFMT; recommended exercises improve closure and stabilization of the urethra, are particularly recommended in people with stress and mixed UI, should be used for a minimum of 3 months, the effectiveness of training increases - greater intensity of exercise, specialist supervision, positive biofeedback, additional electrostimulation; PFMT is recommended by the European Society of Urology in patients after radical prostatectomy, despite the existence of contradictory scientific reports on the effectiveness of these exercises in this group of patients - rapid start of pelvic floor muscle training after prostatectomy may reduce the intensity of UI and improve the quality of life of patients)[12]. In older people with limited mobility, cognitive impairment or dementia, but able to urinate alone, scheduled urination at scheduled times, change of urine urine habits, and bladder training may be effective. [13] In the pharmacological treatment of UI in men can be used - anticholinergic (antimuscarinic), adrenergic (selective beta-3 adrenergic agonist - mirabegron), duloxetine or desmopressin[12].

The methods of invasive treatment of urinary incontinence in men are:

· External occlusive devices, such as penile clamps - used in men with stress incontinence

· Intraurethal occlusion devices (uretrhal plug) - prevent mechanic stenosis of the urethra and protect against uncontrolled leakage of urine, remove them before micturition

· External collecting devices, e.g. a condom with a leg bag - used in men with urgent stress UI and urinary incontinence and in patients with limited mobility, increases the risk of urinary tract infections

· Infusion catheters - chronically immobilized patients, a lot of risk of urinary tract infections and urethral bedsores[13].

The ineffectiveness of all the aforementioned therapeutic methods may result in the need for treatment treatment. The operating methods used in men are:

Periarticular injections with sealing material for urethral closure - the improvement is short-term (up to 3 months), repeated injections are required, use only in moderate UI. Treble tapes, minislings (single-incision sling tape), adjustable slings - the effectiveness of such treatment is definitely lower than in women (average 49.5%), the effects of using tapes are worse in men with significantly increased UI, after radiotherapy or after treatment due to narrowing of the urethra.

Artificial urethral sphincter (AUS) - in the case of moderately and severely intensified UI, a lot of complications and removal of AUS in case of erosion or infection.

Intravesical injections of botulinum toxin type A (BTX) in patients with OAB (overactive bladder), beneficial effects in patients with urgent UI and after failure of treatment with antimuscarinic drugs [12].

Discussion

Urinary incontinence (UI) is a common health problem among older adults with prevalence ranging from 17 to 55% in older women and 11–34% in older men [23]. UI occurs mostly in men between 60-79 years old and the prevalence of UI in men is increasing with the age [24]. Study found that the overall prevalence of urinary incontinence in community-dwelling Australian men aged ≥70 years was 14.8% [25]. Although urinary incontinence in men seems to be a common problem, most of men do not report UI to doctors and wait with start of the treatment. UI is not only the heath problem, it also significantly decreases the Quality of Life, lead to depression, shame, worsening of sexual life, withdrawal from public life.

UI is associated with worse QoL as measured by the SF-12 scale. UI is more strongly associated with the physical component than the mental component of the SF-12. Older men with incontinence have poorer self-perceived general health than men who were continent[25].

UI is common among older men and is associated with worse QoL. Health care professionals should discuss UI with older men, because these group of patience is not able to talk about UI, due to shame. With an increasingly elderly population, the prevalence of UI will be still increasing[25]. Talk about appereance of UI symptoms should be obligatory point of every follow-up appointment of elderly men. It is still necessary to educate the society about UI symptoms, risk factors and methods of treatment. It is also important to emphasize the importance of a lifestyle - diet, obesity, lack of physical activity - for the UI symptoms appearance. Also further researches about UI should be conduct to investigate if there is a relationship between UI and development of functional dependence and institutionalisation and to findbetter methods of treatment[26].

Summary

The problem of urinary incontinence in women has been discussed for a long time. Males are more and more affected by this ailment. In addition to erectile dysfunction, they treat urinary incontinence as a very embarrassing disorder. The pathogenesis of NM is not known exactly, but it occurs in more and more men. Mostly, they are ashamed to hide the problem. Males in the urogenital system do not cause pain symptoms, which is why they often

ignore this problem. Unfortunately, neglected, it can sometimes lead to disorders in the functioning of the genitourinary system, where eye and even ocular pharmacology treatment will be necessary. Patients are ashamed to talk about an existing problem even with a doctor. Overcoming the fear of the visit and honest conversation with the doctor opens the possibility of accurate diagnosis and treatment. There are many options for treating urinary incontinence. Depending on the severity of the disease and symptoms, the specialist decides to choose the best way to get rid of this disease. However, there is no known method that can quickly and completely cure UL. It is necessary to conduct research among people with incontinence in both women and men in order to find a 'golden mean'.

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