VILNIUS UNIVERSITY

INSTITUTE OF EXPERIMENTAL AND CLINICAL MEDICINE
AT VILNIUS UNIVERSITY

Gintautas Mereckas

URINARY INCONTINENCE, ERECTILE DYSFUNCTIONS AND QUALITY OF LIFE IN ELDERLY MEN OF VILNIUS CITY

Summary of the Doctoral Dissertation
Biomedical Sciences, Medicine (07 B),
Gerontology (B 670)

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The dissertation in full text is available at the Library of Vilnius University (Universiteto str. 3, LT-01122 Vilnius, Lithuania) and at the Library of the Institute of Experimental and Clinical Medicine at Vilnius University (Žygimantų str. 9, LT-01102 Vilnius, Lithuania).

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EKSPERIMENTINĖS IR KLINIKINĖS MEDICINOS INSTITUTAS

Gintautas Mereckas

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ABBREVIATIONS

CI – confidence interval
IADL – Instrumental Activity of Daily Living
ICS – International Continence Society
IIEF – International Index of Erectile Function
n – the number of persons examined
OR – odds ratio
QOL – Quality of Life
p – significance level
SD – standard deviation
UI – Urinary Incontinence
WHOQOL – World Health Organization Quality of Life
χ^2 – Chi-square criterion

INTRODUCTION

Urinary Incontinence is a big problem all over the world. International Continence Society defines urinary incontinence (UI) as a state which occurs objectively as involuntary leakage of urine and causes social as well as hygienic problems. Bladder dysfunction causing UI or its continence is an important medical, hygienic, care and social problem of elderly people. Persons over 60 suffer from UI more often than from heart and vascular disease, hypertonic disease or other chronic diseases. According to the data provided by German scientists, 0.5 million (8%) of men over 60 have this problem. In Germany, 0.9 million men suffer from urinary incontinence for more than 5 years. In Sweden, the prevalence of UI among men of 45 and over living in community is 9.2%. UI is increasing statistically significantly in arithmetical progression from 3.6% (for men of 45) to 28.2% (for men of 90); in the United Kingdom the prevalence of UI among men aged 65 and over living in community amounts to 23%. In different age groups of men this dysfunction is distributed as follows: in the age group of 65–69 it makes 12 percent, in the age group of 75–79 it is 22%, and in the age group of 80 and over it is 34%. Within the nearest decade, upon the population growing older, and upon the increasing age of the population, rapid growth in the UI prevalence is foreseen. Scientific literature provides data that UI may cause sexual dysfunction in women, yet its effect on men is not known. According to Frankel (Frankel et al., 1998), changes in the system of lower urogenital tract admit of the suspicion of sexual dysfunction. Although recently a number of studies have been carried out, no data allowing to link sexual dysfunctions of men to UI were found. Though UI is a common problem of elderly people, people with this disorder are usually embarrassed to talk about it and consult doctors when it is too late. In case of the failure to take care of these people in due time, they become socially isolated, their activity becomes limited, these people socialize less, they are unwilling to discuss their problem with their family members. A person's psychological condition and self-esteem disimprove, self-confidence decreases, i. e. the quality of life (QOL) suffers.

In Lithuania, the prevalence of UI has not been known so far, nor have its causes been analysed, male sexual dysfunctions have not been studied, social and psychological problems of these people have not been analysed, their QOL has not been studied.

Aim of the study

To study urinary incontinence and erectile dysfunction characteristics and quality of life of elderly men living in Vilnius city.

Objectives of the study

1. To estimate the frequency of urinary incontinence in men of 55 and over residing in Vilnius city community and nursing institutions.
2. To assess risk factors which may possibly affect transient and constant urinary incontinence.
3. To identify the frequency of erectile dysfunctions among men with urinary incontinence aged 55 and over.
4. To analyse the quality of life of elderly men with urinary incontinence living in Vilnius city community and nursing institutions.

Statements defended

1. Urinary incontinence is more prevalent in elderly men living in nursing institutions than in elderly men living in the community.
2. Erectile dysfunctions are more common in men with urinary incontinence than in healthy men.
3. The quality of life of elderly men with urinary incontinence is lower than that of healthy men of the same age.

Scientific novelty

The present paper is one of the few studies conducted in Lithuania on the problem of urinary incontinence. The prevalence of urinary continence in men living in Vilnius city community and nursing institutions has been estimated for the first time. The obtained results were compared to the data of epidemiological studies conducted in other countries. Risk factors for urinary continence in men of 55 and older living in Vilnius city community and nursing institutions were assessed. The scientific novelty of the study also lies in the fact that erectile dysfunctions in elderly men with urinary incontinence were examined. There are not many scientific works on the relevant problem of erectile dysfunction. The present study provides the first analysis on the quality of life of elderly men with urinary incontinence and its development within the period of two years. Internationally acknowledged general and state-specific questionnaires were used for the study.

OBJECT AND METHODS OF THE RESEARCH

The respondent group was formed by the method of layer sampling. The men of Vilnius city community were divided into 9 groups (aged 55–59, aged 60–64, aged 65–69, aged 70–74, aged 75–79, aged 80–84, aged 85–89, aged 90–94, aged 95 and over). The number of men for each age group was obtained from the Residents' Register of the Department of Statistics under the Government of the Republic of Lithuania. The sample for each group was calculated considering the accuracy of prevalence estimation (± 3), confidence level 100 (1–α), where $\alpha = 0.05$, and the likely prevalence of the pathology in each age group (5–35% according to age group). After calculating the general size of the sample, the number of people for each stratum was defined taking into account the comparable part of an age group. The number was increased by 3% considering the possible frequency of irresponsiveness. A simple random sample formation method was applied for each stratum. The structure of the factual obtained sample is identical to the structure of male population of Vilnius city community aged 55–98. Criteria for including the respondents into the survey: 1) men living in Vilnius city community and nursing institutions; 2) persons born in Lithuania. Criteria for not including the respondents: 1) all persons having completed the questionnaire of cognitive function and having collected ≤ 10 points do not participate further in the study. The study was authorised by the Lithuanian Bioethics Committee.

All the respondents were interviewed by using the following questionnaires: 1. Incontinence Questionnaire designed for identifying the type of UI. It is comprised of 27 questions. 2. International Index of Erectile Function, designed for the assessment of erectile dysfunctions. 3. Questionnaire on possible Causes of Incontinence, designed for identifying the predisposal factors. 4. The World Health Organization (WHO) Quality of Life questionnaire WHOQOL – Bref. It is comprised of 26 questions and four areas

of study: physical health, psychological state, social relationships, environmental factors. 5. Questionnaire of Mini–Mental State Exam, designed for assessing cognitive function. 6. Questionnaire on Instrumental Activity of Daily Living. The respondents were assessed according to the conformity of 9 activities. 7. Geriatric Depression Scale questionnaire, designed for identifying the depression. It is comprised of fifteen questions. The survey was conducted by a physician at respondent's home.

In total it was planned to interview 570 men aged 55–74. 494 people were questioned (participation in the survey amounted to 86.67%). Average age of the respondents was 63.77 ± 5.37 years. Reasons for the failure to survey 76 people are as follows: 51 (67.1%) refused to participate in the survey, 25 (32.9%) had died.

It was decided to survey 508 elderly men. 294 people were questioned (participation in the survey amounted to 57.87%). Average age of the surveyed people was 83.04 ± 4.99 years. Reasons for the failure to survey 214 people are as follows: 71 (33.2%) refused to participate in the survey, 106 (49.5%) did not participate for other reasons, 37 (17.3%) had died.

168 men were questioned in five Vilnius nursing institutions. Average age of the surveyed people was 70.26 ± 13.63 years. The controls were men surveyed at the same time, having no complaints on UI.

The respondents were divided into 2 groups: the study group was made up of the men with UI, and the controls were men without this disorder. After comparing the study group with the controls we assessed the UI prevalence, named possible causes for UI, and the frequency of erectile dysfunction in the specified age groups. 2 years (± 6 months) after the first survey, 140 men with urinary incontinence living in Vilnius city community and 64 men with UI living in Vilnius nursing institutions were examined repeatedly. The respondents were interviewed with the same questionnaires. Information on the diseases of the respondents was collected from medical documentation.

Statistical data analysis was performed by applying *SPSS 12.0 for Windows* and *Epiinfo 6* software. The data are provided as average values plus/minus standard deviation (m ± SD). Statistical data processing was performed by applying standard methods: to check the normal distribution of variables a Chi-square (χ^2) criterion was used; for comparison, parametric (Student's, Fisher's) and non-parametric (Mann-Whitney-Wilcoxon) criteria were applied. Case and control study was used for evaluation of the effect of the selected factors on UI. The relation of the effect of a risk factor to UI was assessed by odds ratio. If the odds ratio (OR) of a factor was > 1, and $p < 0.05$, the analysed factor increased the risk of UI, and if the OR was < 1 and $p < 0.05$, the risk was lowered. The results were considered to be statistically significant, when error probability was $p < 0.05$, statistically significant.

RESULTS

1. Prevalence of urinal incontinence among men living in Vilnius community and nursing institutions

During the survey 494 men of Vilnius community aged 55–74 were questioned (Table 1). UI was diagnosed for 62 men, which amounted to 12.6%. Upon the increase in age the number of men with urinary incontinence increases from 6.3% (age group of 55–59) to 22.6% (age group of 70–74).

Table 1. Prevalence of urinary incontinence among men of Vilnius community aged 55–74

Group	Age (in years)	Number of people surveyed	With urinary incontinence		95 % CI
			Absolute number	%	
I	55–59	158	10	6.3	2.51–10.09
II	60–64	132	11	8.3	3.59–13.01
III	65–69	120	22	18.3	11.38–25.22
IV	70–74	84	19	22.6	13.66–31.54
Total		494	62	12,6	9.67–15.53

CI – confidence interval.

25 persons consulted a physician of the outpatient clinic on this dysfunction, 37 persons did not consult a physician (Fig. 1).

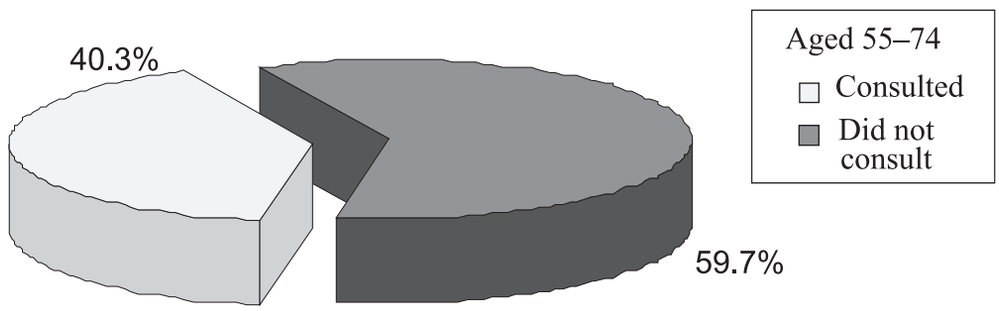

Fig. 1. Distribution of urinary incontinence among men of Vilnius community aged 55–74

4 men of all the respondents indicated that they had been suffering from UI for about a year, 48 said that they had been suffering from UI for 1–5 years, and 5–10 men had been suffering from UI for 5–10 years. The most common disorder of the respondent men was urge incontinence – 28 (45.2%) (Table 2). Stress UI was diagnosed in 3 (4.8%), mixed type of UI (i.e. stress UI and urge UI) was diagnosed in 18 (29.0%) men. For thirteen men, the UI type was not defined. 4 men (6.5%) had been using hygienic protective measures. Men of the study group urinated 7.45 ± 2.79 times in the daytime, 2.5 ± 1.52 times at night, every 2.35 ± 1.08 hours per day; men of the control group urinated respectively 4.94 ± 1.72 times in the daytime, 0.97 ± 1.05 times at night, and every 4.07 ± 1.52 hours per day ($p < 0.001$).

Table 2. Constant urinary incontinence in men of Vilnius community aged 55–74

No.	Types of urinary incontinence	Men (n = 62)	
		Absolute number	%
1.	Urge incontinence	28	45.2
2.	Stress urinary incontinence	3	4.8
3.	Mixed urinary incontinence	18	29.0
4.	Urinary incontinence not diagnosed	13	21.0

Data on the UI prevalence in men of Vilnius city community aged 75 and over are provided in Table 3. 78 men (26.5%) suffered from urinary incontinence. Upon the increase in age the number of men with urinary incontinence decreases from 32.8% (aged 75–79) to 9.1% (aged 95 and over).

Table 3. Prevalence of urinary incontinence among men of Vilnius community aged 75 and over

Group	Age (in years)	Number of people surveyed	With urinary incontinence		95 % CI
			Absolute number	%	
I	75–79	137	45	32.8	24.94–40.66
II	80–84	75	18	24.0	14.33–33.67
III	85–89	49	6	12.2	3.04–21.36
IV	90–94	22	8	36.4	16.29–56.51
V	95 and >	11	1	9.1	0.00–26.10
Total		294	78	26.5	21.46–31.54

CI – confidence interval.

46 men consulted a physician of an outpatient clinic, 32 men did not consult a physician regarding involuntary urinary incontinence (Fig. 2).

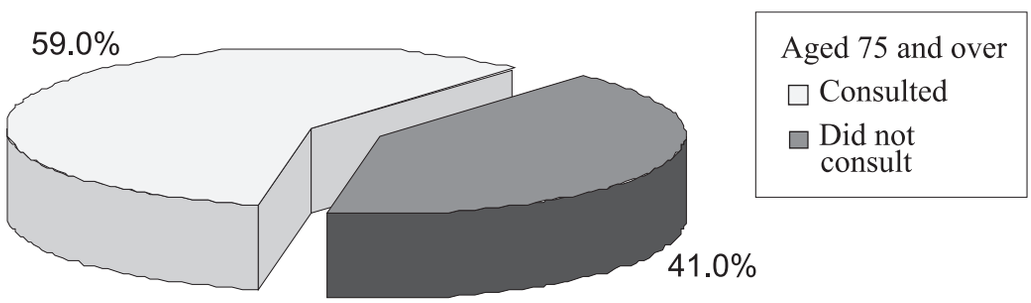

Fig. 2. Elderly people with urinary incontinence consulting a physician

7.9% of the respondents indicated that they had been suffering from UI for less than half a year, 3.9% of them had been suffering from UI from 6 months to one year, the majority of the respondents (67.1%) said that they had been suffering from UI from one to five years, 21.1% – for more than five years.

The most common disorder of the elderly men was urge incontinence – 41 (53.2%) (Table 4). Stress UI was diagnosed to 6 men (7.8%), mixed UI was diagnosed to 24 men (31.2%). No UI type was specified for 6 men. 10 men (13.0%) had been using hygienic safety measures. The men on average urinate 6.13 ± 2.60 (4.73 ± 1.37) times in the daytime, 3.13 ± 2.28 (1.93 ± 1.15) times at night, every 2.96 ± 1.20 (3.87 ± 1.22) hours per day; the difference is statistically significant in comparison with the controls, ($p < 0.0001$).

Table 4. Constant urinary incontinence in men of Vilnius community aged 75 and over

No.	Types of urinary incontinence	Men (n = 77)	
		Absolute number	%
1.	Urge incontinence	41	53.2
2.	Stress urinary incontinence	6	7.8
3.	Mixed urinary incontinence	24	31.2
4.	Urinary incontinence not diagnosed	6	7.8

Prevalence of UI among the men living in Vilnius nursing institutions, aged 50–54 is 25.0%; aged 55–74 it is 34.2%, aged 75–90 and over it is 47.1%. Jointly of men aged 50–90 and over the UI prevalence is 38.1%. (Table 5). All three men aged 95 and over who participated in the survey indicated UI. The majority of them, i.e. 22 (52.4%) had suffered from UI for more than five years, 14 (33.3%) had been suffering from UI from one to five years, 3 (7.1%) had been suffering from UI from six months to one year, and 3 (7.1%) had suffered from UI for less than half a year. 21 men (32.8%) consulted a physician regarding UI and 21 men (32.8%) did not consult a physician.

Table 5. Prevalence of urinary incontinence among men aged 50–90 and over living in Vilnius nursing institutions

Group	Age (in years)	Number of people surveyed	With urinary incontinence		95 % CI
			Absolute number	%	
I	50–54	24	6	25.0	7.68–42.32
II	55–59	12	3	25.0	0.50–49.50
III	60–64	13	6	46.2	19.05–73.25
IV	65–69	26	9	34.6	16.33–52.90
V	70–74	25	8	32.0	13.71–50.29
VI	75–79	27	11	40.7	22.21–59.27
VII	80–84	22	11	50.0	29.11–70.89
VIII	85–89	6	1	16.7	0–46.49
IX	90 and >	13	9	69.2	44.14–94.32
Total		168	64	38.1	30.76–45.44

CI – confidence interval.

The most common problem among the men living in Vilnius nursing institutions was urge incontinence: 25 (55.5%) (Table 6). Other types of UI distributed as follows: 4 cases (8.9%) of stress urinary incontinence, 13 cases (28.9%) of mixed UI. No UI type was specified for three examined men (6.7%). We were not able to measure the amount of involuntarily leaking urine of other three examined persons (7.1%) with urinary incontinence, since they were constantly using hygienic protective measures.

Table 6. Constant urine incontinence of men living in Vilnius nursing institutions

No.	Types of urinary incontinence	Men (n = 45)	
		Absolute number	%
1.	Urge incontinence	25	55.5
2.	Stress urinary incontinence	4	8.9
3.	Mixed urinary incontinence	13	28.9
4.	Urinary incontinence not diagnosed	3	6.7

Because of this disorder, men living in nursing institutions urinated on average 6.91 ± 2.54 (4.54 ± 1.41) times in the daytime, 2.80 ± 1.38 (1.39 ± 1.32) times at night, every 2.96 ± 1.20 (3.87 ± 1.22) hours per day. The difference differed statistically significantly in comparison with the control group ($p < 0.0001$).

2. Sociodemographical data

Statistically significant educational differences were identified in Vilnius city community men with UI aged 55–95 compared to the control group ($p < 0.001$). Dependence of UI on the nature of work and marital status has not been defined ($p > 0.05$). Dependence of UI if men living in nursing institutions on work, education, marital status has not been determined ($p > 0.05$).

3. Possible risk factors causing urinary incontinence in men of Vilnius city community

After conducting a study, possible risk factors causing transient UI in Vilnius city community men aged 55–74 were defined (Table 7). A strong causal relation of the following risk factors was found: antidepressants (odds ratio (OR) = 7.28; 95% CI 1.14–46.02; p = 0,030), α-adrenergic blockers (OR = 5.85; 95% CI 2.46–13.83; p = 0.001), antiparkinsons (OR = 14.85; 95% CI 2.28–119.5; p = 0.003), benzodiazepines (OR = 1.45; 95% CI 0.56–3.61; p = 0.001), constipation (OR = 2.45; 95% CI 1.19–4.99; p = 0.013) and depression (OR = 3.71; 95% CI 1.06–12.34; p = 0.029), causing UI. Average relation between the occurrence of this disorder and urinary tract infection was defined (OR = 14.39; 95% CI 1.01–407.21; p = 0.051), use of antihistamines (OR = 14.39; 95% CI 1.01–407.2; p = 0.052). A weak effect on the occurrence of transient UI was caused by diuretics (OR = 1.65; 95% CI 0.63–4.16; p = 0.375), spasmolytics (OR = 1.17; 95% CI 0.14–9.86; p = 0.610), type2 diabetes (OR = 3.09; 95% CI 0.62–13.8, p = 0.118).

Table 7. Possible risk factors causing transient urinary incontinence in Vilnius community men aged 55–74

No.	Risk factors	Men (n = 62)		OR	95% CI	p
		Absolute number	%			
1.	Urinary tract infection	2	3.2	14.39	1.01–407.21	0.051
2.	Medicaments:					
	duretics	7	11.1	1.65	0.63–4.16	0.375
	antihistamines	2	3.2	14.39	1.01–407.2	0.052
	tricyclic antidepressants	3	4.8	7.28	1.14–46.02	0.030
	α-adrenergic blockers	12	19.1	5.85	2.46–13.83	0.001
	antiparkinsons	4	6.4	14.85	2.28–119.5	0.003
	benzodiazepines	17	27.0	1.45	0.56–3.61	0.001
	spasmolytics	1	1.6	1.17	0.14–9.86	0.610
3.	Type 2 diabetes	3	4.8	3.09	0.62–13.8	0.118
4.	Constipation	14	22.2	2.45	1.19–4.99	0.013
5.	Depression	5	7.9	3.71	1.06–12.34	0.029

OR – odds ratio; CI – confidence interval.

Possible risk factors causing constant UI in men aged 55–74 were defined (Table 8). A strong causal relation of the following risk factors was found: earlier stroke (OR = 4.32; 95% CI 1.95–9.4; p = 0.001), Transurethral resection of the prostate (OR = 21.95; 95% CI 2.0–556.7; p = 0.002), benign prostatic hyperplasia (OR = 2.31; 95% CI 1.25–4.23; p = 0.005), limited mobility for a longer period of time (OR = 2.60; 95% CI 1.30–5.13;

p = 0.005), (e.g. stroke, chronic cerebrovascular disease, coax arthrosis, frequent heart strokes, bronchial asthma, chronic encephalitis), average cognitive disorder (OR = 3.62; 95% CI 1.36–9.42; p = 0.007), benign cognitive disorder (OR = 2.90; 95% CI 1.32–6.29; p = 0.006), causing constant UI. Average relation between the occurrence of UI and prostate tumour was defined (OR = 5.45; 95% CI 0.94–29.70; p = 0.062). There is a relatively weak relation between the disorder under consideration and Parkinson's disease (OR = 7.18; 95% CI 0.71–72.88; p = 0.078), retropubic prostatectomy (OR = 1.08; 95% CI 0.00–5.20; p = 0.580), coxal trauma (OR = 7.08; 95% CI 0.00–262.6; p = 0.59), irradiation of prostate tumour (OR = 7.18; 95% CI 0.71–72.88; p = 0.078), intervertebral disc herniation (OR = 7.08; 95% CI 0.00–262.61; p = 0.59), substantial cognitive disorder (OR = 7.08; 95% CI 0.00–262.61; p = 0.59). Stress UI developed in men 2.5 years after retropubic prostatectomy per formed because of the benign prostatic hyperplasia (3.2%) and 1.8 years after transurethral resection of the prostate (4.8%).

The results of the study demonstrate that UI in Vilnius city community men aged 55–74 is caused not by one, but by several causes. Two causes were indicated by 9 (14.3%) respondents, three causes were named by 12 (19.0%) respondents, and four causes were indicated by 7 (11.1%) respondents.

Table 8. Possible risk factors causing constant urinary incontinence in Vilnius community men aged 55–74

No.	Risk factors	Men (n = 62)		OR	95% CI	p
		Absolute number	%			
1.	Stroke	13	20.6	4.32	1.95–9.48	0.001
2.	Parkinson's disease	2	3.2	7.18	0.71–72.88	0.078
3.	Retropubic prostatectomy	2	3.2	1.08	0.00–5.20	0.580
4.	Transurethral resection of the prostate	3	4.8	21.95	2.0–556.7	0.002
5.	Coxal trauma	1	1.6	7.08	0.00–262.6	0.59
6.	Irradiation of prostate tumour	2	3.2	7.18	0.71–72.88	0.078
7.	Operation on intervertebral disc herniation	1	1.6	7.08	0.00–262.61	0.59
8.	Benign prostatic hyperplasia	22	34.9	2.31	1.25–4.23	0.005
9.	Prostate tumour	3	4.8	5.45	0.94–29.70	0.062
10.	Limited mobility	16	25.4	2.60	1.30–5.13	0.005
11.	Cognitive disorder:					
	substantial	1	1.6	7.08	0.00–262.61	0.59
	average	8	12.7	3.62	1.36–9.42	0.007
	mild	12	19.0	2.90	1.32–6.29	0.006

OR – odds ratio; CI – confidence interval.

After conducting a study, possible risk factors causing transient UI in Vilnius city community men aged 75 and over were defined (Table 9).

A strong causal relation of the following risk factors was found: α-adrenergic blockers (OR = 3.89; 95% CI 1.98–7.67; p = 0.001), and depression (OR = 2.51; 95% CI 1.13–5.55; p = 0.012) causing UI. Average relation between the occurrence of this disorder and type 2 diabetes was defined (OR = 4.93; 95% CI 1.00–26.78; p = 0.051).

A rather weak relation between UI and the use of duretics (OR = 1.31; 95% CI 0.60–2.81; p = 0.46), between UI and medicaments of benzodiapine group (OR = 1.70; 95% CI 0.88–3.27; p = 0.08), between UI and constipation (OR = 1.67; 95% CI 0.92–3.03; p = 0.070) was defined.

Table 9. Possible risk factors causing transient urinary incontinence in Vilnius community men aged 75 and over

No.	Risk factors	Men (n = 77)		OR	95% CI	p
		Absolute number	%			
1.	Medicaments:					
	duretics	13	16.9	1.31	0.60–2.81	0.46
	α-adrenergic blockers	26	33.8	3.89	1.98–7.67	0.001
	benzodiazepines	21	27.3	1.70	0.88–3.27	0.08
2.	Type 2 diabetes	5	6.5	4.93	1.00–26.78	0.051
3.	Constipation	28	36.4	1.67	0.92–3.03	0.070
4.	Depression	15	19.5	2.51	1.13–5.55	0.012

OR – odds ratio; CI – confidence interval.

After conducting a study, possible risk factors causing transient UI in men living in Vilnius city nursing institutions were defined (Table 10). A strong causal relation of the following risk factors was found: α-adrenergic blockers (OR = 6.67; 95% CI 1.52–33.27; p = 0.007), and UI, constipation (OR = 5.23; 95% CI 2.19–12.69; p = 0.001) and UI as well as depression (OR = 3.13; 95% CI 0.97–10.40; p = 0.03) and UI. A weak effect on this disorder was produced by duretics (OR = 1.26; 95% CI 0.37–4.27; p = 0.676), and benzodiazepines (OR = 1.01; 95% CI 0.45–2.26; p = 0.978).

Table 10. Possible risk factors causing transient urinary incontinence in men living in Vilnius nursing institutions

No.	Risk factors	Men (n = 45)		OR	95% CI	p
		Absolute number	%			
1.	Medicaments:					
	duretics	6	13.0	1.26	0.37–4.27	0.676
	α-adrenergic blockers	9	19.6	6.67	1.52–33.27	0.007
	benzodiazepines	18	39.1	1.01	0.45–2.26	0.978
2.	Constipation	25	54.3	5.23	2.19–12.69	0.001
3.	Depression	11	23.9	3.13	0.97–10.40	0.03

OR – odds ratio; CI – confidence interval.

Possible risk factors causing constant UI in men aged 75 and over were defined (Table 11). A strong causal relation of the following factors was found: Parkinson's disease (OR = 3.50; 95% CI 1.01–12.23; p = 0.046), benign prostatic hyperplasia (OR = 5.29; 95% CI 2.91–9.65; p = 0.001). Average effect on the occurrence of this disorder was produced by the following factor: stroke (OR = 2.16; 95% CI 0.91–5.08; p = 0.052). Weak relation between UI and the following factors was determined: retropubic prostatectomy

(OR = 0.68; 95% CI 0.29–1.58; p = 0.341), prostate tumour (OR = 2.93; 95% CI 0.71–12.09; p = 0.08), mild cognitive disorder (OR = 0.93; 95% CI 0.47–1.81; p = 0.815), substantial and average cognitive disorder (OR = 1.42; 95% CI 0.59–3.34; p = 0.386), limited mobility (OR = 1.02; 95% CI 0.58–1.77; p = 0.945). The most common reasons limiting their activity for a longer period of time were as follows: 1) earlier stroke, 2) chronic cerebrovascular disease, 3) coax, knee arthrosis, 4) unstable angina pectoris, 5) chronic obstructive bronchitis, 6) rheumatoid arthritis, 7) degenerative processes of the retina, 8) leg obliterating endarteritis, 9) Parkinson's disease, 10) heart arrhythmia. Of the 77 interviewed men with urinary incontinence, 9 (11.7%) had retropubic prostatectomy due to the benign prostatic hyperplasia and 2 (2.6%) had transurethral resection of the prostate.

Table 11. Possible risk factors causing constant urinary incontinence in Vilnius community men aged 75 and over

No.	Risk factors	Men (n = 77)		OR	95% CI	p
		Absolute number	%			
1.	Stroke	12	15.6	2.16	0.91–5.08	0.052
2.	Parkinson's disease	7	9.1	3.50	1.01–12.23	0.046
3.	Retropubic prostatectomy	9	11.7	0.68	0.29–1.58	0.341
4.	Benign prostatic hyperplasia	52	67.5	5.29	2.91–9.65	0.001
5.	Prostate tumour	5	6.5	2.93	0.71–12.09	0.08
6.	Limited mobility	36	46.8	1.02	0.58–1.77	0.945
7.	Cognitive disorder:					
	substantial and average	11	14.1	1.42	0.59–3.34	0.386
	mild	18	23.1	0.93	0.47–1.81	0.815

OR – odds ratio; CI – confidence interval.

Possible risk factors causing constant UI in men living in Vilnius city nursing institutions were defined (Table 12). It was found that strong causal effect on the occurrence of this disorder is produced by the benign prostatic hyperplasia (OR = 3.10; 95% CI 1.40–8.87; p = 0.040), substantial and average cognitive disorder (OR = 2.64; 95% CI 0.95–7.35; p = 0.036), limited mobility (OR = 3.21; 95% CI 1.24–8.55; p = 0.008). The limited mobility of the respondents of the survey was caused by the following factors: 1) residual effects of the ischaemic cerebral stroke, 2) Parkinson's disease, 3) senile cataract, 4) leg amputation, 5) heart arrhythmia, 6) coax, knee arthrosis, 7) multiple schlerosis, 8) chronic encefalomielitis, 9) blindness, 10) spastic paralysis, 11) chronic obstructive bronchitis. Average relation between the stroke (OR = 2.27; 95% CI 0.91–5.67; p = 0.052) and UI occurrence was determined. Parkinson's disease (OR = 1.93; 95% CI 0.38–9.79; p = 0.364), retropubic prostatectomy (OR = 0.91; 95% CI 0.25–3.18; p = 0.875), mild cognitive disorder (OR = 1.46; CI 0.50–4.21; p = 0.437) provided a weak effect on the occurrence of this disorder.

The results of the study lead to the statement that UI of different age groups living in Vilnius city nursing institutions is caused not by one factor but by several factors. 11.9% of the respondents indicated two predisposal factors, 21.4% of the respondents named three and four factors, and 14.3% of the respondents indicated 6 factors.

Table 12. Possible risk factors causing constant urinary incontinence in men living in Vilnius nursing institutions

No.	Risk factors	Men (n = 45)		OR	95% CI	p
		Absolute number	%			
1.	Stroke	15	33.3	2.27	0.91–5.67	0.052
2.	Parkinson's disease	4	8.9	1.93	0.38–9.79	0.364
3.	Retropubic prostatectomy	5	11.1	0.91	0.25–3.18	0.875
4.	Benign prostatic hyperplasia	20	44.4	3.10	1.40–8.87	0.040
5.	Limited mobility	37	82.2	3.21	1.24–8.55	0.008
6.	Cognitive disorder:					
	substantial and average	13	28.9	2.64	0.95–7.35	0.036
	mild	9	20.0	1.46	0.50–4.21	0.437

OR – odds ratio; CI – confidence interval.

Erectile dysfunctions of Vilnius city community men with urinary incontinence aged 55–74 were defined. 627 men aged 55–74 participated in the survey; 503 (80.2%) of them filled in the entire IIEF (International Index of Erectile Function) questionnaire comprised of 15 questions. 44 respondents (69.8%) out of 62 men with UI did not have sexual relations during the last 4 weeks, and 166 men (37.7%) out of 440 men of the control group did not have sexual relations.

Out of 19 (30.2%) men of the study group who had sexual relations during the last 4 weeks, only 4 (21.1%) have no erectile dysfunctions, and for 15 (78.9%) men mild erectile dysfunctions were defined. No severe or average erectile disorders were determined in men with UI. 176 (64.2%) men out of 274 (62.3%) men of the control group, who had sexual relations, did not have erectile dysfunction. In 7 (2.6%) men of the control group average erectile dysfunctions were defined, and in 91 (33.2%) men of the control group mild erectile dysfunctions were defined.

93.5% of 77 community men with UI aged 75 and over did not have sexual relations during the last 4 weeks. 94.4% of 216 men of the control group did not have sexual relations. However, it was not possible to assess the sexual health and the level of its disorders of 72 men of the study group and 204 men of the control group, because men participating in the survey did not have sexual relations during the last 4 weeks. Only 20.0% of 5 men of the study group who had sexual relations during the last 4 weeks indicated that their erection was normal, 40.0% named mild dysfunctions, and 40.0% indicated that they had severe erectile dysfunctions. 41.7% of the 12 men of the control group who had sexual relations reported no erectile dysfunctions, 50.0% of the respondents had mild and 8.3% of the respondents had severe erectile dysfunctions.

45 (70.3%) out of 64 men with UI living in Vilnius nursing institutions completed the IIEF-15 questionnaire. 97.8% out of 45 men with UI did not have sexual relations during the last 4 weeks, and 92.7% out of 82 men of the control group did not have sexual relations. During the analysis of the study group, one respondent (2.2%) noted that he had sexual relations during the last 4 weeks. Mild erectile dysfunction was diagnosed to him. 2 out of 6 respondents of the control group who had sexual relations, had normal erection, and four respondents had mild erectile dysfunctions. We were not able to assess the sexual health and the degree of its disorders of 44 (97.8%) men of the study group and 76 (92.7%) men of the control group, because they did not have sexual relations during the last 4 weeks.

A questionnaire of instrumental activity of daily living was used to assess the complex functions of daily living activity. This questionnaire determines whether the respondent is able to perform more complicated actions (e.g. shopping, housework, etc.), the scope of required assistance is also assessed. In Table 13, 45.0% of men with UI reported impaired functions assessed according to the IADL questionnaire.

Table 13. Daily living activity disorders of Vilnius city community men with urinary incontinence (according to the IADL scale)

Index	With urinary incontinence (n = 140)		Control group (n = 656)		p
	Absolute number	%	Absolute number	%	
Functions not disordered	77	55.0	482	73.5	0.001
Disordered functions	63	45.0	174	26.5	
Average of the point total	23.19 ± 5.53		25.45 ± 3.47		0.001

The analysis of the study results has shown that these functions are more disordered for men living in nursing institutions (Table 14) than for men of the community (45.0 and 73.3% respectively). Most often these men were not able to work independently (65.8%), 61.1% of them were not able to walk, 55.8% of them were not able to shop independently, and 65.8% of these men were not able to deal with financial matters independently. Thus none of the IADL functions were disordered for 48.1% of the men with UI, and they are completely independent.

Table 14. Daily living activity function disorders of the men with urinary incontinence living in Vilnius nursing institutions (according to the IADL scale)

Index	With urinary incontinence (n = 45)		Control group (n = 82)		p
	Absolute number	%	Absolute number	%	
Functions not disordered	12	26.7	37	45.1	0.041
Disordered functions	33	73.3	45	54.9	
Average of the point total	19.11 ± 6.16		22.94 ± 5.18		0.024

Quality of life analysis of Vilnius city community men aged 55–74 was performed (Table 15). The following areas of quality of life of Vilnius city community men aged 55–59 differed statistically significantly in comparison with the control group: physical health, psychological state, social relationships. For the men aged 60–64 only the area of physical health differed statistically significantly, for the men aged 65–69 the following areas of the quality of life differed statistically significantly: physical health, psychological state, environmental factors. No statistically significant difference of elderly men with urinary incontinence aged 70–74 in all four areas of quality of life (e.g. physical health, psychological state, social relations, environmental factors) was found in comparison with the control group. Physical health and psychological state of the studied men of two age groups (55–59 and 65–69) differed statistically significantly.

The following areas of quality of life of Vilnius city community men aged 55–59 differed statistically significantly in comparison with the control group: physical health, psychological state, environment (Table 16). Several areas differed statistically significantly

in the group of the men aged 85–95 and over: physical health, psychological state. Upon the comparison of the groups of men aged 75–84 and 85–95 and over, physical health and psychological state differed statistically significantly in both groups.

In total, the following areas of quality of men aged 75–95 and over differed statistically significantly in comparison with the control group: physical health, psychological state and the environment.

Table 15. Quality of life of elderly men living in Vilnius community

Age (in years)	Area	With urinary incontinence	Control group	p
55–59 With urinary incontinence (n = 10) Control group (n = 148)	Physical health	10.34 ± 2.88	14.14 ± 2.02	0.001
	Psychological state	10.67 ± 1.54	12.62 ± 1.89	0.002
	Social relations	11.73 ± 1.22	13.77 ± 1.82	0.001
	Environment	11.50 ± 1.68	12.28 ± 1.81	0.172
60–64 With urinary incontinence (n = 11) Control group (n = 122)	Physical health	12.46 ± 2.04	14.17 ± 2.14	0.031
	Psychological state	11.88 ± 1.99	12.66 ± 1.99	0.203
	Social relations	13.09 ± 2.29	13.94 ± 1.89	0.256
	Environment	12.81 ± 1.49	12.70 ± 1.89	0.93
65–69 With urinary incontinence (n = 22) Control group (n = 98)	Physical health	12.88 ± 2.52	14.35 ± 1.86	0.019
	Psychological state	11.18 ± 2.39	12.78 ± 1.87	0.012
	Social relations	12.97 ± 2.33	13.61 ± 1.78	0.402
	Environment	12.22 ± 1.59	13.43 ± 1.96	0.009
70–74 With urinary incontinence (n = 19) Control group (n = 65)	Physical health	13.23 ± 2.81	13.88 ± 2.07	0.628
	Psychological state	12.28 ± 1.48	12.67 ± 1.90	0.252
	Social relations	12.77 ± 2.00	12.92 ± 2.22	0.772
	Environment	12.03 ± 1.94	13.15 ± 1.67	0.22
Total With urinary incontinence (n = 62) Control group (n = 433)	Physical health	12.51 ± 2.77	14.19 ± 2.14	0.001
	Psychological state	11.56 ± 1.99	12.69 ± 1.88	0.001
	Social relations	12.73 ± 2.09	13.58 ± 1.99	0.002
	Environment	12.15 ± 1.71	12.69 ± 1.83	0.033

Table 16. Quality of life of elderly men living in Vilnius community

Age (in years)	Area	With urinary incontinence	Control group	p
75–84 With urinary incontinence (n = 62) Control group (n = 148)	Physical health	12.49 ± 2.70	13.61 ± 2.28	0.005
	Psychological state	12.39 ± 2.34	13.13 ± 1.94	0.030
	Social relations	13.35 ± 1.98	13.92 ± 1.93	0.066
	Environment	12.26 ± 1.99	13.15 ± 1.87	0.002
85–95 and over With urinary incontinence (n = 15) Control group (n = 67)	Physical health	10.55 ± 3.17	13.75 ± 2.36	0.001
	Psychological state	10.98 ± 1.97	12.71 ± 2.16	0.005
	Social relations	14.04 ± 2.25	14.09 ± 1.76	0.684
	Environment	12.53 ± 1.45	12.96 ± 1.81	0.294
Total With urinary incontinence (n = 77) Control group (n = 215)	Physical health	12.12 ± 2.89	13.65 ± 2.29	0.001
	Psychological state	12.12 ± 2.33	12.99 ± 2.02	0.003
	Social relations	13.49 ± 2.04	13.97 ± 1.88	0.111
	Environment	12.31 ± 1.89	13.09 ± 1.84	0.001

Physical health and psychological state of men aged 50–74 living in nursing institutions differed statistically significantly when comparing the study group to the control group (Table 17). Differences in physical health, psychological state, social relations and environmental factors of men aged 75–84, 85–95 and over are statistically not significant. The following areas of quality of life of men with UI aged 75–95 and over differed statistically significantly in comparison with the control group: physical health, psychological state. Respectively statistically significantly worse were such areas of quality of life as physical health, psychological state, environment among men aged 50–95 and over in comparison with the control group.

Two years later, during the second study, the same men living in Vilnius city community who during the first study were diagnosed with UI by the physician by the method of interview, were questioned repeatedly. During the second study, one third of the respondents, i.e. 45 respondents (32.1%) who had fully completed the UI questionnaire, were diagnosed with UI (average age SD 73.33 ± 9.86 years). After the repeated survey of the same men with UI living in five Vilnius nursing institutions, more than one forth of the respondents fully completed the UI questionnaire, i.e. 19 (29.7%) men living there with diagnosed UI. Ability to self-service between the first and the second studies did not differ statistically significantly ($p < 0.05$).

Changes in QOL of Vilnius community men with UI were defined. Physical health of men aged 55–74 differed statistically significantly ($p < 0.043$). The results of our study demonstrate that the only area of QOL, i.e. physical health differed statistically significantly among men aged 55–95 and over after comparing the first and the second studies ($p < 0.036$). By analysing the changes in QOL of men with UI living in Vilnius nursing institutions, aged 55–95 and over, a significant difference in the QOL area of social relations was obtained ($p < 0.028$).

Table 17. Quality of life of men living in Vilnius nursing institutions

Age (in years)	Area	With urinary incontinence	Control group	p
50–74 With urinary incontinence (n = 21) Control group (n = 53)	Physical health	10.59 ± 2.36	12.44 ± 2.62	0.004
	Psychological state	10.29 ± 2.23	11.91 ± 2.54	0.007
	Social relations	11.94 ± 1.91	11.95 ± 2.02	0.807
	Environment	13.43 ± 1.57	14.08 ± 1.62	0.117
75–84 With urinary incontinence (n = 15) Control group (n = 22)	Physical health	11.70 ± 2.94	13.38 ± 2.36	0.056
	Psychological state	10.84 ± 2.87	12.09 ± 2.25	0.171
	Social relations	12.71 ± 1.74	12.97 ± 1.85	0.795
	Environment	14.00 ± 1.39	14.50 ± 1.49	0.366
85–95 and over With urinary incontinence (n = 6) Control group (n = 6)	Physical health	11.52 ± 2.15	13.81 ± 2.41	0.180
	Psychological state	11.33 ± 2.63	13.22 ± 1.15	0.310
	Social relations	12.67 ± 1.84	13.79 ± 2.88	0.589
	Environment	13.50 ± 1.38	14.58 ± 1.36	0.310
Total With urinary incontinence (n = 42) Control group (n = 81)	Physical health	11.12 ± 2.56	12.78 ± 2.56	0.001
	Psychological state	10.63 ± 2.49	12.06 ± 2.39	0.003
	Social relations	12.32 ± 1.83	12.36 ± 2.11	0.849
	Environment	13.64 ± 1.47	14.23 ± 1.57	0.041

CONCLUSIONS

1. The frequency of urinary incontinence among the men aged 55 and over living in Vilnius city community amounts to 17.8% and 38.1% among the men living in nursing institutions.
2. The frequency of urinary incontinence increases with age: the frequency of urinary incontinence of the men aged 55–74 amounts to 12.6%, whereas at the age of 75 and over it amounts to 26.5%.
3. The risk of the transient urinary incontinence among elderly men is increased statistically significantly by depression, constipation, use of tricyclic antidepressants, α–adrenergic blockers, antiparkinsons and benzodiazepines. The probability of the constant urinary incontinence is mostly increased by benign prostatic hyperplasia, low physical activity, earlier stroke, transurethral resection of the prostate, mild and average cognitive disorder and Parkinson's disease.
4. Erectile dysfunctions were diagnosed in 79.2% of the men with urinary incontinence aged 55 and over and in 36.7% of the healthy men of the same age living in Vilnius city community.
5. In case of urinary incontinence, the following areas of quality of life for Vilnius community men are statistically significantly worse: physical health ($p = 0.001$), psychological state ($p = 0.001$), social relations ($p = 0.002$) and the environment ($p = 0.033$), whereas for men living in nursing institutions the respective areas are physical health ($p = 0.001$), psychological state ($p = 0.003$) and the environment ($p = 0.041$), compared to healthy men. After two years the quality of life of the men with urinary incontinence became lower in the areas of physical health and social relations.

PRACTICAL RECOMMENDATIONS

1. Family physicians as well as the medical staff of care and nursing institutions are recommended to use specific questionnaires for diagnosing urinary incontinence and erectile dysfunctions of elderly men.
2. In cases of transient and constant urinary incontinence it is advisable to reduce or eliminate their risk factors: to increase physical activity of the patients, to improve depression, Parkinson's disease, constipation, benign prostatic hyperplasia, management: to encourage the use of optimum amount of tricyclic antidepressants, α–adrenergic blockers, antiparkinsons and benzodiazepines.
3. In order to improve the quality of life of men with urinary incontinence, it is necessary to correct their psychological state and reduce social isolation, by involving psychologists and social workers into the geriatric team.

LIST OF AUTHOR'S PUBLICATIONS

1. Mereckas G, Kalibatienė D, Alekna V. Šlapimo nelaikymo tyrimas vyresnio amžiaus asmenims. Medicinos teorija ir praktika 2001; 4(28): 230–231.
2. Mereckas G, Kalibatienė D, Alekna V. Vilniuje gyvenančių vidutinio amžiaus ir pagyvenusių vyrų šlapimo nelaikymo paplitimas. Medicinos teorija ir praktika 2002; 4(32), (priedas): 26–28.
3. Mereckas G, Alekna V. Vidutinio ir senyvo amžiaus vilniečių vyrų šlapimo nelaikymo priežastys. Medicinos teorija ir praktika 2002; 4(32): 306–308.
4. Mereckas G, Alekna V. Vidutinio ir senyvo amžiaus vyrų, gyvenančių Vilniaus mieste, erekcijos sutrikimų dažnumas. Lietuvos bendrosios praktikos gydytojas 2005; 9(1): 9–12.
5. Mereckas G, Alekna V. Šlapimo nelaikančių vyrų gyvenimo kokybė. Gerontologija 2006; 7(4): 201–207.
6. Мяряцкас Г, Алякна В, Черемных Е. Распространенность недержания мочи у мужчин преклонного возраста по данным анкетирования. Урология 2007; 2: 21–25.
7. Mereckas G, Alekna V, Čeremnych E. Šlapimo nelaikymo paplitimas tarp Vilniaus miesto globos namuose gyvenančių vyrų. Gerontologija 2007; 8(3): 175–181.
8. Mereckas G, Alekna V. Vilniaus mieste gyvenančių vidutinio ir pagyvenusio amžiaus vyrų erekcijos sutrikimai. Gerontologija 2008; 9(3): 171–175.
9. Mereckas G, Alekna V. Vilniaus miesto bendruomenėje gyvenančių vyresnio amžiaus vyrų šlapimo nelaikymo paplitimas pagal amžiaus grupes. Gerontologija 2008; 9(4): 214–218.

Santrauka

Šlapimo pūslės funkcijos sutrikimas, sąlygojantis šlapimo nelaikymą arba jo sulaikymą, senyvo amžiaus žmonėms yra svarbi medicininė, higieninė, slaugymo, socialinė problema. Asmenis per 60 metų dažniau vargina šlapimo nelaikymas (ŠN), nei širdies ir kraujagyslių liga, hipertoninė liga arba kitos lėtinės ligos. Vokietijos mokslininkų duomenimis, 0,5 mln. (8 proc.) vyresnių nei 60 metų vyrų turi šią problemą. Švedijoje bendruomenėje gyvenančių 45 metų ir vyresnių vyrų ŠN paplitimas – 9,2 proc. ŠN statistiškai reikšmingai didėja aritmetine progresija nuo 3,6 proc. (45 metų vyrams) iki 28,2 proc. (90 metų vyrams), Jungtinėje Karalystėje ŠN paplitimas yra 23 proc. tarp 65 metų ir vyresnių vyrų, gyvenančių bendruomenėje. Atskirose vyrų amžiaus grupėse šis sutrikimas pasiskirstęs taip: 65–69 metų – 12 proc., 70–74 metų – 21 proc., 75–79 metų – 22 proc., 80 m. ir vyresnių – 34 proc. Senėjant populiacijai, artimiausią dešimtmetį numatomas spartus ŠN paplitimo didėjimas.

Mokslinėje literatūroje yra duomenų, kad ŠN gali sąlygoti moterų seksualinę disfunkciją, tačiau kokią reikšmę jis turi vyrams, nežinoma. Apatinių urogenitalinės sistemos takų pakitimai leidžia įtarti seksualinę disfunkciją. Nors ŠN yra dažna senyvo amžiaus žmonių problema, šį sutrikimą turintys žmonės dažniausiai drovisi apie tai kalbėti ir kreipiasi į gydytoją pavėluotai. Laiku nepasirūpinus šiais asmenimis, jie tampa socialiai izoliuoti, jų veikla ribota, šie žmonės mažiau bendrauja, apie savo problemą nenoriai kalbasi su šeimos nariais. Blogėja žmogaus psichologinė būsena, savigarba, mažėja pasitikėjimas savimi, t. y. nukenčia gyvenimo kokybė (GK).

Lietuvoje iki šiol buvo nežinomas ŠN paplitimas, neanalizuotos jį lemiančios priežastys, netirti vyrų lytinės funkcijos sutrikimai, nenagrinėtos socialinės bei psichologinės šių asmenų problemos, netirta jų GK.

Darbo tikslas

Ištirti Vilniaus mieste gyvenančių senyvo amžiaus vyrų šlapimo nelaikymo ir erekcijos sutrikimų ypatumus bei gyvenimo kokybę.

Darbo uždaviniai:

1. Nustatyti Vilniaus miesto bendruomenėje ir globos įstaigose gyvenančių 55 metų amžiaus ir vyresnių vyrų šlapimo nelaikymo dažnumą.
2. Įvertinti rizikos veiksnius, galinčius turėti įtakos praeinančiam ir nuolatiniam šlapimo nelaikymui.
3. Nustatyti 55 metų amžiaus ir vyresnių vyrų, nelaikančių šlapimo, erekcijos sutrikimų dažnumą.
4. Išanalizuoti Vilniaus miesto bendruomenėje ir globos įstaigose gyvenančių senyvo amžiaus vyrų, nelaikančių šlapimo, gyvenimo kokybę.

Ginamieji teiginiai:

1. Šlapimo nelaikymas yra labiau paplitęs tarp gyvenančių globos įstaigose senyvo amžiaus vyrų, negu tarp gyvenančių bendruomenėje.
2. Nelaikantiems šlapimo vyrams erekcijos sutrikimai būna dažniau, negu sveikiems.
3. Nelaikančių šlapimo senyvo amžiaus vyrų gyvenimo kokybė yra blogesnė, negu to paties amžiaus sveikų vyrų.

Mokslinis naujumas

Šis darbas yra vienas iš nedaugelio Lietuvoje atliktų mokslinių darbų, skirtų šlapimo nelaikymo problemai. Pirmą kartą nustatytas Vilniaus miesto bendruomenės ir globos įstaigų vyrų šlapimo nelaikymo paplitimas. Gauti rezultatai palyginti su kitose šalyse atliktų epidemiologinių tyrimų duomenimis. Įvertinti Vilniaus miesto bendruomenėje ir globos įstaigose gyvenančių 55 metų ir vyresnių vyrų šlapimo nelaikymą sąlygojantys rizikos veiksniai. Darbo mokslinis naujumas yra ir tai, kad ištirti erekcijos sutrikimai senyvo amžiaus vyrams, nelaikantiems šlapimo. Mokslinių darbų, nagrinėjančių aktualią erekcijos sutrikimų problemą, yra nedaug. Šiame tyrime pirmą kartą išanalizuota senyvo amžiaus vyrų, nelaikančių šlapimo, gyvenimo kokybė bei jos kaita dviejų metų laikotarpyje. Tyrimams naudoti tarptautiniu mastu pripažinti bendri ir būklei specifiniai klausimynai.

Tyrimo objektas ir metodai

Tiriamųjų grupė sudaryta sluoksninės imties metodu. Vilniaus miesto bendruomenės vyrai buvo suskirstyti į 9 grupes (55–59 m., 60–64 m., 65–69 m., 70–74 m., 75–79 m., 80–84 m., 85–89 m., 90–94 m., 95 m. ir vyresni).

Tiriamųjų asmenų įtraukimo į tyrimą kriterijai: 1) Vilniaus miesto bendruomenės ir globos įstaigose gyvenantys – vyrai, 2) asmenys, gimę Lietuvoje. Tiriamųjų asmenų neįtraukimo kriterijai: 1) visi asmenys, užpildę pažinimo funkcijos klausimyną ir surinkę ≤ 10 balų, tolesnėje tyrimo eigoje nedalyvauja. Gautas Lietuvos Bioetikos komiteto leidimas vykdyti tyrimą.

Respondentai buvo tiriami interviu metodu, naudojant šiuos klausimynus: 1. ŠN klausimynas (angl. *Incontinence Questionnaire*), skirtas ŠN tipui išaiškinti. 2. Tarptautinis erekcijos funkcijos rodiklis, skirtas erekcijos sutrikimams įvertinti (angl. *International Index of Erectile Function*). 3. ŠN galimų rizikos veiksnių klausimynas (angl. *Causes of Incontinence*), skirtas predisponuojančiams veiksniams nustatyti. 4. Pasaulio sveikatos organizacijos (PSO) gyvenimo kokybės klausimynas WHOQOL–Bref (angl. *The World Health Organization Quality of Life – Bref*). 5. Protinės būklės trumpo tyrimo klausimynas (angl. Mini – *Mental State Exam*), skirtas įvertinti pažinimo funkciją. 6. Instrumentinis kasdienės veiklos klausimynas (angl. *Instrumental Activity of Daily Living*). 7. Geriatrinis depresijos klausimynas, skirtas depresiškumui nustatyti (angl. *Geriatric Depression Scale*).

Informacija apie tiriamųjų persirgtas ligas surinkta iš medicininės dokumentacijos.

Iš viso numatyta apklausti 570 vyrų 55–74 m. amžiaus bei 508 vyrus, sulaukusius 75 metų ir daugiau. Jaunesnėje amžiaus grupėje anketuoti 494 asmenys (dalyvavimas tyrime – 86,67 proc.). Vidutinis respondentų amžius 63,77 ± 5,37 m. Priežastys, dėl kurių neištirti 76 asmenys, yra šios: 51 (67,1 proc.) – atsisakė dalyvauti tyrime, 25 (32,9 proc.) – buvo mirę. Vyresnio amžiaus vyrų grupėje apklausti 294 asmenys (dalyvavimas tyrime – 57,87 proc.). Vidutinis ištirtų asmenų amžius 83,04 ± 4,99 m. Priežastys, dėl kurių negalėta ištirti 214 asmenų, yra šios: 71 (33,2 proc.) – atsisakė dalyvauti tyrime, 106 (49,5 proc.) – nedalyvavo dėl įvairių priežasčių, 37 (17,3 proc.) – buvo mirę.

Penkiose Vilniaus miesto globos įstaigose apklausti 168 vyrai. Vidutinis tiriamų asmenų amžius 70,26 ± 13,63 m. Kontrolinę grupę sudarė tuo pačiu metu tirti vyrai, nesiskundę ŠN.

Visus respondentus suskirstėme į 2 grupes: tiriamąją grupę sudarė ŠN vyrai, o kontrolinę grupę – vyrai, neturintys šio sutrikimo.

Pakartotinai, praėjus 2 metams nuo pirmosios apklausos, tirti 140 Vilniaus miesto bendruomenėje ir 64 globos įstaigose gyvenantys nelaikantys šlapimo vyrai.

Statistinė duomenų analizė buvo atlikta naudojant „SPSS 12.0 for Windows“ ir „Epiinfo 6“ programas. Duomenys pateikami kaip dydžių vidurkis plius/minus standartinis nuokrypis (m ± SN). Statistinis duomenų apdorojimas buvo atliktas taikant standartinius metodus: kintamųjų normaliam pasiskirstymui tikrinti buvo panaudotas Chi kvadrato (χ^2) kriterijus, grupių palyginimui: parametriniai (Stjudento, Fišerio) ir neparametriniai (Mano–Vitnio–Vilkoksono) kriterijai. Pasirinktų veiksnių įtakai ŠN įvertinti naudotas atvejo ir kontrolės tyrimas. Rizikos veiksnio poveikio ryšys su ŠN vertintas ŠS. Jei veiksnio ŠS > 1 ir p < 0,05, vadinasi, analizuojamas veiksnys didino ŠN riziką, o jei ŠS < 1 ir p < 0,05 – mažino riziką. Rezultatai vertinti kaip statistiškai reikšmingi, esant klaidos tikimybei p < 0,05 – statistiškai reikšminga.

Rezultatai

Šlapimo nelaikymo dažnumas tarp Vilniaus miesto bendruomenėje gyvenančių 55 metų ir vyresnio amžiaus vyrų buvo 17,8 proc. Tyrimo metu ŠN nustatytas 62 Vilniaus miesto bendruomenės 55–74 m. amžiaus vyrams, tai sudarė 12,6 proc. Didėjant amžiui vyrų, nelaikančių šlapimo, daugėja nuo 6,3 proc. (55–59 m.) iki 22,6 proc. (70–74 m.). Vilniaus miesto bendruomenės 75 metų amžiaus ir vyresnių vyrų grupėje šlapimo nelaikė 78 vyrai (26,5 proc.). Didėjant šios grupės vyrų amžiui, nelaikančių šlapimo asmenų mažėja nuo 32,8 proc. (75–79 m.) iki 9,1 proc. (95 m. ir vyresni). Senyvo amžiaus vyrus dažniausiai vargina dirgli šlapimo pūslė 41 (53,2 proc.). Įtampos ŠN nustatytas 6 (7,8 proc.), mišrus ŠN – 24 (31,2 proc.) vyrams. 6 vyrams nebuvo nustatytas ŠN tipas. 7,9 proc. respondentų nurodė, kad ŠN juos vargina mažiau nei pusę metų, 3,9 proc. – nuo šešių mėnesių iki metų, dauguma (67,1 proc.) – nuo metų iki penkerių metų, 21,1 proc. – ilgiau nei penkerius metus.

Vilniaus miesto globos įstaigose gyvenančių 50 m. amžiaus ir vyresnių vyrų ŠN paplitimas buvo 38,1 proc.: 50–54 m. – 25,0 proc., 55–74 m. – 34,2 proc., 75–90 m. ir vyresnių – 47,1 proc. Daugumą jų (52,4 proc.) ŠN vargina ilgiau negu penkerius metus. Vilniaus miesto globos įstaigose gyvenantiems vyrams dažniausiai pasitaikė dirgli šlapimo pūslė 25 (55,5 proc.). Kiti ŠN tipai pasiskirstė taip: įtampos šlapimo nelaikymas – 4 (8,9 proc.), mišrus ŠN – 13 (28,9 proc.).

Nustatėme Vilniaus m. bendruomenės 55–74 m. amžiaus vyrų galimus praeinantį ŠN sąlygojančius rizikos veiksnius. Suradome stiprų priežastinį ryšį šių rizikos veiksnių: antidepresantų (ŠS = 7,28; 95% PI 1,14–46,02; p = 0,030), α-adrenerginių blokatorių (ŠS = 5,85; 95% PI 2,46–13,83; p = 0,001), antiparkinsoninių (ŠS = 14,85; 95% PI 2,28–119,5; p = 0,003), benzodiazepinų (ŠS = 1,45; 95% PI 0,56–3,61; p = 0,001), obstipacijos (ŠS = 2,45; 95% PI 1,19–4,99; p = 0,013) ir depresijos (ŠS = 3,71; 95% PI 1,06–12,34; p = 0,029), sąlygojančių ŠN. Nustatytas šio sutrikimo atsiradimo ir šlapimo takų infekcijos vidutinis ryšys (ŠS = 14,39; 95% PI 1,01–407,21; p = 0,051), antihistamininių medikamentų vartojimo (ŠS = 14,39; 95% PI 1,01–407,2; p = 0,052). Silpną poveikį praeinančiam ŠN atsirasti sąlygojo diuretikai (ŠS = 1,65; 95% PI 0,63–4,16; p = 0,375), spazmolitikai (ŠS = 1,17; 95% PI 0,14–9,86; p = 0,610), 2 tipo diabetas (ŠS = 3,09; 95% PI 0,62–13,8, p = 0,118).

Praeinantį ŠN 75 m. amžiaus ir vyresniems vyrams sąlygojo α-adrenerginių blokatorių (ŠS = 3,89; 95% PI 1,98–7,67; p = 0,001), diuretikų (ŠS = 1,31; 95% PI

0,60–2,81; p = 0,46) ir benzodiazepinų grupės medikamentų (ŠS = 1,70; PI 0,88–3,27; p = 0,08) vartojimas. Nustatytas ŠN atsiradimo ir depresijos (ŠS = 2,51; 95% PI 1,13–5,55; p = 0,012) ryšys, 2 tipo cukrinio diabeto (ŠS = 4,93; 95% PI 1,00–26,78; p = 0,051) bei obstipacijos (ŠS = 1,67; 95% PI 0,92–3,03; p = 0,070) ryšys.

Nuolatinį ŠN 55–74 m. amžiaus vyrams sąlygojo keli rizikos veiksniai. Suradome stiprų priežastinį ryšį šių rizikos veiksnių: persirgtas insultas (ŠS = 4,32; 95% PI 1,95–9,4; p = 0,001), transuretrinė prostatos rezekcija (ŠS = 21,95; 95% PI 2,0–556,7; p = 0,002), gerybinė prostatos hiperplazija (ŠS = 2,31; 95% PI 1,25–4,23; p = 0,005), apribotas judrumas ilgesniam laikui (ŠS = 2,60; 95% PI 1,30–5,13; p = 0,005), vidutinis pažinimo sutrikimas (ŠS = 3,62; 95% PI 1,36–9,42; p = 0,007), lengvas pažinimo sutrikimas (ŠS = 2,90; 95% PI 1,32–6,29; p = 0,006), sąlygojančių nuolatinį ŠN. Nustatytas ŠN atsiradimo ir prostatos auglio vidutinis ryšys (ŠS = 5,45; 95% PI 0,94–29,70; p = 0,062).

Taip pat nustatėme Vilniaus m. globos įstaigose gyvenančių vyrų galimus praeinantį ŠN sąlygojančius rizikos veiksnius. Nustatytas stiprus priežastinis ryšys tarp šių rizikos veiksnių: α-adrenerginių blokatorių (ŠS = 6,67; 95% PI 1,52–33,27; p = 0,007) ir ŠN, obstipacijos (ŠS = 5,23; 95% PI 2,19–12,69; p = 0,001) ir ŠN bei depresijos (ŠS = 3,13; 95% PI 0,97–10,40; p = 0,03) ir ŠN. Silpną poveikį šiam sutrikimui darė diuretikai (ŠS = 1,26; 95% PI 0,37–4,27; p = 0,676) ir benzodiazepinai (ŠS = 1,01; 95% PI 0,45–2,26; p = 0,978).

Nuolatinį ŠN sąlygojo gerybinė prostatos hiperplazija (ŠS = 3,10; 95% PI 1,40–8,87; p = 0,040), ryškus ir vidutinio sunkumo pažinimo sutrikimas (ŠS = 2,64; 95% PI 0,95–7,35; p = 0,036), apribotas judrumas (ŠS = 3,21; 95% PI 1,24–8,55; p = 0,008).

Tyrimo rezultatai byloja, kad ŠN sąlygoja ne viena, bet keletas priežasčių. Dvi ŠN priežastis nurodė 14,3 proc. gyvenančių bendruomenėje ir 11,9 proc., gyvenančių globos įstaigose vyrų, tris ir keturias – atinkamai 11,1 proc. ir 21,4 proc.

Tyrėme Vilniaus m. bendruomenės 55–74 m. vyrų, nelaikančių šlapimo, erekcijos sutrikimus. Iš 62 ŠN vyrų, 44 (69,8 proc.) respondentai per pastarąsias 4 savaites neturėjo lytinių santykių, o iš 440 kontrolinės grupės vyrų 166 (37,7 proc.) neturėjo lytinių santykių. Iš 19 (30,2 proc.) vyrų, per pastarąsias 4 savaites turėjusių lytinius santykius, tik 4 (21,1 proc.) erekcija nebuvo sutrikusi, 15 (78,9 proc.) vyrų nustatėme lengvus erekcijos sutrikimus. Iš 274 (62,3 proc.) lytinius santykius turėjusių kontrolinės grupės vyrų 176 (64, 2 proc.) erekcija nebuvo sutrikusi. Kontrolinėje grupėje 2,6 proc. vyrams nustatėme vidutinius, o 33,2 proc. – lengvus erekcijos sutrikimus. Per 4 savaites iki tyrimo datos 97,8 proc. Vilniaus miesto globos įstaigose gyvenančių vyrų neturėjo lytinių santykių.

Analizuodami tyrimo duomenis nustatėme, kad 45,0 proc. ŠN vyrų buvo sutrikusios pagal IADL klausimyną vertinamos funkcijos. Globos įstaigose gyvenantiems vyrams šios funkcijos yra sutrikusios dažniau negu bendruomenės vyrams (atitinkamai 45,0 ir 73,3 proc.). Dažniausiai šie žmonės nebegalėjo savarankiškai dirbti – 65,8 proc., savarankiškai vaikščioti – 61,1 proc., savarankiškai apsipirkti – 55,8 proc., savarankiškai tvarkyti finansinius reikalus – 65,8 proc.

Atlikome Vilniaus m. bendruomenės 55–74 m. amžiaus gyvenančių vyrų gyvenimo kokybės analizę. Vilniaus miesto bendruomenės 55–59 m. amžiaus ŠN vyrų grupėje, statistiškai reikšmingai blogesnė buvo fizinė sveikata, psichologinė būsena ir socialiniai santykiai, 60–64 m. vyrų statistiškai reikšmingai skyrėsi tik fizinės sveikatos sritis, o

65–69 m. grupėje – fizinė sveikata, psichologinė būsena bei aplinkos veiksniai, lyginant su kontroline grupe. Vilniaus m. bendruomenėje gyvenančių 75 m. ir vyresnio amžiaus ŠN vyrų grupėje, lyginant su kontroline grupe, statistiškai reikšmingai blogesnės buvo fizinė sveikata bei psichologinė būsena. Globos įstaigose gyvenančių ŠN vyrų statistiškai reikšmingai blogesni rodikliai buvo šiose gyvenimo kokybės srityse: fizinė sveikata, aplinka bei psichologinė būsena.

Pakartotinai apklausta daugiau nei ketvirtadalis Vilniaus m. globos įstaigose gyvenančių vyrų, kuriems buvo nustatytas ŠN. Gebėjimas apsitarnauti tarp pirmo ir antro tyrimo statistiškai reikšmingai nesiskyrė ($p < 0,05$). Taip pat nustatėme Vilniaus m. bendruomenės ŠN vyrų GK pokyčius. Mūsų tyrimo duomenys parodė, kad palyginus pirmą ir antrą tyrimus, statistiškai reikšmingai pablogėjo vienintelė GK sritis – fizinė sveikata ($p < 0,036$).

Išvados:

1. Šlapimo nelaikymo dažnumas tarp Vilniaus miesto bendruomenėje gyvenančių 55 metų amžiaus ir vyresnių vyrų yra 17,8 proc., o tarp globos įstaigose gyvenančių vyrų – 38,1 proc.
2. Su amžiumi šlapimo nelaikymo dažnumas didėja: 55–74 metų amžiaus vyrams šlapimo nelaikymo dažnumas yra 12,6 proc., o 75 metų ir vyresniems – 26,5 proc.
3. Praeinančio šlapimo nelaikymo riziką senyvo amžiaus vyrams statistiškai reikšmingai didina depresija, obstipacija, triciklių antidepresantų, α–adrenerginių blokatorių, antiparkinsoninių vaistų ir benzodiazepinų vartojimas. Nuolatinio šlapimo nelaikymo tikimybę labiausiai didina gerybinė prostatos hiperplazija, mažas fizinis aktyvumas, patirtas insultas, transuretrinė prostatos rezekcija, lengvas ir vidutinis pažinimo sutrikimas bei Parkinsono liga.
4. Erekcijos sutrikimai nustatyti 79,2 proc. šlapimo nelaikančių 55 metų amžiaus ir vyresnių vyrų ir 36,7 proc. to paties amžiaus sveikų vyrų, gyvenančių Vilniaus miesto bendruomenėje.
5. Esant šlapimo nelaikymui, Vilniaus miesto bendruomenės vyrams statistiškai reikšmingai blogesnės yra šios gyvenimo kokybės sritys: fizinė sveikata ($p = 0,001$), psichologinė būsena ($p = 0,001$), socialiniai santykiai ($p = 0,002$) ir aplinka ($p = 0,033$), o gyvenantiems globos įstaigose – fizinė sveikata ($p = 0,001$), psichologinė būsena ($p = 0,003$) ir aplinka ($p = 0,041$), lyginant su sveikais vyrais. Praėjus 2 metams šlapimo nelaikančių vyrų gyvenimo kokybė pablogėjo fizinės sveikatos bei socialinių santykių srityse.

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