

Nietrzymanie moczu u kobiet – diagnostyka i leczenie zachowawcze w gabinecie fizjoterapeutycznym

Woman urinary incontinence - diagnostic and conservative treatment making by physiotherapist

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Streszczenie

Wstęp.

Nietrzymanie moczu jest problemem uznanym przez Światową Organizację Zdrowia za chorobę społeczną. W standardach Międzynarodowego Towarzystwa Kontynencji (ICS), towarzystw ginekologicznych i urologicznych postępowanie w I i II stopniu NM rozpoczyna się leczeniem zachowawczym prowadzonym przez fizjoterapeutę.

Cel pracy.

Celem pracy jest podkreślenie roli i możliwości dodatkowej diagnostyki, jaką można przeprowadzić w gabinecie fizjoterapeutycznym.

Wnioski.

Leczenie zachowawcze z wykorzystaniem dostępnej aparatury, urządzeń, kwestionariuszy ankiet daje szerokie możliwości wnikliwego potraktowania tematu jakim jest NM u kobiet. Wykorzystując te narzędzia można uchronić pacjentki przed zbyt wczesną (pod względem wieku i zaawansowania objawów) interwencją chirurgiczną.

Słowa kluczowe:

nietrzymanie moczu, wstępna diagnostyka, leczenie zachowawcze, fizjoterapia

Abstract

Introduction.

Urinary incontinence is a problem recognized by World Health Organization as a social disease. The standards of the International Continence Society (ICS), gynecological and urological societies I and II degree UI begins with conservative treatment conducted by a physiotherapist.

Aim.

The aim of this work is to emphasize the role and possibility of additional diagnosis carried out by physiotherapist.

Conclusions.

Conservative treatment with available technologies, devices, questionnaires allows wide possibilities of insightful approach to the topic which is woman urinary incontinence.

Key words:

urinary incontinence, presumptive diagnosis, conservative treatment, physiotherapy

Introduction

Urinary incontinence (UI), recognized by the World Health Organization (WHO) as a social disease, may occur in both genders. According to the International Continence Society (ICS), the problem of urinary incontinence, which affects 10-40% of women [1], ranks first on the list of female so-

cial diseases, and is followed by: hypertension (21%), depression (20%), and diabetes (8%). As results from the report of 2012 [2], as many as 50% of women may suffer from this condition in some periods of life, including about 33% of perimenopausal women [3].

Urinary incontinence has a lot of causes, but changes of the value hormones can be considered the main. In Chmielewska's study, the women were divided into four groups according to their ages: 41-50, 51-60, 61-70 and 71 and older [4]. The results confirmed that the group of the oldest women (> 71 years of age) have the most severe symptoms, and that symptoms of urinary incontinence increase with age.

Similar observations were made by Dutkiewicz, who examined postmenopausal women (60 female residents of the medical care and nursing home) and found that dysuria is more common after 70 years of age [5].

Bump and Norton [6] classify risk factors of stress incontinence as follows: predisposing, inciting, promoting, and decompensating. Predisposing factors include: genetic, racial, anatomical, cultural, collagen, and neurological. In the group of inciting factors are: vaginal delivery, injuries to the muscles or/and nerves, surgeries, and radiation factors. Promoting risk factors are: age of a woman, environmental diseases, and dementia. Decompensating factors include: physical activity of a woman, diet, bowel dysfunction, drug-induced factors, infections of the lower urinary tract, obesity, mental diseases and menopause.

Aim

The aim of this work is to emphasize the role and possibility of additional diagnosis carried out by physiotherapist.

Diagnosis and treatment

The close co-operation between a physiotherapist and three medical specialists: a family doctor, a gynecologist, and an urologist, is necessary for a quick diagnosis and implementation of conservative treatment in patients with urinary incontinence [7]. A physiotherapist can examine the patient to determine the type and the severity of urinary incontinence, and apply a wide range of therapies within conservative treatment recommended by the Polish Gynecological Society, the World Health Organization (WHO), and the International Continence Society (ICS) [8].

The physiotherapist makes initial evaluation of the patient's body weight and calculates her BMI (body mass index). Quetelet's index II over 30 is urinary incontinence risk factor and should be explain [9, 10]. Overweight, and especially obesity, is a factor contributing to urinary incontinence. What is more, available studies show that higher BMI values are accompanied by more severe symptoms [11].

The aim of a detailed medical interview during the first visit is to detect all risk factors of urinary incontinence that have not been identified yet. Medical interview should include questions: age, the time of the menopause, BMI, smoking cigarettes, alcohol and coffee consumption, concerning chronic diseases accompanied by sneezing, coughing,

constipation, physical activity of the patient, the type and numbers of deliveries, urinary incontinence in pregnancy and in the family history, the pain of the lumbar or sacral region of the spine. Medical interview should include question about chronic cough (allergy, COPD, smoking cigarettes, chronic bronchitis etc.). Cough adds extra strain on the pelvic floor muscles, and if persistent it can contribute to urinary incontinence [12]. Both obesity (BMI > 30) and chronic cough increase the abdominal pressure. On average the pressure on the pelvic floor rises by nine kilograms.

Next, the patient is additionally reviewed on the episodes of urinary incontinence using a simple three-question test (The 3 Incontinence Questions – 3IQ) [13]. It is mainly conducted to find out whether the patient suffers from urge incontinence or stress incontinence. There are also several very popular questionnaires: the Gaudenz-Incontinence-Questionnaire, the Kings Health Questionnaire (KHQ), and the ICIQ-LUTSqol. These questionnaires are considerably longer and more detailed. They include questions concerning the frequency, circumstances, and subjectively estimated amount of urine leakage, as well as emotional and social aspects having effects on the quality of patients' lives.

Though it is time-consuming, it is recommended to keep a voiding diary in order to track the pattern of urine leakage. During her first visit, the patient receives a form to fill in for one week, which helps her to define the type of urinary incontinence: overactive bladder, stress incontinence, mixed incontinence, or nocturia. A voiding diary is a 24-hour recording of the liquid intake and urine output. It is easy to complete and patients have no problems with it [14].

A cough stress test is the functional assessment in which pressure is put on the pelvic floor muscles. A patient with the full bladder coughs several times, which increases her intra-abdominal pressure and, when accompanied by urinary sphincter failure, causes urine leakage. The positive test result indicates to the problems associated with stress incontinence.

Another functional test is a sanitary pad test, performed by gynecologists to estimate the amount of urine per: 1 hour, 12 hours and 24 hours. During everyday activities at home, the patient wears a pre-weighed sanitary pad. An increase in weight of 10-50 g is regarded as a sign of urinary incontinence. In one-hour test, after special physical activity, a measure of the severity of urinary incontinence is an increase in the weight of the sanitary pad: <2 g – dry, 2÷10 g – moderate urine leakage, 10÷50 g – heavy urine leakage, >50 g – very heavy urine leakage [15].

Based on the preliminary diagnosis, the patient can be referred to a gynecologist for urodynamic and other possible urogynecological examinations (ultrasounds) to confirm urinary incontinence.

Conservative treatment of urinary incontinence

Pelvic floor muscles exercises are doing for supporting for internal organs and for their good functioning. Training programs differ in the number of repeated contractions, the number of series of contractions, and the number of repeated series throughout the day [3, 16], therefore there are no scheme until today how to exercise. Exercises for the pelvic floor muscles are often supported by Pilates [17, 18]. Most exercises in this method engage the deep abdominal and pelvic floor muscles, conditioning the pro-

per posture of the body. These muscles, especially the transverse abdominal muscle, should be exercised as often as possible by women with all types of urinary incontinence. Pilates improves the control and awareness of the body, and are accompanied by segmental breathing (lateral rib).

Very effective way of learning and forming correction pelvic floor muscles contraction is surface electromyography, sEMG. Using vaginal electrode (probe), we measure electrical muscle potential. In results of the observation are: muscles activation, relaxation, fatigue. SEMG is also used as a biofeedback form, because many patients cannot localize own pelvic floor muscles and to obtain the correct contraction [19].

Devices available on the Polish market offer the possibility of combining electrical stimulation of the pelvic floor muscles with biofeedback. Studies show that the combination of the pelvic floor muscle training (PFMT) with one of supporting therapies (i.e. biofeedback, intravaginal electrical stimulation, vaginal cones) gives very good results (recovery in 73% and improvement in 97% of cases) [20]. The study of 2011 demonstrated that 12 weeks of the biofeedback therapy significantly improved the functioning of the pelvic floor muscles in the lying position, and the results were better than in the group of patients who performed only the recommended exercises without visual assistance [21]. The effectiveness of this method ranges from 38% to 81% [22].

Portable sEMG device are good results for patient for home rehabilitation. Electrical stimulation, as a passive method, is a patient-friendly therapy, in which the tension of the pelvic floor muscles is obtained via the vulvar nerve [23]. It leads to the strengthening of perineal muscles, restructuring of the muscle resulting in a higher number of type I fibers (slow twitch, fatigue-resistant), and revascularization. Doyle demonstrated that electrical stimulation causes a shift of the neck of the bladder in the sagittal plane and the restoration of the posterior urethrovesical angle [24].

It is necessary to contact with the physiotherapist, who will determine the type of urinary incontinence and match the therapeutic program to individual predispositions of the patient, or will select the apparatus with the built-in program. What may be subject to change is: the frequency, the duration of impulses, the rise time and the fall time, amperage, and the duration of the whole procedure. Amperage is established on the basis of the patient sensations, which may change depending on the stage of the cycle, the filling status of the bladder and rectum, and other individual features such as impedance and resistance of the vaginal mucous membrane. The review of the parameters in several devices available in the market reveals certain regularity: the duration of an impulse is about 200-300 μ s, the frequency of stimuli is 10-50 Hz. We can make it a rule that the weaker the muscles, the shorter the duration of the contraction and the longer the rise time of an impulse [25]. It is also assumed that the patient who is able to contract the muscles actively by herself should do it on her own, with electrical stimulation causing only a slight tingling sensation, since electrical stimulation evoking a passive

contraction is not recommended where volitional contraction is possible [26].

Urogenital diaphragm insufficiency in urinary incontinence can be treated by perineometer. This method, first described by Kegel, is simple, low-invasive and more comfortable for those patients who are afraid of introducing electrodes to their vaginas [27, 28]. A disadvantage of such exercises is the fact that the material (synthetic, rubber) of which the balloon is made can considerably distort the results (i.e. the strength of the contraction). A vaginal manometer works similarly to typical manometers for measuring the muscle strength. Tension of the pelvic floor muscles causes the inclination of the pointer on a scale or a display.

Education of the patient, increase in her awareness of the functioning of the pelvic floor muscles and ability to use them properly can be also achieved by means of the so-called 'educator'. It is a biofeedback method, the use of which does not cause any problems. A plastic element inserted in the vagina is joined to an indicator jutting out of the vagina. Contractions of the pelvic floor muscles (especially musculus levator ani) are very well visible, as they are indicated by the gauge pointer. When the pointer moves backwards, the muscles are being contracted properly. When the pointer moves in opposite direction or move out of, it means that patient did pressure [29].

If we use specialist vaginal cones or cylinders it is important to match their weight and size, since these are factors that may facilitate or hinder the work of the muscles [30]. The patient's ability to keep them in a vertical position without excessive concentrating on it, is an effect that we want to achieve. It may happen if the patient wears cones for too long, which is why they are mainly used to increase patients' motivation and awareness [31]. This method was introduced to conservative treatment of urinary incontinence by Pattie. In the beginning, metal cones (20-100 g) were used, and now we apply plastic containers with weights of 5 g, 10g or 2 x 20 g. The exercise of keeping a cone in the vagina lasts from 15 to 20 minutes. If the patient keeps it without any problems during her everyday activities for the next two days, the weight is increased [2, 32, 33].

Another method of reducing problems associated with urinary incontinence is vibration training. A tonic vibration reflex (TVR), produced by vibrations, is used in sport to improve the coordination of nerves and muscles. As the frequency of mechanical vibrations increases, the muscle tension increases too. The effectiveness of this method in the treatment of urinary incontinence is not well-known yet, since there are few studies of this issue [34].

Conclusions

Urinary incontinence is a disease should be first examined by gynecologist and urologist. In article, authors want to emphasize the role and possibility of additional diagnosis carried out by physiotherapist. For the sake of patients, should to pay particular attention to other specialists enlarged a group of people that deal with this issue. Conservative treatment with available technologies, devices, questionnaires allows wide possibilities of insightful approach to the topic which is woman urinary incontinence. Using them can protect patients against too early (by age and severity of symptoms) surgical intervention.



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