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ANALYSIS OF AVAILABILITY OF ANTITUBERCULOSIS DRUGS IN UKRAINE

In Ukraine, the fight against the epidemic of tuberculosis is one of the priorities of the state policy in the health system. One step solution to this age-old problem is the study of the modern pharmaceutical market antituberculosis drugs action.

Key words: tuberculosis; pharmaceutical care; availability ofantituberculosis drugs.

FORMULATION OF THE PROBLEM

Pharmaceutical market in Ukraine is full of drugs, but the possibility of treatment is very limited. This is due to the low income of the majority and therefore inaccessible to them new and expensive drugs, irrational funding from the state and use purchased with funds from the state budget drugs in treatment regimens by physicians, and the spread of bacterial resistance to existing medicines. [1, 2, 4, 5, 6].

REVIEW OF RECENT RESEARCH AND PUBLICATIONS

To solve the issues above need coordinated work of all health sector based on socio-economic status of the population that will ensure the availability of treatment. In literature research structure dedicated work of Mitnick Z.M., Protsyuk R.G., Munro S.A., Storla D.G. and other [1, 2, 4, 5, 6].

RELEASE NO EARLIER SOLVED PART OF THE PROBLEM

According to the WHO tuberculosis kills more people than any other infectious agents. Therefore, it is important to determine the availability of therapy for this disease using drugs that are present on the Ukrainian market. The research results can be used to analyze the quality of pharmaceutical care for patients with tuberculosis (TB), WHO established − namely, accessibility, rationality and efficiency.

GOALS OF THE ARTICLE

The main purpose of this article is to identify indicators of availability and price indices for drugs to treat tuberculosis for the years 2008-2011. The study we have used the following methods: retrospective, logical, systematic, analytical, and marketing analysis method.

THE MAIN MATEREAL STUDY

To calculate all the medications used to treat TB were divided into three groups: drug 1 series - is prescribed to patients with newly detected and recurrence of the disease, drugs II series - used only in individualized chemotherapy regimens in patients with tuberculosis IV categories, which determine drug resistance drug I series, as well as other categories of patients with drug resistance or poor I number them tolerance, and other drugs that are registered as TB, but not related to the drugs I or II series, and the fixed combination of drugs and II series. [3, 7, 8, 9, 10].

At the first stage of the study was defined price index. Price index (IP) − is a relative measure of ratios or percentages, which characterizes the change in prices over time. It shows how to change the price level during the period or held inflation or deflation.

The calculation was carried out using the formula:

$$I_P = \frac{P_1}{P_0}$$

P_1 − the average price of medicine in the current period;

P_0 − the average price of medicine in the previous period.

The results are presented in Table. 1. and Fig. 1. and Fig. 2.

Table. 1.

**RESULTS OF MONITORING CHANGES
IN THE INDEX OF PRICES FOR DRUGS
TO TREAT TUBERCULOSIS 2008-2011**

| Produceres	2008	2009	2010	2011
Price index				
Medicines I series				
Native	1,28	1,13	1,16	1,26
Foreign	0,86	1,05	1,05	–
Medicines II series				
Native	1,03	1,23	1,11	1,1
Foreign	1,12	1,24	1,06	1,07
Other				
Native	–	–	1,05	1,04
Foreign	–	1,02	1,01	–

By the analysis results occur following price changes. In 2008, a 28 % increase in the price of native products and series next year by 13 % and further increased to 16 % in 2010 and 26 % in 2011. On foreign medicines in 2008 marked a decline in prices of 14 %, and in the next two years, an increase of 5 %. In 2011, we were unable to calculate the index, because of their absence on the wholesale market.

For drugs II series was a significant rise in prices in 2009 by 23 % and 24; % for drugs national and foreign production, further held annually increase by 10 % and 6 % respectively.

Dynamics of prices for a group of other drugs was identified only in some years because they were not always present in the market. For native preparations of this group the average price increased by 5 %. In foreign-made products marked even maller value price growth − 2 %.

	2008	2009	2010	2011
I	1,28	1,13	1,16	1,26
II	1,03	1,23	1,11	1,1
other			1,05	1,04

Figure.1. Results *of monitoring changes in the price index for native medicines for 2008-2011*

	2008	2009	2010	2011
I	0,86	1,05	1,05	
II	1,12	1,24	1,06	1,07
I Other		1,02	1,01	
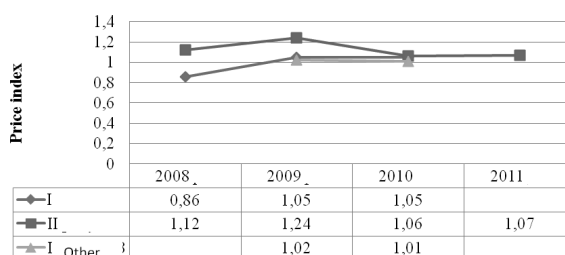
Figure 2. *The results of monitoring changes in the price index for foreign medicines 2008-2010*

The next stage of our research was conducted by analysis of the availability of medications 2008-2011 antituberculousis action. [5]. Availability was calculated by the following formula:

$$D = \frac{I_x \times Z_{\min}}{I_s \times V_k},$$

where I_x − the index of change in average salary for a specified period;

I_s −consolidated price index for medicines for the same period;

$Z_{\min}$ − the minimum wage in the country;

V_k −The cost of the consumer basket for the study period.

To achieve state-guaranteed affordability threshold drug availability index must be greater than or equal to unit ($D \geq 1$). Calculations indicators, namely the index of change in average wage, minimum wage, the cost of the consumer basket for the years 2008-2011, were carried out according to the State Statistics Committee of Ukraine.

The calculated values of indicators availability for the years 2008-2011 show that the pharmaceutical availability had significant changes. Thus, the lowest availability to all antituberculosis drugs action occurred in 2009. This can be explained by the fact that the rate of minimum wage subsistence i did not meet the actual situation and were low, and the price index for drugs - overpriced. The reasons for this situation is the devaluation of the currency (inflation).

The analysis of availability for 2008-2011, the group of foreign drugs in comparison with native showed that foreign drugs are more readily available to the public. Thus, the rate of availability to foreign drugs and number in 2008 was **1.44**, in 2009 - **1.01** in 2010 - **1.13**. In turn, the rate of availability to drugs and native series in 2008 was **1.06**, in 2009 - **0.95**, in 2010 - **1.05**, in 2011 - **1.07**.

These facts, of course, should be assessed as a negative trend, which in turn is a consequence of excess growth rates of national drugs compared to imported medicines. At the same time, it should be noted that in 2010-2011, there is a tendency to increase availability of drugs indicator as to foreign and so on native anti-TB medicines.

CONCLUSIONS AND FURTHER DEVELOPMENTS

There is a greater availability of drugs for treatment of tuberculosis foreign production in the period 2008-2011, which explains the lack of significant increase in wholesale prices. Availability of Ukrainian-made for the working population tends to decline, but increases for the poor.

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АНАЛІЗ ПОКАЗНИКІВ ДОСТУПНОСТІ ПРОТИВОТУБЕРКУЛЬОЗНИХ ЛІКАРСЬКИХ ЗАСОБІВ В УКРАЇНІ

Фармацевтичний ринок України насичений різними лікарськими засобами, але можливість лікування хворих обмежена, що пов'язано з низьким рівнем доходів більшості населення і недоступністю для них вартісного лікування. Тому важливим є визначення доступності препаратів для терапії туберкульозу на ринку України.

Ключові слова: туберкульоз; фармацевтична допомога; доступність протитуберкульозних лікарських препаратів.

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АНАЛИЗ ПОКАЗАТЕЛЕЙ ДОСТУПНОСТИ ПРОТИВОТУБЕРКУЛЬОЗНИХ ЛЕКАРСТВЕННЫХ СРЕДСТВ В УКРАИНЕ

Фармацевтический рынок Украины насыщен различными лекарственными препаратами, но возможность лечения больных ограничена, что связано с низким уровнем доходов населения и недоступностью для них дорогостоящего лечения. Поэтому, важным єтапом является определение доступности препаратов для лечения туберкулеза на рынке Украины.

Ключевые слова: туберкулез; фармацевтическая помощь; доступность противотуберкулезных лекарственных препаратов.

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