

**ANALYSIS OF RANGE AND ECONOMIC AVAILABILITY  
OF ORAL HYPOGLYCEMIC DRUGS  
IN THE PHARMACEUTICAL MARKET OF UKRAINE IN 2012-2014**

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**Introduction.** Diabetes mellitus (DM) – is the endocrine disease. It is characterized by chronic increase the level of glucose in the blood due to absolute or relative insulin deficiency. This leads to disruption of all types of metabolism, vascular damage, nervous system and other organs and systems. Diabetes mellitus is one of the most common disease, it occupies the main place not only in the structure of endocrine diseases, but also among the diseases of non infectious nature: on a death rate it occupies the third place after cardiovascular and oncologic pathologies. Every year recorded 7 millions of new cases of DM in the world. In 85-90% of cases it is DM of type 2. Prevalence of DM is increasing all time. Diabetes mellitus shortens the life of millions of people on the planet and its complications lead to decreasing in quality of life, disability and increasing of demand in hypoglycemic agents. In this connection the study the assortment of antidiabetic drugs in the pharmaceutical market, that allows us to determine how much the current range of these drugs in Ukraine, is necessary.

**The aim** - to analyze the range and economic availability of oral hypoglycemic drugs (OHGDs) in the Ukrainian pharmaceutical market in 2012-2014.

**Objects.** Register of retrieval information of "Morion" system, Compendium on-line. For analysis the social and economic availability of OHGDs indicator of solvency adequacy (Ca.s.), which shows percentage of patient salary on course dose of the drug, was calculated. The value of average salary in Ukraine during the studied years were found at the website: [www.ukrstat.gov.ua](http://www.ukrstat.gov.ua). According to the value of the indicator Ca.s. all trade names (TNs) of OHGDs were divided into three categories: highly available with  $Ca.s. < 5\%$ , medium available ( $5\% < Ca.s. < 15\%$ ) and low available ( $Ca.s. < 15\%$ ).

**Results and discussion.** In Ukraine in 2014 on the basis of 23 INNs 138 TNs of OHGDs were registered, among them 40 % were domestic and 60% were foreign production. Quantitative analysis of the TNs in 2012-2014 was carried out. As a result of the analysis it was found, that the number of TNs of metformin (biguanide) of domestic production from 2012 to 2014 increased (in 2012 - 8 TNs, in 2014 - 19 TNs), as well as derivatives of sulfanilamide: glimepiride (in 2012 - 10 TNs, in 2014 - 15 TNs), gliclazide (in 2012 - 3 TNs, in 2014 - 9 TNs), glibenclamide (in 2012 - 2 TNs, in 2014 - 6 TNs). In the structure of foreign drugs the tendency their number

reducing in the Ukrainian market has been established. For metformin drugs were determined 32 TNs in 2012 and 29 TNs in 2014, for glimepiride - 20 TNs in 2012 and 17 TNs in 2014, for gliclazide - 3 TNs in 2012 and 4 TNs in 2014, for glibenclamide - 2 TNs in 2012 and 2 TNs in 2014. Also, a comparative analysis of prices was conducted. As a result it was found, that the prices of products both foreign and domestic production increased slightly.

In order to analyze the availability of OHGDs indicator of solvency adequacy (Ca.s.) has been calculated for the 23 INNs. Low value of indicator of solvency adequacy ensures the availability of drugs and guaranteed its sales in low solvency of the population. It is found, that highly available drugs with  $Ca.s. < 5\%$  were metformin, glibenclamide, gliquidone, glimepiride, voglibose, repaglinide, dapagliflozin, izodibut and combinations of drugs: glibenclamide with metformin, glipizide with metformin, metformin with glimepiride, glimepiride with pioglitazone and metformin. Medium available drugs, whose  $5\% < Ca.s. < 15\%$ , were gliclazide, pioglitazone, saxagliptin and guar gum. The low available drugs, whose  $Ca.s. < 15\%$ , were sitagliptin, vildagliptin, combination of metformin with sitagliptin, metformin with saxagliptin and new class of drugs exenatide and liraglutide. These drugs are the most effective and safe. In 2012 in Ukraine an innovative product - liraglutide (Viktoza<sup>®</sup>) was registered, later its analogue exenatide (Baeta<sup>®</sup>) was released in the market. These drugs are the first analogs of human glucagon-like peptide-1 (HP-1) in the world. At the present time liraglutide (Viktoza<sup>®</sup>) and exenatide (Baeta<sup>®</sup>) approved for use not only in the combination with other oral hypoglycemic agents, but also as monotherapy. These drugs can effectively do control the carbohydrate metabolism in patients with overweight and obesity and better influence on the level of postprandial glycemia in comparison with other drugs, have proven effect on reducing body weight, provide low risk of hypoglycemia and favorable impact on the cardiovascular system. Another noteworthy effect of these drugs is reduce blood pressure, which is an advantage of drugs.

**Conclusions.** The findings suggest, that in 2012-2014 the oral hypoglycemic agents in the Ukrainian pharmaceutical market were presented in a wide range. The value of indicator of solvency adequacy (Ca.s.) for different products depends on the manufacturer, ranges from low to high, which makes it possible to select, as well as making treatment available to various segments of the population. Low available drugs were the highly effective and safe drugs of last generation exenatide and liraglutide. It should be noted, that the amount of drugs of domestic production in the pharmaceutical market of Ukraine was gradually increased, that in economic terms was very important factor, because their prices and value of indicator of solvency adequacy were lower than that of foreign-made drugs.