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PECULIARITIES OF THE DISEASE AND PREVALENCE OF CHRONIC CYSTITIS AMONG THE FEMALE POPULATION OF UKRAINE IN THE REGIONAL ASPECT

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Ключові слова: *жінки, хронічний цистит, захворюваність, поширеність*

Ключевые слова: *женщины, хронический цистит, заболеваемость, распространённость*

Abstract. Peculiarities of the disease and prevalence of chronic cystitis among the female population of Ukraine in the regional aspect. Saidakova N.O., Stus V.P., Havva N.V., Grodzinsky B.I. *The study uses data from state and industry official statistics for 2008-2017. Absolute and relative indicators of morbidity and prevalence of chronic cystitis among the female population of Ukraine, its regions and areas were analyzed taking into account two five-year periods for comparative assessment of the nature and intensity of dynamic processes. It is revealed that the number of patients with chronic cystitis (CC) registered in Ukraine is at the expense of women, which are 3-3.5 times more in number than men, with their characteristic more intensive growth (for 10 years by 3.6% against 0.4% among the adult population in the country). The first three places in the structure belong to the Southeastern region, Kyiv, Western region, the next – Central, Southern, Northeastern regions. Levels of the prevalence of the disease among women (100 thousand) are higher than the average in Ukraine and have a high growth rate (for 10 years by 13.5% from 232.2 to 263.6 against 9.3% from 171.5 to 187.5, respectively). Typical for Ukraine persistent increase in patients with the first diagnosis of chronic cystitis (0.8%, 2.1% and 2.8%, respectively, in the first, second periods and 10 years to 15112 in 2017) is also formed by this category (women's growth was 3.4%, 12.4%, and 5.0%, respectively, to 11.295). A similar situation was also identified in the analysis of the level of morbidity (per 100 thousand). In Ukraine, its growth rate for the last five years was 9.6% against 1.8% for the previous year, for 10 years – 11.9%, and the value reached 43.4 in 2017 against 38.8 in 2008. Among women, its levels are higher than the average in Ukraine (in 2017 – 59.2 against 56.1 in 2008), and the increase was more intense (by 6.2% and 11.3% over the periods; for 10 years – by 11.98%).*

Реферат. Особливості захворюваності, поширеності хронічного циститу серед жіночого населення України в регіональному аспекті. Сайдакова Н.О., Стусь В.П., Гавва Н.В., Гродзінський В.І. *У роботі використані дані державної і галузевої офіційної статистики за 2008-2017 роки. Аналізувалися абсолютні та відносні показники захворюваності й поширеності хронічного циститу серед жіночого населення України, її регіонах та областях з урахуванням виділення двох п'ятирічних періодів для порівняльної оцінки характеру й інтенсивності динамічних процесів. Виявлено, що кількість зареєстрованих в Україні хворих на хронічний цистит (ХЦ) формується за рахунок жінок, яких у 3-3,5 рази більше, ніж чоловіків, з характерним для них більш інтенсивним приростом (за 10 років на 3,6% проти 0,4% серед дорослого населення по країні). Перші три місця в структурі належать Південно-Східному регіону, м. Києву, Західному регіону, наступні – Центральному, Південному, Північно-Східному регіонам. Рівні поширеності захворювання серед жінок (на 100 тис.) вище середньоукраїнських і відрізняються великим темпом приросту (за 10 років на 13,5% з 232,2 до 263,6 проти 9,3% з 171,5 до 187,5 відповідно). Типове для України стійке збільшення хворих з уперше встановленим діагнозом хронічного циститу (на 0,8%, 2,1% і на 2,8% відповідно в першій, другий періоди і за 10 років до 15112 у 2017 р.) також формується цією категорією (приріст кількості жінок відповідно був 3,4%, 12,4% і 5,0% до 11295). Аналогічна ситуація виявлена також при аналізі рівня захворюваності (на 100 тис.). По Україні темп його зростання за останню п'ятирічку становив 9,6% проти 1,8% за попередній, за 10 років – 11,9%, а величина досягла 43,4 у 2017 р. проти 38,8 у 2008 році. Серед жінок її рівні вище середньоукраїнських (у 2017 р. – 59,2 проти 56,1 у 2008 р.), а приріст виявився інтенсивнішим (на 6,2% і 11,3% за періодами; за 10 років – на 11,98%).*

Urinary tract infections (UTIs) are known to be among the most common diseases among women. The well-known multifaceted leading factors of its development determine the sphere of interest in the problematic issues of providing medical care to this category of sick specialists of different specialties.

Despite the fact that the largest share in the structure falls on acute cystitis, the is chronic frequency of visits and hospitalizations [2, 7, 9, 11, 12, 13]. Against the background of sufficiently studied pathogenesis and the possibility of diagnosis, for now the focus is on treatment. Given the recommendations in the protocols, antibiotics are recognized as therapy [3, 7, 12]. The complexity of their choice is due to the growth of resistant forms to pathogens, as well as intolerance of certain of them and the cost of treatment [1, 2, 3, 4].

At the same time, there is a need to know the real situation of the incidence and prevalence of chronic cystitis (CC) among women in Ukraine in order to focus efforts to prevent its development, involving objective information, taking into account regional specifics.

The aim of the work – to conduct a comparative analysis of the dynamics of the incidence and prevalence of chronic cystitis among the female adult population of Ukraine in the regional aspect.

MATERIALS AND METHODS OF RESEARCH

In the process of studying the relevant indicators, it was confirmed that among the total number of patients with CC, women predominate, 3 to 3.5 times more than men (Fig. 1).

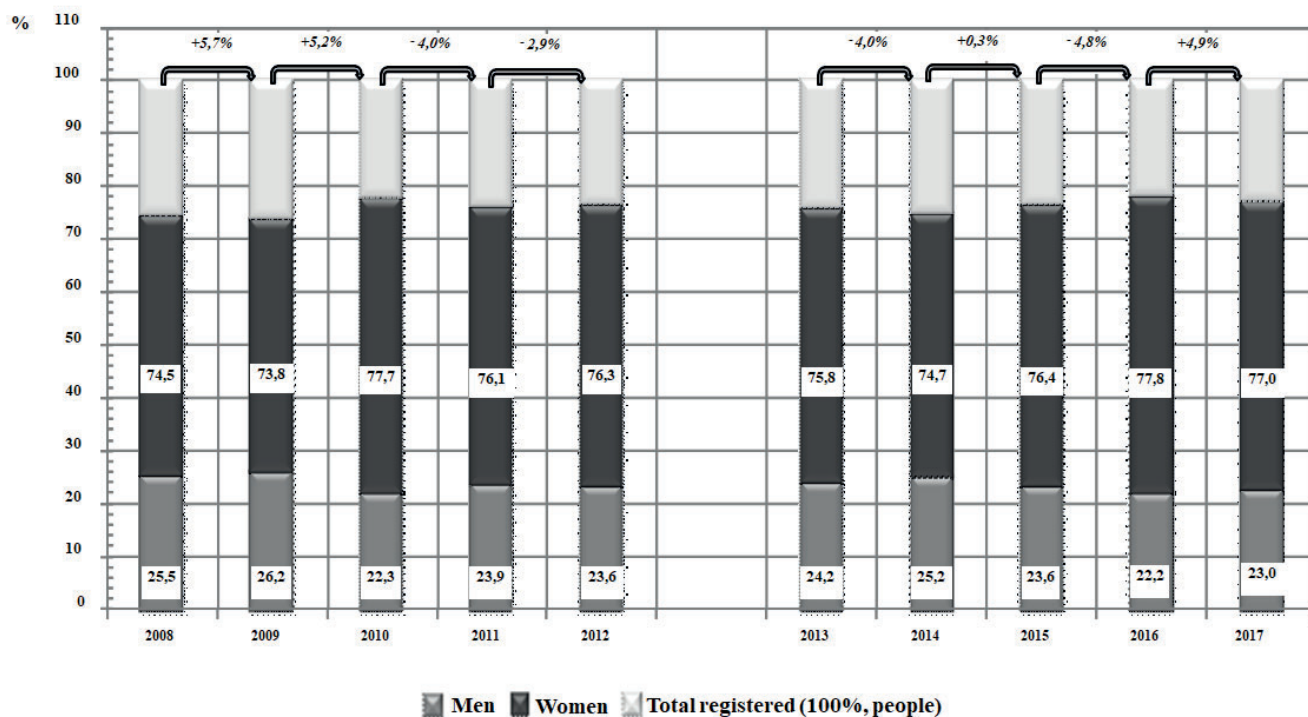


Fig. 1. The structure of the distribution of registered patients with chronic cystitis by sex

The feature is a characteristic of all regions, as can be seen from the Table. 1. It is inherent in each area in which the difference is larger (2-4 times). Comparative analysis of information presented in Fig. 1 and Table 1 clearly shows the formation of patients in Ukraine as a whole according to their dynamics among women. Thus, their increase for the first period (2008-2012) by 3.6% is due to an increase in the latter by 6.2%; in 2012 there were 67.295 and 51.370, respectively. Over the next five years, the decrease was by 3.7% and 2.1%, respec-

tively, among women to 65,239 and 50,290 patients in 2017. As a result, over 10 years, the increase in women with CC was 3.9% compared to 0.4% in Ukraine as a whole. Under such conditions, the structure of their distribution by regions is identical: the first three places belonged to the South-East, Kyiv, Western region, the next – Central, South and North-East. Due to the annual variability of the data, the average values were calculated to identify clear dynamics of changes by the regions (Table 2).

Table 1

Regional dynamics of registered patients with chronic cystitis (2008-2017)

Regions	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	abs. %	abs. %	abs. %	abs. %	abs. %	abs. %	abs. %	abs. %	abs. %	abs. %
Western	8674 18.0	9320 18.4	9723 17.4	9968 18.9	8806 17.1	8960 17.4	8602 17.7	8082 16.2	8040 16.6	8314 16.5
Central	5066 10.5	6247 12.3	5601 10.0	6045 11.4	5912 11.5	5733 11.2	5869 12.0	6282 12.6	6395 13.2	6298 12.5
Northeastern	2563 5.3	1876 3.7	2317 4.1	3278 6.2	2977 5.8	2754 5.4	3219 6.6	3498 7.0	3109 6.4	3460 6.9
Southeastern	16239 33.6	15320 30.2	20679 37.0	16155 30.6	15019 29.2	15810 30.8	13475 27.8	14529 29.2	13156 27.2	13619 27.0
Southern	4346 9.0	4766 9.4	4604 8.2	4511 8.5	5288 10.3	5578 10.9	5217 10.7	5466 11.0	6372 13.2	7423 14.8
Kyiv	11497 23.8	13362 26.0	12963 23.2	12840 24.3	13368 26.0	12526 24.4	12220 25.1	11961 24.0	11325 23.4	11176 22.2
Ukraine	48385 100.0	50891 100.0	55887 100.0	52797 100.0	51370 100.0	51361 100.0	48602 100.0	49818 100.0	48397 100.0	50290 100.0

Table 2

**Regional dynamics of the number of registered women
with chronic cystitis by study periods (M±m)**

Regions	Women	
	I period	II period
Western	9352±47.0	8400±31.0*
Central	5775±37.0	6115±25.6*
Northeastern	2606±44.0	3208±19.8*
Southeastern	16665±186	14118±87.0*
Southern	4714±29.0	6011±73.0*
Kyiv	12806±62.0	11842±27.0*
Ukraine	51829±223	49694±99.0*

Notes: * – the difference is significant between periods; $p < 0.05$.

There was a significant increase in the contingent in the Central, Northeastern and Southern regions with a reverse character in the Western, Southeastern and in the capital.

RESULTS AND DISCUSSION

The results of the study of the prevalence of pathology on indicators calculated per 100 thousand of the relevant population confirmed the similarity of their dynamics with absolute values against the background of significantly higher levels (2-2.5 times) among women than the average Ukrainian. In particular, over 10 years it has increased in Ukraine as a whole by 9.3% (from 171.5 in 2008 to 187.5 in 2017), among women by 13.5% (from 232.2 to 263, 6 respectively). The difference was manifested by the fact that in the last five years, despite the

territorial transformations in the country, the prevalence continued to grow, although with a smaller increase (3.4% vs. 4.7% in the previous) with a more intensive process among women (5.4% vs. 1.0%, respectively). That is, another confirmation of the determining influence of female patients on the general nature of changes in Ukraine as a whole was obtained. The calculated average values allowed to reveal the basic, typical sign of the phenomenon (Table 3). As can be seen from Table 3, a significant increase in the prevalence of CC among women in the country (from 233.5±0.9 to 255.1±1.1 by periods) was due to four regions (Central, Northeastern, Southeastern, Southern). Only in the Western region and the city of Kyiv there was a tendency to decrease.

Table 3

**Regional dynamics of prevalence levels of women with chronic cystitis
by study periods (per 100,000 corresponding population) M±m**

Regions	Women	
	I period	II period
Western	201.1±3.4	192.0±5.8
Central	163.2±2.1	189.0±0.8*
Northeastern	169.0±3.2	180.0±1.3*
Southeastern	192.3±1.4	206.5±1.0*
Southern	222.4±3.0	260.5±4.7*
Kyiv	921.2±2.1	918.7±3.2
Ukraine	233.5±0.9	255.1±1.1*

Notes: * – the difference is significant between periods; $p < 0.05$.

It is worth emphasizing the unconditional dependence of regional changes on those inherent in the areas of their composition. Thus, the decrease in the prevalence of chronic cystitis in the Western region is due to a significant decline in five of its seven regions (Volyn – from 141.2±7.5 to 107.1±2.5; Transcarpathian – from 81.2±8.1 to 63.5±5.1, Chernivtsi – from 234.5±19.8 to 181.6±20.0, Ivano-Frankivsk – from 191.8±8.1 to 177.5±5.0; Lviv – from 195.2±5.2 to 180.3±7.4). The increase in the Central region was due to a significant rise in Kyiv (from 3149.0±8.5 to 174.6±14.1); Khmelnytsky (from 116.4±8.5 to 147.2±9.1); in the Northeast – in Poltava (from 130.8±16.8 to 180.7±20.2); in the Southeast – Dnipropetrovsk (from 268.3±10.3 to 299.7±7.5) and Zaporizhzhia (from 83.7±6.9 to 102.4±9.8); in the South –

Mykolayiv (from 98.0±3.1 to 240.0±13.1) and Odessa (from 218.0±5.4 to 252.2±9.8). Besides, it is necessary to pay attention to areas with stably high level of prevalence of chronic cystitis: first of all it is Dnipropetrovsk, then Kharkiv, Odessa, Chernivtsi, Nikolaev.

The share of the newly detected cases of CC among all registered during 10 years in Ukraine as a whole was in the range of 21.3-29.0%. At the same time, in contrast to the nature of their changes, in this case a steady increase in those registered for the first time with a more intensive process in the last five years is noteworthy: by 2.1% against 0.8% in the previous ones; in 2012 there were 14.826 of them, in 2017 – 15.112, that is the increase over 10 years was 2.8% (Fig. 2).

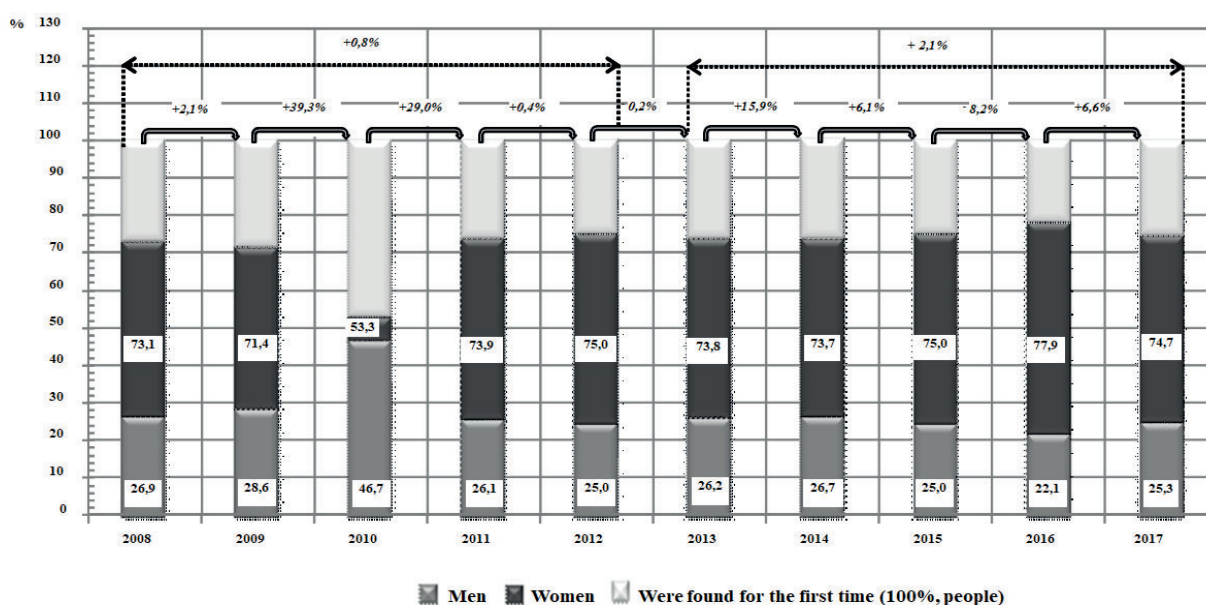


Fig. 2. Dynamics of distribution of patients with the first established chronic cystitis as a whole in Ukraine taking into account sex

Fig. 2 also shows the predominance of women. The regional dynamics of their distribution is given in Table. 4.

It also shows that their growth over the years has increased, namely by 3.4% and 12.4% for the first and second periods, respectively, to 11.295 in 2017 against 11.113 in 2012 and 10,751 in 2008; for 10 years – by 5.0%. Against the background of unstable values over the years, the leading first place steadily belonged only to the Southeastern region. Therefore, the average values of data in the regional aspect by periods were used for the analysis (Table 5).

According to this table, it is obvious that the dynamics of changes in the country is formed by

female patients with a first diagnosis. Their number has significantly increased in the last five years: 11439±123 against 10929±81 in the past. This feature is characteristic of the Northeastern, Southern regions and the city of Kyiv. It should be noted that in 2017, 60.6% of such cases were concentrated in 9 regions. Thus, in the Western region, Lviv region accounted for 48.0% (1,068 people); in the Central 53.0% (736) – in Vinnytsia and Zhytomyr; in the Northeastern 83.6% (2270) – in Dnipropetrovsk, Zaporizhzhia, Kharkiv; in the Southern 92.6% (2335) – in Mykolayiv and Odessa.

Table 4

Regional dynamics of newly detected cases of chronic cystitis among the female population

Regions	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	abs. %	abs. %	abs. %	abs. %	abs. %	abs. %	abs. %	abs. %	abs. %	abs. %
Western	2728 25.4	2871 26.8	2741 24.6	2868 26.3	2467 22.2	1989 19.8	2346 21.8	2537 22.0	2320 21.0	2220 19.6
Central	1304 12.1	1704 15.9	2011 18.0	1488 13.6	1599 14.3	1122 11.2	1286 12.0	1504 13.0	1377 12.5	1385 12.3
Northeastern	711 6.6	618 5.7	755 6.7	919 8.4	800 7.2	797 8.0	1014 9.4	867 7.5	792 7.2	807 7.1
Southeastern	3743 34.8	3071 28.6	3424 30.7	3467 31.8	3634 32.7	3441 34.2	3430 32.0	3684 31.8	3085 28.0	2714 24.0
Southern	810 7.5	1148 10.7	971 8.7	1123 10.3	1135 10.2	1568 15.6	1382 12.8	1518 13.1	2089 19.0	2522 22.3
Kyiv	1455 13.5	1310 12.2	1252 11.2	1044 9.6	1478 13.3	1133 11.3	1276 11.9	1470 12.7	1377 12.5	1647 14.6
Ukraine	10751 100.0	10722 100.0	11154 100.0	10909 100.0	11113 100.0	10050* 100.0	10734 100.0	11580 100.0	11040 100.0	11295 100.0

Note: * – calculation without the Autonomous Republic of Crimea and the city of Sevastopol.

According to the analysis of the incidence of CC in the adult population of Ukraine (per 100 thousand), one can testify to their practical annual growth in both periods. Its rate in the second is ahead of the value of the first (by 9.6% vs. 1.8%), for 10 years – 11.9%. As a result, in 2017 the indicator was 43.4 against 39.5 in 2012 and 38.8 in 2008. According to the dynamics of the morbidity by sex, it was found that it is significantly higher among women than the average Ukrainian. Actually,

the general picture of the country is formed behind them. Their growth for 2008-2012 was 6.2%, for 2013-2017 – 11.3% for 10 years – by 11.98%. As a result, the indicators were: in 2017 – 59.2 against 56.1 in 2008. According to their amount, the capital, Southern and Southeastern regions stand out, despite all their variability over the years. On this basis, as a result of interregional analysis, attention is drawn to Lviv, Zhytomyr, Poltava, Dnipropetrovsk, Kharkiv, Mykolayiv regions.

Table 5

Dynamics of the number of newly detected cases of chronic cystitis in women in the regional aspect by study periods (M±m)

Regions	Women	
	Periods	
	I (2008-2012)	II (2013-2017)
Western	2760±14.0	2282±16.3*
Central	1619±21.0	1335±11.5*
Northeastern	761±45.0	855±38.0*
Southeastern	3432±97.0	3270±153.0
Southern	1094±18.3	1815±194*
Kyiv	1272±12.0	1380±69*
Ukraine	10929±81	11439±123*

Notes: * – the difference is significant between the indicators by periods; p<0.05.

Thus, according to the results of the study, the predominance of women with CC, both among all and the first registered cases is convincingly proved. The identified features of the dynamics confirm their increase, which is more intense over the years. The regions and districts that are part of them and need priority attention to change the situation in terms of high levels of prevalence and morbidity are outlined.

CONCLUSIONS

1. It was found that Ukraine, its regions and administrative units are characterized by an increase in registered patients with chronic cystitis, in women by 3-3.5 times more than in men; for 2008-2017 the increase was 3.6%. In the structure of their distribution, the first three places belonged to the Southeastern, Kyiv, Western regions, the next – Central, Southeastern and Northeastern.

2. It was established the increase in the prevalence of chronic cystitis (per 100 thousand people) among women by 13.5% over 10 years (from 232.2 to 263.6) against 9.3% in Ukraine (from 171.5 to 187.5), for the first and second periods by 1.0% and

5.4%. Significant growth was in the Central, Northeastern, Southeastern and Southern districts. Stably high levels of prevalence are inherent in Dnipropetrovsk, Kharkiv, Odessa, Chernivtsi, Mykolayiv regions.

3. It was revealed a steady increase in a number of patients with a first diagnosed, which was more intense over the last five years (by 2.1% vs. 0.8%) and for 10 years by 2.8% to 15,112 in 2017, at the expense of women: by 12.4% against 3.4% and 5.0%, respectively, according to 11295. In 2017, 60% of cases were in 9 regions (Lviv, Vinnytsia, Zhytomyr, Dnipropetrovsk, Zaporizhzhia, Kharkiv, Poltava, Mykolaiv, Odessa).

4. The incidence of chronic cystitis (per 100 thousand) in Ukraine is growing, its rate for 2013-2017 is ahead of the previous five years (by 9.6% vs. 1.8%; for 10 years – by 11, 9%) and amounted to 43.4 against 38.8 in 2008. Its formation at the expense of women is proved, the indicators among which are higher than the average Ukrainian (in 2017 – 59.2 against 56.1 in 2008), and the growth rate is more intense (by 6.2% and 11.3% for the periods for 10 years – at 11.98%.

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