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Comparative analysis of the morbidity of chronic cystitis in Ukraine

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SUMMARY

In a work on the basis of the official forms of the statistical reporting of FF. № 47-healthy – “Report on the network and activities of medical institutions”, № 12 – “Report on the number of diseases registered in patients living in the service area of the medical institution” for 2008–2017 presents an analysis of the incidence, prevalence of chronic cystitis among the adult population, taking into account of gender. Conducted nest-typological epidemiological study, which included the South-East region in a comparative aspect with the data for Ukraine as a whole. The trend dynamics of these processes, the features and differences of changes, are revealed due to the envisaged allocation of two five-year periods (2008–2012 and 2013–2017). The results of comparing their character among the six regions that are part of the region (Dnipropetrovsk, Donetsk, Lugansk, Zaporizhzhia, Kirovograd, Kharkiv) became significant. Revealed the need for further research to establish the causes and targeted development of clinical and organizational measures in the Dnipropetrovsk and Kharkiv regions, where all the years of observation are concentrated the largest number of patients with chronic cystitis than in any other in Ukraine.

INTRODUCTION

One of the warehouses for the health of the population, unfortunately, is objectively recognized as unsatisfactory, there are real reasons for this. According to the manifestation of this direct link, from the broadest possible extensions and socially significant diseases, it is obvious that they need for in-depth study [1, 2, 3]. Since the classic prerequisite for this process is the data of epidemiology, as the

basis for the development of control and prevention of measures, such a study is considered relevant and promising in its results in relation to chronic cystitis (CC). Such information is of particular importance for individual territories from the practical point of view the relevant decisions. In this case, it is worth repeating the well-known statement that urinary tract infections are considered one of the most common urological diseases [4, 5]. More than 150 million cases are recorded annually in both inpatient

and outpatient settings in the world, most of which clearly belong to women [6, 7]. Along with the frequency, the pathology attracts attention with its negative impact on physical and psycho-emotional activity, and the recurrent nature of the course indicates the presence of unresolved medical aspects, which in 50% of cases causes disability [8, 9].

Purpose to examine the features and nature of the dynamics of the incidence and prevalence of chronic cystitis among the adult population of the South-Eastern region in a comparative aspect with the data in Ukraine as a whole.

MATERIALS AND METHODS

The paper analyzes the data of official statistical reporting F. № 47-healthy – “Report on the network and activities of medical institutions”, F. № 12 – “Report on the number of diseases registered in patients living in the service area of the medical institution” for 10 years (2008–2017), which allows us to trace the main trend in the dynamics of prevalence and incidence of chronic cystitis among the adult population of Ukraine in a comparative aspect with the Northeast region, in particular, as the largest in number and capacity of industrial production. The allocation of two five-year periods of five years (2008–2012 and 2013–2017), in addition, will determine the nature of changes in processes, their intensity. The investigation involves the study of a data based on gender. Time series are represented by absolute values and intensive coefficients per 100 thousand of the corresponding population.

When processing the results, the classical approach was used: changes in absolute values were compared, the rate of increase (decrease), the coefficient of clarity were determined. If it is necessary to compare two statistical sets, the Student’s criterion was used.

RESULTS AND DISCUSSION

There is an accumulation of patients with chronic cystitis (CC), which was observed in 2008–2017 in Ukraine. Despite the fact that their growth decreases over the years, the fact itself, given the importance and urgency of the problem of inflammatory diseases of the urinary system with known features and adverse effects, needs attention. It should, first of all, be aimed at identifying the nature of the disease, the prevalence of pathology, taking into account the administrative territories of the country, which will determine not only the further search for causes, but also, as a result, in developing appropriate measures to target the situation. In particular, in 2017, 65,239 patients with CC were registered in Ukraine, which is 0.4% more than in 2008. However, if we compare the changes

over five years, in the first (2008–2012) the figure was 3.6% (67,295 in 2012 against 64,947 in 2008), and in the second (2013–2017) their number decreased (by 3.7%), which is explained by the known territorial transformations. In the structure of the distribution of registered patients during the observation, the first place belonged to the South-Eastern region, where over the years they were concentrated from 30.0% to 37.4%. The region is of particular interest in terms of careful study. First of all, more than 25.4% of the total population of Ukraine lives in it. It consists of six regions (Dnipropetrovsk, Kharkiv, Donetsk, Luhansk, Zaporizhzhia, Kirovohrad), the population of the first two of which exceeds 2 million and on this basis they are larger than all other regions. In addition, attention is drawn to the industry in them with the predominance of heavy industry. The specific dynamics of registered patients with CC in the region is as follows. In 2017, 19,616 people were registered, which are 16.8% less than in 2008, the intensity of the process is close for two five-year periods (12.8% and 11.8%, respectively). On average, there were 23138 ± 245 and 19940 ± 553 ($p < 0.05$) patients in each of them. However, important data are hidden behind the general picture, especially if we take into account the inaccuracy, incomplete information from two regions (Donetsk and Luhansk), which in some way affects it. It turned out that 70–87.5% of patients registered in the region accounted for three regions (Dnipropetrovsk, Kharkiv, Zaporizhzhia), and in four there was an increase. In three it was reliable, namely: respectively in the first and second periods: Dnipropetrovsk (7514 ± 102 and 8100 ± 136), Kharkiv (5775 ± 273 and 6692 ± 306), Zaporizhzhia (1268 ± 50 and 1510 ± 58) and in Kirovograd (876 ± 22 and 926 ± 45 ; $p > 0.05$). As in Ukraine as a whole, 2.0–2.5 times more women. In 2017, there were 50,290 of them against 14,949 men, in the region 13,619 and 5,997, respectively. It is noteworthy that the periods of reduction of the latter slow down with a more active process among women. On average, during 2008–2012 there were 16665 ± 186 women, men – 6408 ± 137 , 2013–2017 14118 ± 87 and 5769 ± 155 , respectively.

Since the more objective characteristics of demographic processes are represented by intensive coefficients (per 100 thousand people), we will comment on the results of their study. It turned out that over 10 years the prevalence of CC among the population of Ukraine increased by 9.3% (in 2017 – 187.5 against 171.5 in 2008); over the last five years at a slower pace (by 3.4% compared to 4.7% in previous years). The increase was higher among women (by 13.5% to 263.6 against 232.2, respectively), more pronounced also in the second period (by 5.4% against 1.0% in the first), while among men a steady decrease over 10 years by 2.3%

(from 97.3 to 95.0) slowed down (2.0% vs. 3.1%, respectively). In terms of prevalence, the South-Eastern region ranked third after the city of Kyiv and the South in the last five years. In 2017, the figure was 166.7 and was higher by 6.1% than 10 years in a row, the feature was manifested in its increase by 9.7% from 2013 to 2017 with a decrease of 12.0% (from 157.1 in 2008 to 138.2 in 2012), which is different from the nature of changes in the country. In terms of regions, the prevalence level increased significantly in Dnipropetrovsk (from 268.3 ± 10.3 to 299.7 ± 7.5), Zaporizhzhia (from 83.7 ± 6.9 to 102.4 ± 9.8) and Kharkiv from 247.4 ± 23.1 to 292.6 ± 17.8). Due to the significant variability of time series, averages over the study periods were calculated to determine the main trend. It turned out that they are close in Ukraine among the entire population, in fact, their values did not differ (181.7 ± 2.9 and 182.7 ± 2.0), while in the region they became larger from 152.1 ± 3.7 to 159.2 ± 2.4 , respectively, for 2008–2012 and 2013–2017. As in Ukraine, the prevalence of CC in the region is formed by women, whose levels are 2–3 times higher than men; in 2017 were 214.6 ± 13.2 and 114.6 ± 10.6 , respectively. Over the years, there was a significant increase of women: in the region (192.3 ± 1.4 and 206.5 ± 1.0), in the country (233.5 ± 10.9 and 255.1 ± 1.1). It also occurred among men in the region (95.8 ± 5.0 and 100.8 ± 3.3 ; $p > 0.05$), which distinguishes it among the decrease in Ukraine (102.7 ± 8.0 and 94.1 ± 2.4 by periods; $p > 0.05$).

In terms of the number of newly detected cases of CC South-Eastern region also ranks first; over the years they accounted for 25.0–52.0%. However, in contrast to the dynamics of the country as a whole, where their increase was observed, in the region the process was reversed. Thus, in 2017, 15,112 patients with CC were diagnosed for the first time in Ukraine against 14,703 for 10 years in a row (by +2.8%), and in 2013–2017 they increased by 2.1% against 0.8% in 2008–2012, they decreased in the region: in 2017: 3785 against 5624 in 2008 (by 32.7%) and by 12.0% and 31.3% by periods, respectively, which was influenced by the data of Donetsk and Luhansk regions. It should be noted that Dnipropetrovsk and Kharkiv regions are distinguished by the number of such cases, in 2008 they accounted for 60.0% (3395 out of 5624), in 2017 – 69.6% (2633 out of 3785). At the same time, if in the Dnipropetrovsk region there were no significant changes in the periods (on average their number was 2081 ± 51.7 and 2007 ± 117.0), they were significant in their increase in Zaporizhzhia (363 ± 12.3 and 403 ± 27.0), Kharkiv (957 ± 61.0 and 1068 ± 40.0), Kirovohrad (299 ± 19.5 and 409 ± 3.4). The general feature of women's preference (2.7–3.5

times) is preserved everywhere. However, the increase in such cases by periods among them by 3.4% and 12.4%, and for 10 years by 5.0% in Ukraine to 11,295 patients in 2017 was accompanied by a slow decrease of men (by 6.0%, 1.7% and 3.4%) to 3817 in 2017. This process differed in the region. Mutual reduction was more pronounced among men. Thus, its rate among women was 2.9%, 21.1% and 27.5%, respectively, for 10 years to 2714 patients, men, respectively, by 15.8%, 30.4% and 43.1% to 1071 people. Summing up, we note that the average first detected cases of CC among women in 2008–2012 and 2013–2017, respectively, were 3432 ± 97.0 and 3270 ± 153.0 ($p > 0.05$) among men 2987 ± 189 and 1212 ± 103 ($p < 0.05$).

The results of the study of intensive indicators (per 100 thousand people) showed an increase in the incidence of disease in the country ahead of the level for 2013–2017 (by 9.6% against 1.8% for 2008–2012), for 10 years by 11.9% to 43.4 against 38.8, respectively. In contrast, the South-East is characterized by the reverse nature of the changes, namely a decline in the incidence of disease of 11.5% and 11.0% over five years and for 10 years by 7.2% to 36.2 in 2017. With significant data variability in the regions, including the South-East (in the range of 30.0–61.8 for the first five years and 36.2–41.0 for the next), in a comparative aspect with others it is possible to trace that it is more often owned the second–third place. The average values of the levels by periods for it were 40.7 ± 5.0 and 40.3 ± 1.3 , while in the country as a whole 42.5 ± 3.7 and 42.7 ± 0.7 . It should be noted that the incidence rate in the region, regardless of the trend and the nature of its changes, is formed by three regions: Dnipropetrovsk (74.6 ± 1.8 and 74.2 ± 3.9 over five years), Kharkiv (41.0 ± 3.0 and 46.6 ± 3.6) and Kirovohrad (35.8 ± 2.4 and 50.8 ± 4.0 ; $p < 0.05$, respectively). It is formed, as well as in the whole country, at the expense of female patients. The indicator among them is twice as high among men: in 2017, 47.8 ± 8.5 against 22.0 ± 6.9 , respectively; in the country 59.2 against 24.3). Dnipropetrovsk (90.6 ± 3.0 – among women and 53.7 ± 1.9 – among men), Kharkiv (65.2 ± 2.8 and 24.2 ± 3.4), Kirovohrad (74.6 ± 4.2 and 22.3 ± 3.8), Zaporizhzhia (women only 51.2 ± 4.1) are distinguished by high levels. During almost all years of observation in the first three regions, the incidence among women is higher than the all-Ukrainian one (table 1).

Thus, Ukraine is characterized by an increase in the incidence of CC, the level of which increases every five years and is mainly due to women. With the reverse nature of changes in the region, there is a similarity of processes in terms of higher levels among women, which actually form the overall picture in the

TABLE 1. Number of registered patients with chronic cystitis in Ukraine and its regions by periods (M±m)

Regions	Periods	
	I (2008–2012)	II (2013–2017)
West	12163±249	10663±187*
Central	8094±233	8167±673*
Northeastern	3524±123	3954±157*
Northeastern	23138±245	19940±553*
Southern	6402±238	8386±301*
Kyiv	15178±280	13400±409*
Ukraine	68498±845	65084±800*

Note: * – the difference between the indicators between the periods is significant, $p < 0.05$.

country and the region. At the same time, the identified areas in the latter are important, paying attention to the size of the indicators and their growth.

CONCLUSIONS

It was found that for 10 years (2008–2017) the South-Eastern region leads in Ukraine in the number of registered (29.7–37.4%) and newly diagnosed (25.0–52.0%) patients with chronic cystitis in 2017: 19616 and 3785 people against 65239 and 15112 in the country respectively. Peculiarity of the dynamics in the decrease of the contingent: the former by 16.8%, the latter by 32.7% against the background of the increase in the country by 0.4% and 2.8%, respectively. Per 100 thousand prevalence rates in the region in 2017 were 166.7 against 157.1 in 2008, in Ukraine 187.5 against 171.5, incidence of disease – 36.2 against 39.0 and 43.4 against 38.8 respectively.

The contingent of patients with chronic cystitis is everywhere formed by women, which are 2–3 times more; in 2017, among the registered in the region there were 13619 against 5997 men, in the country 50290 against 14949, among the first detected – 2714 against 1071 and 11295 against 3817 respectively. The region is characterized by a decrease in patients of both sexes: slower men among all registered and more intense among newly diagnosed, which differs from changes in Ukraine where for them the general trend is less relevant for the first time when women grow up. Prevalence levels (per 100 thousand) in 2017 among women – 214.6 against 114.6 men; incidence of disease: 47.8 vs. 22.0; in Ukraine – 263.6 against 95.1 and 59.2 against 24.3, respectively.

In the South-Eastern region, out of six, four regions are distinguished by the number and increase of registered patients with CC, namely Dnipropetrovsk (from 7514±102 to 8100±136 for 2008–2012 and 2013–2017), Kharkiv (with 5775±273 to 6692±316), Zaporizhzhia (from 1268±50 to

1510±58.0), Kirovograd (from 876±22 to 926±45 respectively), with the first two all years having more patients than others regions of Ukraine. A similar feature is in relation to patients with a first diagnosis.

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РЕФЕРАТ

Порівняльний аналіз захворювання ності на хронічний цистит в Україні

В.П. Стусь, Н.О. Сайдакова,
Н.В. Гавва, В.І. Гродзінський

В роботі на основі вивчення форм ФФ. № 47-здоров – «Звіт про мережу та діяльність медичних установ», № 12 – «Звіт про число захворювань, зареєстрованих у хворих, які проживають в районі обслуговування лікувального закладу» офіційної статистики за 2008–2017 рр. представлений аналіз захворюваності та поширеності хронічного циститу серед дорослого населення з урахуванням статі. Застосовано гніздово-типологічний метод епідеміологічного дослідження. Воно включало дані по Південно-Східному регіону в порівняльному аспекті із відповідними в цілому по Україні. Виявлена трендова динаміка зазначених процесів, особливості та відмінності їх змін, чому сприяло виділення двох п'ятирічних періодів (2008–2012 рр. та 2013–2017 рр.). Значимими стали результати співставлення їх характеру в розрізі шести областей, що входять до складу регіону (Дніпропетровська, Донецька, Луганська, Запорізька, Кіровоградська, Харківська). Виявлено, що особливої уваги з них в плані подальшого дослідження причин із прийняттям цілеспрямованих заходів потребують Дніпропетровська та Харківська області, де зосереджено впродовж усіх років спостереження більше хворих на хронічний цистит, ніж в будь-якій іншій в країні.

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

РЕФЕРАТ

Сравнительный анализ заболеваемости хроническим циститом в Украине

В.П. Стусь, Н.А. Сайдакова,
Н.В. Гавва, В.И. Гродзинский

В работе на основе официальных форм статистической отчетности ФФ. № 47-здоров – «Отчет о сети и деятельности медицинских учреждений», № 12 – «Отчет о числе заболеваний, зарегистрированных у больных, проживающих в районе обслуживания лечебного учреждения» за 2008–2017 гг. представлен анализ заболеваемости, распространенности хронического цистита среди взрослого населения с учетом пола. Проведенное гнездо-типологическое эпидемиологическое исследование, которое включало Юго-Восточный регион в сравнительном аспекте с данными по Украине в целом. Виявлена трендовая динамика указанных процессов, особенности и различия изменений, за счет предусмотренного выделения двух пятилетних периодов (2008–2012 гг. и 2013–2017 гг.). Значимыми стали результаты сравнения их характера среди шести областей, которые входят в состав региона (Днепропетровская, Донецкая, Луганская, Запорожская, Кировоградская, Харьковская). Виявлена необходимость дальнейшего исследования по установлению причин и целевой разработки клинко-организационных мероприятий в Днепропетровской и Харьковской областях, где сосредоточено все годы наблюдения наибольшее количество больных с хроническим циститом, чем в любой другой в Украине.

Ключевые слова: хронический цистит, взрослое население, заболеваемость, распространенность.