

Characteristics of the incidence and prevalence of chronic cystitis among the male population in Ukraine

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The objective of the study was to conduct a trend analysis of the incidence and prevalence of chronic cystitis (CC) in the male population of Ukraine. Materials and methods. The indicators of incidence and prevalence of chronic cystitis among the male population of Ukraine were analyzed in the reporting forms of official statistics for 2008–2017. To trace the nature and intensity of changes were distinguished two periods (2008–2012 and 2013–2017).

Results. It was found that among the total number of registered as well as first-time patients with chronic cystitis in Ukraine, a quarter of them were men. Over the years there has been a decrease in the number of cases. At the same time its rate among the latter is lower than among those registered, which is more pronounced in the last five years. This finding may suggest that the situation is likely to change in the near future towards an increase in the number of cases among men. The first three places in the number of men with chronic cystitis are occupied by the Southeastern, Western, Southern regions. The incidence and prevalence rates (per 100,000) among men are half as high as the corresponding rates among the adult population as a whole. The values of the latter have been decreasing over the years, while the incidence rate increased between 2013 and 2017. Each region has its own peculiarities, which are manifested both by the levels of width in the regions which make up their structure and by the nature of their dynamics. The situation in Ukraine is defined by the Southeastern, Southern regions and Kiev, where the rates are higher than the Ukrainian average and are increasing.

Conclusions. The number of patients with chronic cystitis (CC) and cases with newly diagnosed disease in Ukraine increased in 10 years (2008–2017) and decreased in number of males, with a stable quarter of them. The rate among the latter is inferior to the rate among the number of registered, which has been more pronounced the last five years and is worrisome in terms of the likelihood of an increase in CC in this category in the near future. Regional peculiarities were manifested by an increase in the relevant data in the Southeastern, Southern regions and Kyiv.

Keywords: male population, chronic cystitis, incidence, prevalence.

Особливості захворюваності та поширеності хронічного циститу серед чоловічого населення України

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Метою дослідження було проведення аналізу тенденцій захворюваності та поширеності хронічного циститу (ХЦ) серед чоловічого населення України. *Матеріали та методи.* У звітних формах офіційної статистики за 2008–2017 рр. проаналізовано показники захворюваності та поширеності хронічного циститу серед чоловічого населення України. Для відстеження характеру та інтенсивності змін виділено два періоди (2008–2012 та 2013–2017).

Результати. Встановлено, що як серед загальної кількості зареєстрованих, так і серед виявлених уперше хворих на ХЦ в Україні, чверть з них припадає на чоловіків. З роками спостерігається їх зменшення. Водночас темп ХЦ серед чоловіків поступається кількості зареєстрованих, які взяті на облік, що більшою мірою проявилось в останні п'ять років. Це свідчить про ймовірність зміни ситуації в найближчий період у бік збільшення випадків захворювання серед чоловіків. У структурі розподілу хворих перші місця за кількістю чоловіків з ХЦ посіли Південно-Східний, Західний, Південний регіони. Рівні поширеності та захворюваності (на 100 тис. населення) серед чоловіків удвічі менші, ніж такі самі показники серед усього дорослого населення. Слід зазначити, що захворюваність на ХЦ зросла за 2013–2017 роки. Кожному регіону притаманні свої особливості, що проявляються як рівнями поширеності в областях, що входять до їхнього складу, так і характером їхньої динаміки. Ситуацію в Україні формують Південно-Східний, Південний регіони та м. Київ, де показники вищі за середньоукраїнські і продовжують зростати.

Висновки. За 10 років (2008–2017 рр.) кількість хворих на хронічний цистит (ХЦ) та вперше виявлених його випадків в Україні зросла, а чоловіків зменшилась, складаючи стабільну їх чверть. Показник серед останніх поступається показнику серед зареєстрованих, який був більш вираженим протягом останніх п'яти років і викликає занепокоєння з точки зору ймовірності зростання ХЦ у цій категорії найближчим часом. Регіональні особливості проявились у зростанні відповідних показників у Південно-Східному, Південному регіонах та Києві.

Ключові слова: чоловіче населення, хронічний цистит, захворюваність, поширеність.

Особенности заболеваемости и распространности хронического цистита среди мужского населения Украины

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Целью исследования было провести анализ тенденций заболеваемости и распространности хронического цистита (ХЦ) среди мужского населения Украины.

Материалы и методы. Показатели заболеваемости и распространности хронического цистита среди мужского населения Украины проанализированы в отчетных формах официальной статистики за 2008–2017 годы. Для отслеживания характера и интенсивности изменений были выделены два периода (2008–2012 гг. и 2013–2017 гг.).

Результаты. Выявлено, что как среди всего количества зарегистрированных, так и у впервые выявленных больных ХЦ в Украине, четверть из них приходится на мужчин. С годами наблюдается их уменьшение. При этом темп ХЦ среди мужчин уступает количеству зарегистрированных, взятых на учет, что в большей степени проявилось в последние пять лет. Это свидетельствует о вероятности изменения ситуации в ближайшее время в сторону увеличения случаев заболевания среди мужчин. В структуре распределения больных первые места по количеству мужчин с хроническим циститом занимают Юго-Восточный, Западный, Южный регионы. Уровни заболеваемости и распространности (на 100 тыс. населения) среди мужчин в два раза меньше, чем соответствующие показатели среди всего взрослого населения. Следует заметить, что заболеваемость ХЦ увеличилась за период 2013–2017 г. Каждому региону присущи свои особенности, проявляющиеся как уровнями распространности в областях, входящих в их состав, так и характером их динамики. Ситуация в Украине определяется Юго-Восточным, Южным регионами и г. Киевом, где показатели выше среднеукраинских и продолжают увеличиваться.

Выводы. Количество пациентов с хроническим циститом (ХЦ) и случаев впервые диагностированного заболевания в Украине увеличилось за 10 лет (2008–2017 гг.) И уменьшилось в количестве мужчин, которые стабильно составляют четверть из них. Показатель среди последних уступает показателю среди числа зарегистрированных, который был более выраженным в последние пять лет и вызывает беспокойство с точки зрения вероятности увеличения количества ХЦ в этой категории в ближайшем будущем. Региональные особенности проявились в росте соответствующих показателей в Юго-Восточном, Южном регионах и Киеве.

Ключевые слова: мужское население, хронический цистит, заболеваемость, распространность

Infections of the urinary tract are among the problems that do not become less topical over the years. This is due to its difficulty in treating and the threat to patients in terms of the nature of the pathology's survival with a tendency to relapse, associated with a decrease in physical, psycho-motivational activity up to the loss of employment [1, 2]. At the same time the number of publications devoted to an in-depth understanding of the pathogenesis of infectious and flammable diseases taking into account the state is increasing, their diagnosis and, in particular, their treatment, taking into account that urological infections are always potentially contagious with possible transmission of drug-resistant pathogenesis [3, 4].

At the same time, universal attention to different aspects of problematic issues cannot but have a positive impact on improving the quality of medical care, as authoritarians point out [5, 6]. This is particularly true for chronic cystitis (CC). According to information resources, practical urology has been for a long time proposing and implementing new and improved treatment methods as well as prophylactic measures, including performance-controlled complications in clinical practice [7, 8]. It should be noted that there are gender peculiarities that are taken into account in the clinical and diagnostic process.

Under these conditions, it is obvious that it is necessary to assess the impact of interventions aimed at changing the situation. From this perspective, data on the dynamics of prevalence and incidence rates are an objective criterion. The nature of their changes in recent years in comparison with previous years can indicate how effective they have been.

The objective: of the work was to conduct a trend analysis of the incidence and prevalence of chronic cystitis in the male population of Ukraine.

MATERIALS AND METHODS

The primary documents were the reporting forms of official statistics (F.F. № 7 and № 47) for 2008–2017. When analyzing the indicators of the incidence and prevalence of chronic cystitis among the male population of Ukraine, two periods (2008–2012 and 2013–2017) were distinguished. They were of interest in the comparative aspect both in terms of the well-known territorial changes that took place in the country, as well as, based on the essence of the work, to determine the dynamics of changes in the relevant indicators in their combination.

The research was conducted in the context of all regions of Ukraine, taking into account the regions included in their structure. Absolute values and special coefficients per 100,000 inhabitants were studied.

The statistical analysis of the obtained data used standard methods of evaluation of variation series (absolute increase or decrease, the rate of increase or decrease), if necessary, to bring the differences between the two statistical groups used Student's criterion.

RESULTS AND THEIR DISCUSSION

The 10-year (2008–2017) analysis of chronic cystitis patients registered in Ukraine showed their increase by 0.4% up to 65239 in 2017. The process was ambiguous in two periods: the first (2008–2012) saw a net increase (by 3.6%), the second a decrease (by 3.7%). While the number of such patients was low by the year, one quarter of them were men (Fig. 1), the regional distribution of these patients is shown in Table 1. One of the conclusions from Table 1 is that the first three places in the structural distribution were located in the Southeastern, Western and Eastern regions. The next – in a steady decrease of the said contingent, intensified over the years: in the whole of Ukraine for 10 years by 9.7% to 14,149 in 2017, for periods by 3.8% and 8.8% respectively. This process was driven by the Western, Eastern and Northern regions and the capital in the first five years, which were joined by the Central and Eastern regions in the next five years.

The leading region for the number of men with CC is consistently the Southeastern region (35.4–42.3%), and the last one is the Northeastern region (4.0–10.0%). The significant variability of the data resulted in determination of average values for the study periods which clearly indicate the nature of regional changes (Table 2).

According to Table 2, it was confirmed that in each region, with the exception of the Eastern region, during 2013–2017, the number of registered men with CC was significantly lower than in 2008–2012. Kyiv, where the number of first-time cases of CC in men is the same as in the Central and Western regions. Analyses by region revealed that 56% (9284 out of 16562) in 2008 and 61.3% (9162 out of 14949) in 2017 were in 10 regions. Ten of them, namely Ivano-Frankivsk, Lviv, Chernivtsi in the Western region; Zhytomyr, Kyiv, Cherkasy in the Central region; Poltava in the Northeastern region; Dnipropetrovsk, Kharkiv in the Southeastern and Odessa in the Southern region.

The prevalence of CC among the adult population of Ukraine (per 100,000 people) increased to 187.5 in 2017 compared to 171.5 in 2008. Among the male population, the rate was twice as low – 95.1 versus 97.3, respectively, and it appears to have decreased (by 2.3%). The analysis shows its non-stability in Ukraine and its administrative territories. During the first twenty years it

Table 1

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

Regions	2008	2009	2010	2011	2012	T n/a	2013	2014	2015	2016	2017	T n/a
	abs. %	abs. %	abs. %	abs. %	abs. %		abs. %	abs. %	abs. %	abs. %	abs. %	
Western	2964 17,9	2648 14,7	2912 17,8	2899 17,5	2685 16,9	-9,4	2337 14,2	2354 14,3	2219 14,4	2143 15,5	2265 15,1	-3,0
Central	1982 12,0	2257 12,6	2470 15,1	2390 14,4	2499 15,7	+26,0	2271 13,9	2097 12,8	2102 13,7	1890 13,7	1899 12,7	-16,4
Northeastern	683 4,1	1780 10,0	652 4,0	798 4,8	780 4,9	+14,2	779 4,8	800 4,9	617 4,0	604 4,4	933 6,2	+19,8
Southeastern	7014 42,3	6894 38,4	6296 38,6	6287 38,0	5550 34,8	-20,8	6294 38,4	5810 35,4	5685 37,0	5326 38,6	5997 40,1	-4,7
Southern	1256 7,6	1789 10,0	1789 11,0	1865 11,2	1837 11,5	+46,2	2582 15,7	2664 16,2	2590 16,8	1925 14,0	1976 13,2	-24,5
Kyiv	2663 16,1	2593 14,4	2209 13,5	2332 14,0	2574 16,2	-3,3	2132 13,0	2687 16,4	2184 14,2	1909 13,8	1879 12,6	-11,9
Ukraine	16562 100,0	17961 100,0	16328 100,0	16571 100,0	15925 100,0	-3,8	16395 100,0	16412 100,0	15397 100,0	13797 100,0	14949 100,0	-8,8

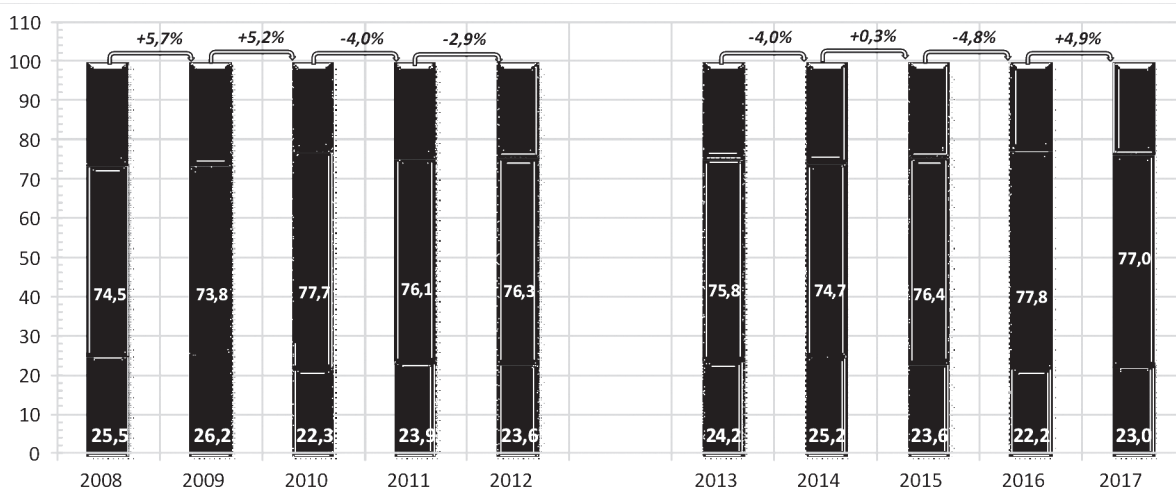


Figure 1. Structure of distribution of registered patients with chronic cystitis by gender

Table 2

Regional dynamics of the number of chronic cystitis cases in males by study periods; M±m

Regions	I period	II period
Western	2822±58,6	2264±47,6*
Central	2199±59,8	2052±47,8*
Northeastern	939±92,0	747±56,0*
Southeastern	6408±137	5769±155*
Southern	1707±103	2347±148*
Kyiv	2474±177	2158±131
Ukraine	16670±312	15390±444*

Note. * – Differences are valid between periods; p<0,05.

Table 3

Regional dynamics of prevalence rates of chronic cystitis in males over study periods (per 100,000 population); M±m

Regions	I period	II period
Western	78,0±6,5	74,2±1,2
Central	83,2±4,3	79,4±1,4
Northeastern	55,5±9,9	54,4±4,7
Southeastern	95,8±5,0	100,8±3,3
Southern	95,0±6,7	144,1±8,3*
Kyiv	228,7±12,2	205,9±12,7
Ukraine	102,7±8,8	94,1±2,4

Note. * – Differences are valid between periods; p<0,05.

fluctuated from 78.8 to 137.5, the second – from 87.3 to 103.0. To assess regional indicators, their average values were calculated for the periods presented in Table 3.

In comparative terms, the Ukrainian average (102.7±8.8 and 94.1±2.4) is higher than the average for Ukraine, which in fact shapes the situation on the whole, the most distinctive feature of the region is the Southeastern, the Southern regions and the capital city which, incidentally, demonstrate an increase in their rates with the same level in the Southern, in Kyiv they are twice as high as in Central Ukraine.

Each region has its own peculiarities, which are manifested both by the levels of width in the regions which make up their structure and by the nature of their dynamics. Thus, the first sign in the West is Chernivtsi region, where indices are two times higher than in other regions (190.0±20.7 and 155.1±3.4 for each period), but in Ivano-Frankivsk and Ternopil the indicators increased significantly (from 63.9±4.6 to 76.9±3.2 and from 72.0±5.3 to 94.5±1.7 respectively).

In the Central region – Zhytomyr with values 97.7±10.2 and 101.3±2.9 (p>0.05). The Dnipropetrovsk region (212.0±7.4 and 219.4±11.2) and Kharkiv, with a significant increase from 120.3±10.0 to 201.3±12.2 in the second period. In the Southern region, the main focus was on the Mykolayiv region (150.1±19.5 and 248.2±29.8; p<0.05) and Odessa region (180.0±2.4 and 109.2±1.6; p<0.05).

Thus the prevalence of CC among the adult population is almost twice as low as among the adult population in Ukraine and tends to decrease. The highest indicators were found to be in the Southeastern, Southern regions and Kyiv, the first two show their growth. The intra-regional peculiarities are of importance in the form of the defined regions, which form the spread both in the given region and in Ukraine (Chernivtsi, Zhytomyr, Dnipropetrovsk, Kharkiv, Mykolayiv, Odessa).

The first identified men with CC usually accounted for one quarter of the total number of cases. In 2008, a total of 14,703 such cases were reported in Ukraine, of which 3,952 were men (26.2%), in

Table 4

Dynamics of regional distribution of the number of first-time patients with chronic cystitis in males

Regions	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
	abs. %	abs. %	abs. %	abs. %	abs. %	abs. %	abs. %	abs. %	abs. %	abs. %
Western	772 19,5	883 20,5	1020 10,4	857 22,2	723 19,5	728 18,8	656 17,1	768 19,9	632 20,1	770 20,2
Central	535 13,5	446 10,4	464 4,7	454 11,8	595 16,0	448 11,5	458 12,0	534 13,8	456 14,5	486 12,7
Noutheastern	210 5,3	253 5,9	148 1,5	186 4,8	205 5,5	143 3,7	180 4,7	138 3,6	121 3,9	405 10,6
Southeastern	1881 47,6	2197 51,1	7471 76,3	1818 47,2	1584 42,6	1539 39,6	1462 38,2	1083 28,0	907 28,9	1071 28,0
Southern	202 5,1	219 5,1	383 3,9	230 6,0	257 7,0	724 18,6	652 17,0	1004 26,0	664 21,1	643 16,8
Kyiv	352 8,9	300 7,0	306 3,1	308 8,0	349 9,4	300 7,7	420 11,0	341 8,8	359 11,4	442 11,6
Ukraine	3952 100,0	4298 100,0	9792 100,0	3853 100,0	3713 100,0	3882 100,0	3828 100,0	3868 100,0	3139 100,0	3817 100,0

Table 5

Dynamics of the number of men firstly diagnosed with chronic cystitis on a regional basis by study period (M±m)

Regions	I (2008–2012)	II (2013–2017)
Western	851±28,4	711±26,0*
Central	479±11,5	476±14,3
Noutheastern	200±15,5	197±48,0
Southeastern	2987±189	1212±103
Southern	257±27,3	734±62,0*
Kyiv	323±10,2	372±23,6*
Ukraine	5118±960	3707±130

Note. * – Difference is valid between the indicators for the periods; p<0,05.

2017. 151112 and 3817 (25.2%) respectively. Therefore, in 10 years there was a decrease by 3.4% with the consolidation of the process over the last five years (by 1.7% vs. 6% in the previous year).

The average number of cases in Ukraine was 14447±158 and 14819±99 (p<0,05), of males 5118±960 and 3707±130 patients (p<0,05). These data show that on the background of significant increase in the number of patients, the number of males among them is decreasing. With all fluctuations of the data over the years, the above is true for all regions, except for Southern and Kyiv, which is shown in Table 4. The same is true for the averaged values presented in Table 5.

The first three places in the contingent distribution structure belonged to the Southeastern, Western and Southern regions.

Each region is distinguished by the number of first-time offenders. These are matched by those with the highest number of cases. Namely Ivano-Frankivsk, Lviv, Chernivtsi, Zhytomyr, Cherkasy, Poltava, Dnipropetrovsk, Kharkiv, Mykolayiv, Odessa and Kyiv. They accounted for 3001 out of 3817 patients (70.6%) in 2017.

An analysis of the prevalence rates for CC among the male population (per 100,000 people) it was found that, similar to absolute numbers, they are almost twice as low as in Ukraine as a whole; in 2008. 23.2 vs. 38.8, in 2017. 24.3 versus 43.4 respectively. At the same time, indicators grew over 10 years by 4.7%, but only in the last five years (2013–2017) by 5.6% with a decrease in the first 5.6% (from 23.2 to 21.9 in 2012). In order to identify the main trend, their values were averaged over periods.

They show that the situation in Ukraine is shaped by the Southeastern, Southern regions and Kyiv where the indices are higher than in the average Ukrainian; namely: 37.6±73.1 and

22.9±1.8; 14.6±4.5 and 49.0±3.4; 30.0±1.3 and 35.1±2.1 versus 29.3±1.5 and 23.1±2.8. Of importance are also the areas of high levels of morbidity that influence the regional dynamics of the process. These include: Ivano-Frankivsk region (23.2 and 27.0), Ternopil region (21.4 and 30.6), Chernivtsi region (49.2 and 44.7) in the Western region; Zhytomyr region (22.5 and 31.4), Cherkasy region (30.7 and 23.5) in the Central region; Dnipropetrovsk (62.0 and 53.7) for the Southeastern region; Mykolaiivska (9.1 and 107.2), Khersonka (20.8 and 147.0) for the Southern region.

Thus, with the annual decrease in the number of men with newly diagnosed CC in Ukraine, the largest number of them are concentrated in the Southeastern, Western, and Eastern regions. The incidence rate (per 100,000 people) increased over the last five years (2013–2017) by 5.6% to 24.3. The areas identified in each region that influence the situation there and, in turn, the regions that shape it in Ukraine.

It is worth noting that the rate of decline in first-time occurrences of CC is lower than the rate of decline in the number of cases reported, which has been more pronounced over the past five years. This is alarming as it can be interpreted as already showing a willingness to change the situation in the coming years towards an increase in CC among the male population.

CONCLUSIONS

1. The number of patients with chronic cystitis (CC) and cases with newly diagnosed disease in Ukraine increased in 10 years (2008–2017) and decreased in number of males, with a stable quarter of them. The rate among the latter is inferior to the rate among the number of registered, which has been

more pronounced in the last five years and is worrisome in terms of the likelihood of an increase in CC in this category in the near future. In the structure of their distribution, the first place belongs to the Southeastern, Western and Southern regions. The areas for which the overall situation is shaped are identified.

2. The prevalence and incidence of chronic diseases of CC in males is found to be twice as low as in the adult Ukrainian population. With their decrease over the years, only the incidence of disease increased in 2013–2017. Regional peculiarities were manifested by an increase in the relevant data in the Southeastern, Southern regions and Kyiv.

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