

Urinary incontinence – introduction to diagnostics

(Niedotrzymanie moczu – wprowadzenie do diagnostyki)

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Abstract – The authors have presented the historical background of urodynamic tests and emphasised the significance of well-collected medical history to the diagnostics of lower urinary tract functional disorders. They have characterised the initial treatment. They pointed out the helpfulness of the questionnaires to be used: ICIQ-SF, UDI 6SF, the Gaudenz Questionnaire, MESA etc.

Key words - urinary incontinence, initial treatment.

Streszczenie – Autorzy przedstawili rys historyczny badań urodynamicznych, podkreślili znaczenie dobrze zebranego wywiadzie diagnostyce zaburzeń czynnościowych dolnych dróg moczowych. Scharakteryzowali poszczególne składowe postępowania wstępnego. Przypomnieli o istnieniu szeregu kwestionariuszy np. ICIQ-SF, UDI 6SF, Gaudenza, MESA pomocnych w szczególnej ocenie zaburzeń.

Słowa kluczowe - niedotrzymanie moczu, postępowanie wstępne.

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- A. The idea and the planning of the study
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I. INTRODUCTION

The history of urodynamic tests dates back to the 19th century. In 1872, in order to study the pressure in peritoneal cavity, punctured a bladder and measured the pressure while the bladder was being filled. In 1876, Dubois measured the pressure in the bladder depending on the body position. However, it was not until the 20th century that devices monitoring the filling and emptying of bladder were introduced. In 1959, Saul Boyarsky created the first urodynamic laboratory. Thanks to modern pressure measurement devices (microsensors etc.), digitalization, and the development of objective lower urinary tract disorder classification systems, the 1980s and 1990s are considered a golden era in urodynamics [1-3].

II. INITIAL TREATMENT

The diagnostics of functional disorders of lower urinary tract is based mostly on well-prepared medical history and clinical symptoms. A helpful resource for the correct diagnostics is “The Recommendations of the Polish Gynaecological Society on the diagnostics and treatment of urinary incontinence in women”. The guidelines described there

are in line with the recommendations by International Consultation of Incontinence (ICI) and International Continence Society (ICS) (Figure 1). According to the aforementioned source, the treatment of female patients with urinary incontinence is divided into [3-5]:

1) initial treatment

2) specialist diagnostic and therapeutic treatment

The guidelines also state that whatever the proceedings applied initially, they should always be deemed “initial” [5,6].

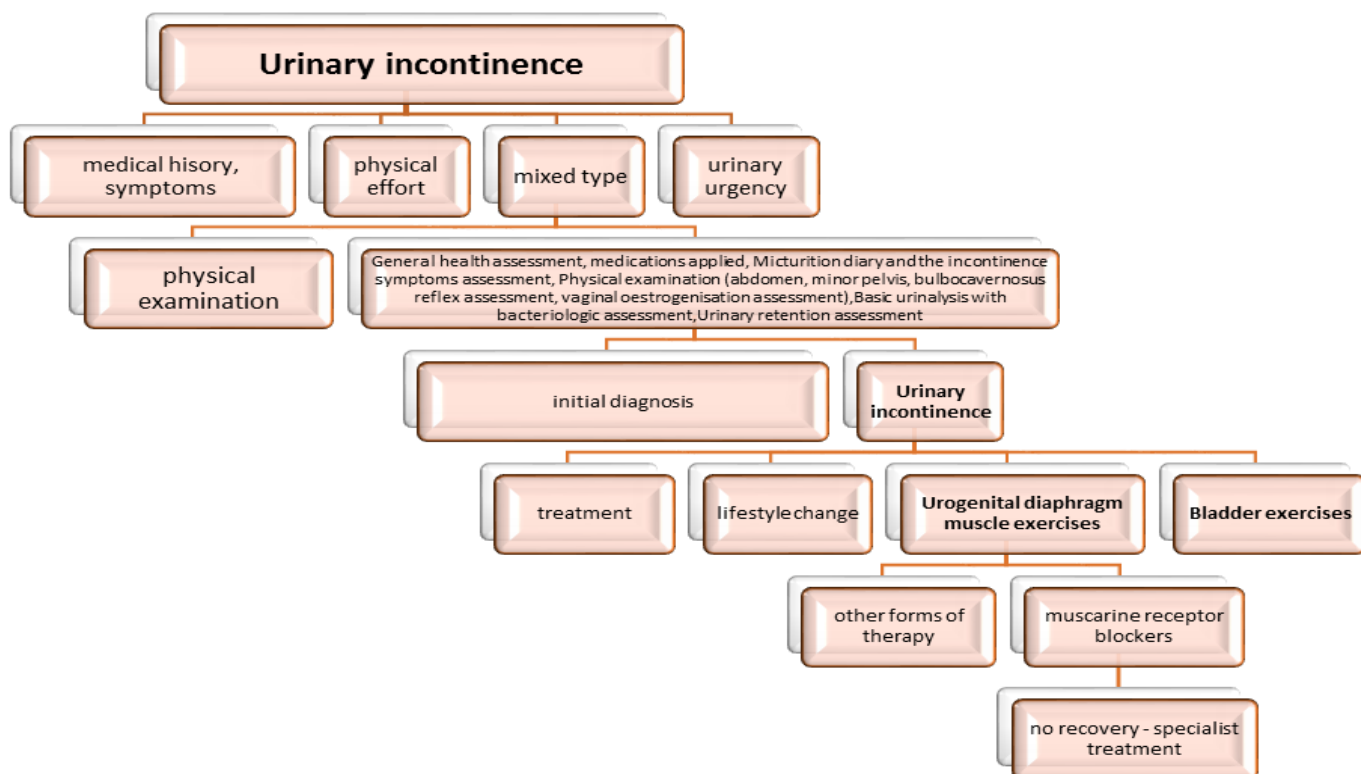


Figure 1. Initial treatment in cases of urinary incontinence in women [7]

As initial assessment, the following steps need to be taken [1,2]:

- Getting the medical history,
- Gynaecological examination,
- Laboratory urinalysis,
- Functional tests,
- Implementing and keeping the urination frequency and volume diary.

The objectives of the basic assessment are [2,3]:

- Assessing the nature of urinary system functional disorders (stress, urge, mixed, or overflow disorders).
- Defining possible causes of the disorder (neurological ones, diabetes, menopause)
- It has to be added that incontinence is very common in cases of multiple sclerosis, but also in cases of patients after strokes and with dementia. A neurological examination is therefore recommended, but not obligatory.

- Urinary tract infections can be manifested by nocturia (or nycturia, as both these names are commonly used) and haematuria. The assessment of the treatment so far and the current pharmacotherapy.
- Assessing a patient's habits, such as liquid consumption, urination frequency, situations in which urination urge occurs etc.

A very important role is played by going into details when gathering the medical history data. That way, the occurrence of the following symptoms caused by changes in the bladder and urethra can be either confirmed or ruled out [1,2,3]:

- Symptoms related to urine being collected in the bladder, such as overactive bladder symptoms (urge urinary incontinence, urinary urgencies, increased urination frequency, nocturia); as well as pain disorders and stress;
- Micturition-related symptoms — slow or interrupted urine stream, urine dripping towards the end of micturition, or the necessity to support the micturition with pressure;
- Symptoms appearing after micturition – urine dripping and ailments related to the incomplete bladder emptying;
- Suspicious symptoms such as haematuria (presence of blood in urine) and dysuria (pain during urine flow), which may suggest bladder tumours or urinary tract infections.

Thus, collecting full and comprehensive medical history involves finding out whether [8,9]:

- The aforementioned symptoms occur?
- What is their intensity and frequency?
- What is the symptom frequency during day and night?
- Are there any factors to mitigate those symptoms?
- How can the patient adjust to the symptoms that occur?
- What is the impact of the aforementioned symptoms on the patient's functioning and life?

There are many specialist questionnaires which help assess the symptoms in great detail. Some of them are: ICIQ-SF, UDI 6SF, the Gaudenz Questionnaire, MESA. They are all questionnaires recommended by the International Consultation on Incontinence. However, it has to be emphasised that their diagnostic value varies depending on the incontinence type [10].

The basic question should be the one about the occurrence of urinary incontinence and urgency. An affirmative

answer automatically expands the medical history with the circumstances of incontinence or urinary urgency:

- Incontinence when coughing, sneezing, exercising
- Incontinence preceded by urgency
- Polyuria during the day or night

Adequately formulated questions in the right order may lead to a preliminary suggestion as to the incontinence type [11]:

- a) Does incontinence occur when coughing, sneezing, or during exercise?
- b) Does incontinence occur when you do feel the urgency, but you could not get to a restroom in time?
- c) Does incontinence occur with no physical activity and without urgency?
- d) Does incontinence occur equally frequently during exercises and when feeling the urgency?

If the patient selects the “a) answer”, this suggests stress urinary incontinence, at least in a major part. The recommendation in this case is to exercise pelvic floor muscles or to undergo a surgery.

The choice of “b)” indicates urge incontinence, at least in a major part. These patients should be treated with anticholinergic medications (oxybutynin, solifenacin, tolterodine, fesoterodine, darifenacin, trospium) plus intravaginal oestrogens in women with the symptoms of urogenital atrophy. In case there is no recovery or the reaction is intolerance, the application of botulinum toxin directly to the bladder must be considered. [12]

In turn, an affirmative answer to “c)” means that there is another cause at stake. This requires further radiological and urodynamic diagnostics. Radiology provides very valuable information for urinary incontinence diagnostics, scrutinizing the changes in topographic relations of the organs in minor pelvis. Front-back and lateral cystourethrography is performed while standing up and while lying down, before and during micturition. Additionally, a correct urography may provide similar kind of information without the risk of causing urinary tract infection [13].

Providing the “d)” response by a patient is a basis for diagnosing mixed type of incontinence. In such a case, diagnostics should be started from the most dominant symptom. The conclusions from the medical history should be supplemented with further diagnostic procedures [1,2].

Gynaecological examination

In a physical gynaecological examination (which, sadly, is not always performed), the attention should be paid to [7]:

- The presence of skin macerations and inflammations in the pudendum area on vaginal vestibule – assessing the condition of the epithelium and the location of the external urethral orifice,
- In vaginal area: examining the condition of mucosa and checking if the front vaginal wall is not lowered (so-called cystocele), whether metroptosis exists, and whether ecchymosis, symptoms of atrophy, or vaginal dryness are the case,
- In urethra: assessing its sensitivity to palpation and flexibility,
- In the pelvic floor: assessing the levator ani muscle condition,
- In the uterus and adnexa: assessing if there are no tumours and if there are no tumours in the minor pelvis.

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